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INTRODUCTION TO MODEL LAWS ON LIGHTING

LAKSHMAN GURUSWAMY*

This Introduction will outline four foundational premises on which the model laws on lighting are built. The first is factual and deals with the unmet global need for lighting. Second, the jurisprudential foundations of model laws are delineated. The third explains the use of national legislation, and not public international law. Finally, the importance of executing and implementing the model laws is emphasized.

I. ACCESS TO ENERGY FOR LIGHTING

We confront a global problem of energy poverty that besets the poorest peoples of the world. In stark contrast to the high-energy world, which depends on hydrocarbons or fossil fuels, nearly one-third of the world's population still lacks access to appropriate forms of energy adequate to meet their basic needs. Globally, around 2.8 billion people (the "Other Third" or "Energy Poor" ["EP"]) have little or no access to beneficial energy for: (a) cooking and heating; (b) illumination; (c) clean water; (d) sanitation; and (e) basic mechanical power essential for performing a variety of domestic and commercial functions.[1]

More than ninety-five percent of the Energy Poor live either in sub-Saharan Africa or developing Asia, predominantly (eighty-four percent) live in rural areas.[2] The EP cannot be classified within simplistic sociopolitical divisions of the world, into developing and developed countries. This is because there is a subset of nations within the developing world, called the least developed countries ("LDCs"). In 2014, the LDCs consisted of forty-eight countries and 880 million people located primarily in Africa and Asia.[3] The LDCs have been officially identified by the U.N. as "least developed" in light of their low income, (three-year average gross national income ["GNI"] per capita of less than U.S. $992), weak human assets (low nutrition, high mortality, lack of school enrollment, and high illiteracy), high economic vulnerability, exposure to natural shocks and disasters, prevalence of trade shocks, economic smallness, and economic remoteness.[4]

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*Lakshman Guruswamy is a Nicholas Doman Professor of law, University of Colorado at Boulder. This Introduction is based upon and reproduces earlier works of the author.

1. Lakshman Guruswamy, *Global Energy Justice, in* INTERNATIONAL ENERGY AND POVERTY: THE EMERGING CONTOURS 55-60 (Lakshman Guruswamy ed., 2015).

2. *Energy Poverty*, INTERNATIONAL ENERGY AGENCY, http://www.iea.org/topics/energypoverty/ (last visited Apr. 20, 2016).

3. U.N. Dep't of Economic and Social Affairs, *List of Least Developed Countries*, UNITED NATIONS (Feb. 16, 2016), http://www.un.org/en/development/desa/policy/cdp/ldc/ldc_list.pdf.

4. U.N. Off. Of The High Rep. For The Least Developed Countries, Landlocked Developing

While twenty-eight percent of people in developing countries lack access to electricity, the number in the LDCs is seventy-nine percent.[5]

These LDCs may be contrasted to another subset of developing countries, sometimes called newly industrialized countries ("NICs") or advanced developing countries, which have made tremendous economic strides in recent decades. This category includes the BRIC countries of Brazil, Russia, India, and China,[6] South Africa, and the "Asian Tigers" of Taiwan, Singapore, Hong Kong, and South Korea.[7] It also includes Thailand, Indonesia, Malaysia, and the Philippines, which are following the trajectory of exceptional economic growth and rapid industrialization of the Asian Tigers and have consequently been dubbed "Tiger Cub Economies."[8]

However, access to clean energy or electricity is not uniform within NICs. The EP are a significant population in NICs like India, and to a lesser extent China. The EP in these countries suffer from a dearth of energy in their households, are denied the chance of making a living whether by way of agriculture, industry, or crafts, and lack energy for their hospitals and schools serving their communities and how the lack of beneficial energy prevents and negates development law, as a normative construct. The EP also lack access to lighting, and these Model Laws on Lighting for Developing and Developed countries address this phenomenon. Lighting or illumination is essential to human progress and without it "mankind would be comparatively inactive about one-half of its lifetime."[9] The scorching sun and withering temperatures in the LDCs prevent agricultural labor during the daytime and reduce productivity, and fifty-eight percent the absence of artificial lights severely impedes working at night.[10] Without lighting it is not possible for students to do homework after nightfall.[11] The absence of lighting creates physical

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Countries And Small Island Developing States, *About LDCs*, UNITED NATIONS, http://unohrlls.org/about-ldcs/ (last visited Apr. 20, 2016).

5. GWENAELLE LEGROS ET AL., THE ENERGY ACCESS SITUATION IN DEVELOPING COUNTRIES: A REVIEW FOCUSING ON THE LEAST DEVELOPED COUNTRIES AND SUB-SAHARAN AFRICA 6 (UNDP: Environment and Energy Group eds., 2009).

6. Nicole Thompson, *BRICS: Industrialized Countries with Growing Economic Power*, LATIN POST, http://www.latinpost.com/articles/5436/20140102/brics-industrilized-countries-economic-power.htm (last visited Apr. 20, 2016); *see also* Juan Hidalgo, *The Rise of Emerging Economies: Challenges and Liberal Perspectives* 5, 7 (Liberal Institute, Occasional Paper 18, 2013), http://object.cato.org/sites/cato.org/files/articles/the-rise-of-emerging-economies-challenges-and-liberal-perspectives.pdf.

7. Robert Barro, *The East Asian Tigers Have Plenty to Roar About*, BUSINESS WEEK (1998), http://scholar.harvard.edu/barro/files/98_0427_easiantigers_bw.pdf; *see also* Hidalgo, *supra* note 6, at 9.

8. Yen Makabenta, *No Miracle, Just A Tiger Cub Economy*, THE MANILA TIMES (May 26, 2014), http://www.manilatimes.net/no-miracle-just-a-tiger-cub-economy/99627/.

9. MATTHEW LUCKIESH, ARTIFICIAL LIGHT: ITS INFLUENCE UPON CIVILIZATION (1920).

10. Lakshman Guruswamy, *Introduction, in* INTERNATIONAL ENERGY AND POVERTY: THE EMERGING CONTOURS (Lakshman Guruswamy ed., 2015) [hereinafter Guruswamy, *Introduction*].

11. Simon Batchelor et al., *The Gender-Energy-Poverty Nexus: Finding the Energy to Address Gender Concerns in Development*, 7 (2002), http://www.riaed.net/IMG/pdf/DFID_Doc_Energy_Gender.pdf; *see also* Guruswamy,

insecurity, particularly for women and children, while venturing out in the darkness, and almost entirely prevents commercial activity after dark. Almost 500 million people rely on kerosene for illumination.[12] The hazards of kerosene, such as fires, explosions, and poisonings resulting from children ingesting it, are extensively documented, and children and women are disproportionately affected.[13] There is evidence implicating kerosene with other ailments including the impairing of lung functions, asthma, cancer, and tuberculosis.[14] The use of kerosene and candles is costly. Households often spend ten to twenty-five percent of their income on kerosene.[15] Over U.S. $36 billion is spent on kerosene annually, U.S. $10 billion of which is spent in sub-Saharan Africa.[16]

II. JURISPRUDENTIAL FOUNDATION[17]

The jurisprudential thesis underlying the assertion that law should be used for societal problems solving is that law is an "instrument," "tool," "machine," or "engine" for serving or achieving social objectives.[18] Law in this sense is being used to achieve practical aims.[19] Robert Summers, in discussing the use of the machinery of law to achieve socio-economic objectives, saw it as a particularly American form of legal theory spawned by theorists like Oliver Wendall Holmes, Roscoe Pound, John Dewey, John Chipman Gray, Karl Llewellyn, Walter Wheeler Cook, and Felix Cohen.[20] Summers coined the phrase "pragmatic instrumentalism" to describe how these theorists created a theory of adjudication focused on the role of judges in shaping and molding law to achieve social means or ends.[21] The pragmatic instrumentalists relied on courts as instruments or

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Introduction, supra note 10.

12. Nicholas Lam et al., *Kerosene: A Review of Household Uses And Their Hazards in Low –And Middle-Income Countries* 15:6 J. OF TOXICOLOGY AND ENVTL. HEALTH 396 (2012), http://ehsdiv.sph.berkeley.edu/krsmith/publications/2012/kerosene_review_12.pdf.

13. Lam et al., *supra* note 12, at 423; Michael Peck, *Epidemiology of Burns Throughout the World, Part I: Distribution and Risk Factors*, 37 BURNS at 1096 (2011).

14. Lam et al., *supra* note 12, at 399–401, 412–23.

15. *Lighting the Way*, THE ECONOMIST (Sep. 1, 2012), http://www.economist.com/node/21560983.

16. *Id.*

17. This section is based upon and reproduces Lakshman Guruswamy, *Model Laws on Cooking, in* INTERNATIONAL ENERGY AND POVERTY: THE EMERGING CONTOURS 287-90 (Lakshman Guruswamy ed., 2015) [hereinafter *Model Laws on Cooking*]; Lakshman Guruswamy, *Drafting Model Laws on Indoor Pollution for Developing and Developed Nations Workshop, July 12-13, 2012, Boulder, Colorado: Introduction*, 24 COLO. J. INT'L ENVTL. L. & POL'Y 319 (2013) [hereinafter *Drafting Model Laws on Indoor Pollution*]; Lakshman Guruswamy, *The Contours of Energy Justice, in* INTERNATIONAL ENVIRONMENTAL LAW AND THE GLOBAL SOUTH 529 (Shawkat Alam et al. eds., 2015) [hereinafter Guruswamy, *The Contours of Energy Justice*].

18. *See generally Drafting Model Laws on Indoor Pollution for Developing and Developed Nations Workshop, supra* note 17, at 330.

19. ROBERT SUMMERS, INSTRUMENTALISM AND AMERICAN LEGAL THEORY 20 (1982).

20. *Id.* at 11; *see generally id.* at chs. 2-12.

21. MICHAEL S. MOORE, EDUCATING ONESELF IN PUBLIC: CRITICAL ESSAYS IN JURISPRUDENCE 194 (2000).

machinery for achieving their goals.[22] Their attention was focused on what judges did when interpreting the written form of a legal text.[23] They contended that judges engaged in interpreting a legal text to ascertain its true meaning cannot do so by a simple parsing of the plain words.[24] Instead, judges should consider and construct their meaning in light of the context of the law as illustrated, for example, by the goals or objectives it was meant to achieve.[25]

In addition to the pragmatic instrumentalists who charted a new theory of adjudication, and "a distinctive type of legal theorizing"[26] in the United States, the use of law for social engineering could trace its jurisprudential lineage to the British philosopher, jurist, and social reformer. Jeremy Bentham (1748–1832). Bentham, perhaps best known for his utilitarian philosophy, was also an English legal revolutionary who re-drew the contours of law.[27] In doing so, he recreated a vastly expanded domain of law in a way that had not hitherto been done. He called for a complete, comprehensive, and integrated legislative re-envisioning of the existing system of law and government.[28] Bentham expounded the necessity for a new "form" of law that laid the foundations of a reformed society, in which the "whole of the community's social system no less than the community's legal system was to be located analytically within the province of legislation."[29] Moreover, he explicated how to design, draft, implement, and generally use legislation to achieve the social objectives of the new kind of law he was calling for.[30] The vast and theretofore shapeless socio-political expanse envisioned by him had to be legislatively mapped and populated, and become part of a great reformist enterprise based on a new concept of law.[31]

One of the major problems he confronted was that such an expansive concept of law flew in the face of the reality of his day, as reflected in the existing corpus of law, received orthodoxy, and extant legal theory. Legal theory of his time envisioned a minimalist state. For example, William Blackstone, in his masterly Commentaries on the Laws of England, first published in 1766, provided a complete overview of English law.[32] Sections II and III of Blackstone's Introduction to the Commentaries on the Laws of England, "Of the Study, Nature

22. *See generally Drafting Model Laws on Indoor Pollution*, *supra* note 17, at 320.

23. *Id.*

24. *Id.*

25. *Id.*

26. SUMMERS, *supra* note 19, at 11.

27. See *generally* William Holdsworth, *Bentham's Place in English Legal History*, 28 CAL. L. REV. 568, 596 (1939-1940); *see generally Drafting Model Laws on Indoor Pollution*, *supra* note 17, at 320.

28. *See generally* Holdsworth, *supra* note 27; *see generally Drafting Model Laws on Indoor Pollution*, *supra* note 17, at 320.

29. DAVID LIEBERMAN, THE PROVINCE OF LEGISLATION DETERMINED 286 (1989).

30. *See generally Drafting Model Laws on Indoor Pollution*, *supra* note 17, at 320.

31. *See generally id.*

32. WILLIAM C. SPRAGUE, BLACKSTONE'S COMMENTARIES ABRIDGED (9th ed. 1915), http://books.google.com/books?id=zDA0AQAAMAAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false.

and Extent of the Laws of England," offers an overview of the law in general.[33] In this authoritative account of English law, Blackstone divides law into the unwritten common law and written or statutory law. According to Blackstone, "[s]tatutes are either declaratory of the common law or remedial of some defects therein."[34] What is evident is that Blackstone treats the common law as the primary source of law and confines legislation to either declaring the common law or remedying its defects.[35] While the latter conclusion may be interpreted as resembling the expanded concept of legislation called for by Bentham, which is not the case.[36] It is clear from Blackstone's account of written (or statutory) law that it occupied an adjectival or minor position below the foundational common or unwritten law.[37] Common law was primarily, and nearly exclusively, concerned about the private rights of person and property.[38] By contrast, the statute book (statutory law), except in the area of criminal law, was almost bereft of public law such as administrative law, regulation, or governance which dominates the statutory law of the modern state.[39] Blackstone did not favor the creation of a new and expanded realm of statutory law, and neither did Edmund Burke, who was pleased that "the laws reach but a very little," and vehemently disliked expanding its province.[40] Law, clearly, was not seen as an instrument of social engineering as understood in today's terminology.[41]

Bentham set his face to liberating existing law "from the trammels of authority and ancestor-wisdom on the field of law" and of modernizing the legal system through legislation.[42] Bentham expressed contempt for the common law and English judges, and scorned at the idea that the judiciary could transform law and society.[43] A distinguished English judge sums up Bentham's low opinion of judges and lawyers: "As he saw it, in order to enrich themselves, lawyers ensured that English civil justice was '. . . a system of exquisitely contrived chicanery which maximises delay and denial of justice.'"[44] In Bentham's view, the task of

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33. *Id.*

34. *Id.* at 15.

35. *See generally Drafting Model Laws on Indoor Pollution*, *supra* note 17, at 321.

36. *See generally id.*

37. *Id.*

38. SPRAGUE, *supra* note 32, at 10.

39. *See generally Drafting Model Laws on Indoor Pollution*, *supra* note 17, at 321.

40. EDMUND BURKE, *Thoughts on the Cause of the Present Discontents*, *in* SELECT WORKS OF EDMUND BURKE 69, 99 (E. J. Payne ed., Liberty Fund 1999) (1770) http://files.libertyfund.org/files/796/0005.01_Bk.pdf.

41. *See generally Drafting Model Laws on Indoor Pollution*, *supra* note 17, at 321.

42. JEREMY BENTHAM, A COMMENT ON THE COMMENTARIES AND A FRAGMENT ON GOVERNMENT 424 n.1 (J. H. Burns & H. L. A. Hart eds., Athlone Press 1977) (1776); *see also* JOHN COMMONS, INSTITUTIONAL ECONOMICS: ITS PLACE IN POLITICAL ECONOMY 219 (3rd ed. 2009).

43. JEREMY BENTHAM, AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION (J. H. Burns & H. L. A. Hart eds.,1996) (1789); JEREMY BENTHAM, OF LAWS IN GENERAL (H. L. A. Hart, ed., 1970).

44. Lord Neuberger of Abbotsbury, Swindlers (Including the Master of the Rolls?) Not Wanted: Bentham and Justice, Bentham Lecture 2011 (March 2, 2011).

re-designing law was a task for the legislature, not the judges.[45]

The following model laws are based on Bentham's jurisprudence. These model laws serve as blueprints for legislation that could be enacted by the legislatures of developed and developing countries. Legislatures enacting these model laws will be adopting problem solving legislative solutions that clearly fall within the compass of law envisioned by Bentham. For example, the model laws for developing countries are actually blueprints for the national dissemination of clean and accessible lighting. The model laws for developed countries provide a blueprint to legislate support for combating these issues through the common but differentiated responsibility for sustainable development accepted by developed countries.

A. Using National Legislation

The model laws use national legislation to address a global problem. In doing so it restates fundamental principles of public international law. Public international law is the law that creates and governs inter-state (or country) relationships, primarily through contracts called treaties, conventions, and protocols.[46] Treaties are written agreements between two or more states, governed by international law, creating or restating legal rights and duties.[47] The *Vienna Convention on the Law of Treaties* deals comprehensively with questions concerning treaties, which are also described as conventions, agreements, protocols, covenants, and pacts.[48]

The right to sustainable development is embodied in international law,[49] as expressed particularly in the treaty titled *U.N. Framework Convention on Climate Change* unequivocally institutionalizes sustainable development.[50] The UNFCCC is the most important and extensively adopted energy treaty, having obtained 196 instruments of ratification.[51] Article 3(1) of the UNFCCC states that the parties have a right to and should promote sustainable development, and that economic development is essential for adopting measures to address climate change,[52] while Article 3(2) affirms international law.[53]

The UNFCCC coalesced with another widely accepted treaty, the *Convention*

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45. *See generally Drafting Model Laws on Indoor Pollution*, *supra* note 17, at 322.

46. *See generally Model Laws on Cooking*, *supra* note 17.

47. Vienna Convention on the Law of Treaties art. 2(a), May 23, 1969, 1155 U.N.T.S. 331 (entered into force Jan. 27, 1980) [hereinafter Vienna Convention].

48. *See generally* Vienna Convention, *supra* note 47.

49. International law is the law governing relations between legally sovereign co-equal states and treaties are the primary way in which international law is created.

50. *See* United Nations Framework Convention on Climate Change, *opened for signature* May 9, 1992, 1771 U.N.T.S. 170 [hereinafter UNFCCC].

51. U.N. Framework Convention on Climate Change, *Status of Ratification of the Convention*, UNITED NATIONS, http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php (last visited Apr. 30, 2016). *See generally* Guruswamy, *The Contours of Energy Justice*, *supra* note 17, at 542.

52. UNFCCC, *supra* note 50, at art. 3(1).

53. *Id.* at art. 3(2).

on Biological Diversity ("CBD") by forcefully and unequivocally expressing the developmental priority of sustainable development.[54] Article 4(7) of the UNFCCC and Article 20(4) of the CBD re-affirm in unison that parties "will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties."[55] Specifically, therefore, energy poverty can only be addressed within a framework of distributive justice, as part of the overall right to economic and social development established by the foundational norm of sustainable development.[56] Both treaties require that full consideration be given to the special circumstances of developing countries. Parties to the UNFCCC are required to protect the climate system on the basis of equity and in accordance with their common but differentiated responsibilities and respective capacities.[57] The principle of common but differentiated responsibility, which is found in Principle 7 of the *Rio Declaration on Environment and Development*[58] and conclusively embodied in Articles 3(1) and 4(1),[59] affirms the responsibility of the developed country parties to take the lead in combating climate change and the adverse effects thereof.

It is possible for the 196 countries in the world to come together as a lawmaking assembly with a goal of negotiating and drafting a global treaty to address issues associated with lack of lighting.[60] Under the international law approach, it is also possible for countries to enter into regional multilateral treaties restricted to regions identified by trade or geo-politics.[61] It is also possible for one country to enter into a bilateral agreement with another country.[62] Given the ubiquitous nature of the lack of lighting, and the need for both developed and developing country responses, it is reasonable to conclude that the situation calls for a multilateral global treaty.

However, it is becoming evident that large international treaties or conventions of this kind are exceptionally difficult to negotiate, and even more resistant to implementation and enforcement.[63] Despite tremendous diplomatic- and media-backing, the faltering negotiation of a treaty to replace the Kyoto Protocol[64] is strong evidence of this retreat from large multilateral treaties.

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54. Convention on Biological Diversity, *opened for signature* June 5, 1992, 1760 U.N.T.S. 79 [hereinafter CBD].

55. UNFCCC, *supra* note 50, at art. 4(7); CBD, *supra* note 54, at art. 20(4).

56. *See generally* Guruswamy, *The Contours of Energy Justice*, *supra* note 17, at 542.

57. *See* UNFCCC, *supra* note 50, at art. 3(1).

58. U.N. Conf. on Env. & Dev., *Rio Declaration on Environment and Development*, princ. 7, U.N. Doc. A/CONF.151/26 (Aug. 12, 1992), http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm [hereinafter Rio Declaration on Environment and Development].

59. UNFCCC, *supra* note 50, at arts. 3(1), 4(1).

60. *See generally Model Laws on Cooking*, *supra* note 17, at 289.

61. *See generally id.*

62. *See generally id.*

63. *See generally id.*

64. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, U.N. Doc FCCC/CP/1997/7/Add.1, 37 I.L.M. 22 (1998) [hereinafter Kyoto Protocol].

Additionally, the search for consensus between different legal traditions is not an easy enterprise.[65] Some commentators claim that international treaties and conventions are drafted as multi-cultural compromises between different schemes of law. Consequently, they could be perceived as possessing less merit than the individual legal systems from which they have been derived.[66] Furthermore, if the United Nations Framework Convention on Climate UNFCCC is an example, it takes over a decade to advance from a framework agreement setting out the agenda to the negotiation of protocols requiring collective and specified action.[67]

Legal answers to a global problem could also be viewed through the lens of domestic or municipal legal systems. The numerous developing countries actually afflicted by these issues could respond through domestic or municipal laws.[68] Many of these countries have other laws dealing with differing aspects of pollution and hazardous waste.[69] These laws are enacted by national legislatures, and the present model laws seek to expand the ambit of national pollution and health legislation by providing blueprint legislation on lighting that could be adapted and incorporated into domestic law.[70]

The Model Laws creating national legislation assumes that the lack of lighting is a global and not just a national challenge. Therefore, it is important that the task of providing access to lighting be acknowledged and undertaken by the community of nations consisting of developed and developing nations in which the energy poor live. The Model Laws function within this global compass by creating different model laws for developed and developing countries. The two species of law constitute contrasting sides of the coin of access to energy, where one remains indivisible from the other. It is important that developing countries accept their common responsibility through their model laws. It is crucial, however, that developed countries undertake their common but differential responsibility by bearing their primary moral and legal responsibility for alleviating energy poverty.

Consequently, model laws, serve as the functional equivalent of a hypothetical treaty on energy poverty in which both developed and developing country parties agree to address the issue of lighting. Such a hypothetical treaty will contain provisions uniformly binding on all parties be they developing or developed countries. Admittedly, the Model Laws being enacted by developing and developed countries might not contain identical or uniform language, and to that extent will not bind parties like the common uniform contractual provisions of a treaty. But the laws being enacted nationally must remain faithful to the core elements of the Model Law if they are to be treated and counted as part of the Model Law enterprise. By enacting national legislation adopting the core elements

65. *See generally Model Laws on Cooking*, *supra* note 17, at 289.

66. J.S. Hobhouse, *International Conventions and Commercial Law: The Pursuit of Uniformity*, 106 LAW Q. REV. 530, 530-33 (1990); *see generally Model Laws on Cooking*, *supra* note 17, at 289.

67. Lakshman Guruswamy, INTERNATIONAL ENVIRONMENTAL LAW IN A NUTSHELL 215-16 (West Academic Publishing ed., 2012).

68. *See generally Model Laws on Cooking*, *supra* note 17, at 290.

69. *See generally id.*

70. *See generally id.*

of the Model Laws, the nations of the world will each be creating a stick that will form part of the collective bundle of laws expressing rights and duties addressing global energy poverty.

National laws are the primary laws of the land, and call to be implemented according to their terms. By contrast, treaties typically are not self-executing,[71] and treaty implementation requires another layer of action. The obligations contained in a treaty need to be incorporated into the national law and administration of a country, through implementing or enabling legislation or regulation. This process of implementation can cause problems and delays as it involves invoking and using a new machinery of implementation not contained in the treaty. National laws based on Model Laws are not confronted by this barrier. National laws are the law of the land that is binding and enforceable.

Nations adopting these model laws, or variations of them incorporating the core principles of the model laws, will be using the machinery of law to achieve the compelling social objectives of combating indoor air pollution, global warming, and gender inequality. The model laws can be adopted by municipal or national legislatures, as contrasted to treaties or other international law modalities.

A model law is a legislative text that is recommended to states for enactment as part of their national or state law, or tribal governance regimes.[72] The United Nations Commission on International Trade Law describes model laws as "appropriate" vehicles "for modernization and harmonization of national laws when it is expected that States will wish or need to make adjustments to the text . . . to accommodate local requirements."[73] The Commission further states that this flexibility makes a model law "potentially easier to negotiate," though it emphasizes that states are encouraged to change as little text as possible in adopting model laws.[74]

At a fundamental level, model laws use legislation to generate private and public action.[75] For example, the model law uses a needs assessment to find out what people want and need; encourage different civil society entities, from entrepreneurs and business entities to non-governmental organizations ("NGOs"),

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71. *See, e.g.*, Legal Information Institute, *Self Executing Treaty*, CORNELL UNIVERSITY, https://www.law.cornell.edu/wex/self_executing_treaty (last visited Apr. 30, 2016).

> A self-executing treaty is a treaty that becomes judicially enforceable upon ratification. As opposed to a non-self-executing treaty, which becomes judicially enforceable through the implementation of legislation. A treaty could be identified as either self executing or non-self executing by looking to various indicators, including statements that are made by Congress or the Executive regarding the treaty, indeterminate language of the treaty, or if the treaty deals with a matter within the exclusive law-making power of Congress, indicating that Congress must create implementing legislation.

Id.

72. *See generally Drafting Model Laws on Indoor Pollution*, *supra* note 17, at 323.

73. U.N. COMM'N ON INT'L TRADE LAW, A GUIDE TO UNICITRAL: BASIC FACTS ABOUT THE UNITED NATIONS COMMISSION ON INTERNATIONAL TRADE LAW ¶ 38 (2013), http://www.uncitral.org/pdf/english/texts/general/12-57491-Guide-to-UNCITRAL-e.pdf.

74. *Id.*

75. *See generally Drafting Model Laws on Indoor Pollution*, *supra* note 17, at 324.

to invest and trade in the fabrication, sale, and servicing of lighting ensuring that standards are set and enforced; and solicit international aid and assistance, while establishing a systematic use of monitoring that will ensure that standards are actually being met.[76]

We need new laws because existing law and administration is either nonexistent or unable to address this challenge. In creating new laws, it behooves us to understand that law is an existing, established social mechanism grounded in reality, and that it must command the acquiescence of the peoples it governs. It is not an idealistic and aspirational code of conduct, removed from social reality and actual human behavior. It tries to change behavior, but should not engage in flights of idealistic fancy.

A good law must satisfy some basic criteria. To begin, the law should be based upon a correct identification and diagnosis of the problem or issue that it purports to address.[77] The model laws published herein present sets of Findings, which help in meeting the criteria of correct diagnosis.

Next, following the correct diagnosis, laws "should embody prescriptions aimed at the core of the problem, and deal with the sources of the malady."[78] They should accurately target the sources, and the substantial remedies they prescribe should include methods of implementation and compliance.[79] Where behavioral changes are necessary, the law should be directed toward eliciting them.[80] As Bentham has pointed out, prescriptions are only good if they are actually carried out.[81] In order to secure the implementation of its prescriptions, legislation should set up concrete institutions, whether governmental or private, and contain details where necessary as to how the law should be administered.[82] In the model laws published herein, we have tried to institute some of these social mechanisms.[83]

Another criterion is that the remedies and methods employed by a law "should have a demonstrably beneficial impact on the problem" and help move the country or international community "toward the practical attainment of its goals and objectives."[84] The extent of its beneficial impact will depend on the degree to which a law that may contain an accurate diagnosis and good prescriptions actually changes behavior and benefits people.[85] Consequently, the impact of a law will depend on the nature of its goals or objectives, its methods, and the extent to which

76. *See generally id.*

77. Lakshman Guruswamy, *Judging Treaties*, 101 AM. SOC'Y INT'L L. PROC. 175, 176 (2007).

78. *Id.*

79. *See generally Model Laws on Cooking*, *supra* note 17, at 291.

80. *Id.*

81. JANET SEMPLE, BENTHAM'S PRISON: A STUDY OF THE PANOPTICON PENITENTIARY 134-40 (1993).

82. *See generally Model Laws on Cooking*, *supra* note 17, at 291.

83. *Id.*

84. Lakshman Guruswamy, *Judging Treaties*, 101 AM. SOC'Y INT'L L. PROC. 175, 176 (2007); *see generally Model Laws on Cooking*, *supra* note 17, at 291.

85. *See generally Model Laws on Cooking*, *supra* note 17, at 291.

it succeeds in changing behavior.[86]

The model laws are accompanied by commentaries or "guides to enactment" setting forth explanatory information to assist governments and legislators in using the text.[87] The guides include, for example, information that would assist states in considering what, if any, provisions of the model law might have to be changed to take into account particular national circumstances.[88] The commentaries also include relevant discussions from the working/drafting groups and matters not addressed in the text of the model law that may nevertheless be relevant to the subject matter of the model law.[89]

Adoption of the model laws by a significant number of countries will draw national and international attention to the problems caused by the use of kerosene for lighting and constitute an effective and much needed legal response to these problems.[90]

III. IMPLEMENTATION AND EXECUTION

Recognizing the problems of energy poverty and enacting model laws as a method of addressing this problem, would be incomplete without methods of implementing such laws. Bentham's conception of the domain of law, explains why implementation is an integral part of the law. He argued that "law" does not refer to an enacted single law but is part of a complete body of law, that forms a circle round the whole extent of jurisprudence.[91] He concluded that "A body of laws is a vast and complicated piece of mechanism, of which no part can be fully explained without the rest."[92] It was necessary in his view for implementing methods to ensure that the goals and objectives of a remedial statute were realized.

Bentham goes on to explain why the enactment of the primary or principal legislation which embodies the will of the legislator is incomplete "The will of the legislator concerning the matter in question has indeed been declared: and the punishment has been threatened . . . but as to the means of carrying such threats into execution nothing of the sort has hath yet been made to appear."[93] This required another "subsidiary" law addressed to those executing the law.[94]

The importance of execution, anticipated the development of the modern administrative state, and cannot be overemphasized. Bentham's Constitutional Code sketched the organization and managing of a centralized and hierarchical

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86. *Id.*

87. *Id.*

88. *Id.*

89. *Id.*

90. *Id.*

91. LIEBERMAN, *supra* note 29, at 262 (quoting the manuscript of Jeremy Bentham).

92. THE COLLECTED WORKS OF JEREMY BENTHAM: AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION 299 n.b2 (J.H. Burns et al. eds., 1996) [hereinafter THE COLLECTED WORKS OF JEREMY BENTHAM].

93. WAYNE MORRISON, JURISPRUDENCE: FROM THE GREEKS TO POST-MODERNITY 190 n.17 (1997) (quoting Bentham).

94. *Id.* at 190.

officialdom with a government of thirteen ministries including health, finance, trade, preventive service or police, and indigent relief.[95] In the view of one commentator, this detailed scheme looks forward to Weber's work on bureaucracy, and led to the building piecemeal of an administrative machine of great complexity.[96] It resulted in the formation of an effective police force for London (1829), the rigorous and systematic application of the poor law (1834) and the creation of authorities for the enforcement of laws to promote public health in the 1840s.[97]

The manner and methods of implementation and enforcement of the Model Laws on Lighting for Developing and Developed Countries is written into and forms part of the statute itself. It should be noted at the outset that statutes do not contain footnotes substantiating the conclusions they arrive at. Consequently, each Model Law contains Commentaries that explain the rationale and provide substantiation and backing for the various sections of the statute. These commentaries may contain materials that might otherwise be found in footnotes.

A brief delineation of the anatomy or architecture of the two Model Laws gives us a window into how they address the need for lighting. The Model Law for Developing and Developed Countries contain different features but some are common. They both contain Sections on Findings which summarize the facts surrounding the absence of access to lighting. Another common set of Sections deal with Policy stating the policies of the governments in dealing with this issue, and the third covers Definitions.

The other substantive sections of the Model Laws of Developing and Developed Countries differ from one another. The Model Law on Developing Countries deals with the issues germane to developing countries, while the Model Law on Developed Countries deals with the matters relevant and applicable to developed countries.

The developing country law has sections dealing with national minimum quality and performance standards along with testing and certification of lights. The law creates administrative agencies with discretion to change some of the specifics and extend deadlines after proper inquiry. The administrative agency is charged *inter alia* with conducting needs assessments, and carrying out pilot programs as well as with implementation in general. This includes collaboration with other agencies and bottom up peoples input, and solicitation of international assistance for technological and commercial assistance. The law provides for the creation of a strategic five-year lighting plan, and the encouraging of entrepreneurship and private lighting product industry through tax incentives and loans. Other sections of the developing country law deal with research and

95. THE COLLECTED WORKS OF JEREMY BENTHAM, *supra* note 92, at xxxix.

96. SIR COURTENAY ILBERT, LEGISLATIVE METHODS AND FORMS 212-13 (1901)

97. *See id.*; *see also* DAVID ROBERTS, VICTORIAN ORIGINS OF THE BRITISH WELFARE STATE 21(1960); HENRY PARRIS, CONSTITUTIONAL BUREAUCRACY: THE DEVELOPMENT OF BRITISH CENTRAL ADMINISTRATION SINCE THE EIGHTEENTH CENTURY (1960);F.M.G. WILSON, MINISTERS AND BOARDS: SOME ASPECTS OF ADMINISTRATIVE DEVELOPMENT SINCE 1932 (1954).

development, seeking foreign aid, education and public health issues. The Court based, Enforcement sections provide for citizen enforcement as well as criminal penalties.

The developed country law provides for the developed countries to create international partnerships, and provide local entrepreneurs with financial, institutional, and technological assistance to develop, manufacture, promote, distribute, and maintain improved lighting products and centralized charging stations in developing countries. It further requires developed countries to create a fund amounting to $15 million each year for ten years and stipulates mechanisms for the disbursement of those funds to promote joint research, development and demonstration of appropriate and affordable lighting products, as well as to track environmental and public health problems created by the use of kerosene.

What is presented are two sets of laws that are actually blueprints for promoting affordable and sustainable lighting for the energy poor.

DEVELOPMENT AND DISSEMINATION OF CLEAN LIGHTING

MODEL LAW ON LIGHTING FOR DEVELOPING COUNTRIES

A Bill

To promote the development and deployment of clean lighting to save lives, improve livelihoods, empower women, and combat global warming by creating a thriving global market for clean, affordable, and efficient household, commercial and community lighting, and for other purposes.

Be it enacted by the [legislative organ] of the [developed country] assembled,

Short Title

This Act may be cited as the "*Development and Dissemination of Clean Lighting* Act of [year]."

Effective Date. This Act becomes effective on [*date*].

§ 1. Findings

(a) [*Name of country*] is a member of the community of nations that has accepted well-recognized principles of international law and policy establishing the right of developing countries to sustainable development.

(b) [*Name of country*] seeks to support sustainable development pertaining to energy poverty and access to safe and sustainable lighting products through this Act.

(c) It is estimated that of the 1.3 billion people worldwide without access to electricity, most rely on kerosene for illumination.

(d) The use of kerosene for lighting generates indoor air pollution, contributing to the deaths of 1.8 million people per year. Kerosene fires kill more than 1 million people per year.

(e) [*Number of people*] in [*name of country*] currently use kerosene for lighting.

(f) Kerosene fires and indoor air pollution cause the deaths of [*number of*

people] in [*name of country*] per year.

(g) Children are disproportionately vulnerable to the dangers of kerosene. Accidental ingestion of kerosene leads to fever, cough, abdominal discomfort, or death.

(h) Light generated by kerosene lamps is poor and inefficient, rendering it virtually impossible for people, especially women and children, to accomplish household and social tasks, or engage in economic activity after nightfall.

(i) Lighting costs for kerosene are 325-1625 times higher than those for electric light bulbs, and are borne by some of the world's poorest people.

(j) Kerosene is fossil fuel-based, thus a nonrenewable energy source. Kerosene lamps consume an estimated 77 billion liters of fuel per year. Each year, the burning of kerosene for lighting emits 240 million tons of carbon dioxide into the atmosphere, thus contributing to global climate change.

(k) Safe, sustainable lighting positively impacts the quality of life and environment by:

(i) Allowing women, children, and men to engage in educational and economic endeavors after nightfall,

(ii) Promoting gender equality and women's empowerment,

(iii) Improving household health and safety,

(iv) Alleviating the financial burden presented by kerosene,

(v) Advancing environmental stability by reducing use of kerosene, and

(vi) Reducing contributions to global climate change.

§ 2. Policy

The House of Parliament hereby declares it is the national policy of [*name of country*] to:

(a) Appropriate financial resources towards the research and development of the most appropriate and sustainable energy technologies for improved indoor lighting products that advance the objectives of this Act in [*name of country*];

(b) Foster the growth of a domestic indoor lighting manufacturing industry by supporting entrepreneurs through tax incentives, loans, and micro- and other forms of financing that advance the objectives of this Act;

(c) Ensure that all indoor lighting products meet relevant standards for physical durability, product life-span, and light output;

(d) Install and distribute indoor lighting products in a matter that emphasizes accessibility while encouraging the recipient to contribute to the cost in currency, exchange, and/or sweat equity;

(e) Stimulate community participation in the financing, manufacturing, distribution, and promotion of the objectives of this Act;

(f) Seek the assistance, expertise, guidance, and experience of non-governmental organizations (NGOs) and community advocacy groups in all aspects of the implementation of the Act;

(g) Promote awareness and education about indoor air pollution caused by

kerosene lamps and lanterns;

(h) Promote the involvement of current kerosene lamp and lantern users, *inter alia*, in the research, design, development, manufacturing, distribution, monitoring, maintenance, evaluation, and marketing of improved indoor lighting products; and

(i) Conduct training on use and maintenance to indoor lighting product users and community members.

§ 3. Definitions

For the purposes of this Act:

(a) "Administrator" means the administrator of the Lighting Agency.

(b) "Agency" means the Lighting Agency ("LA").

(c) "Certification" or "certified" refers to certification by an entity or organization in the country of origin, which is authorized by the LA.

(d) "Endangerment" means the exposure, voluntary, or involuntary, of individuals to conditions harmful to their physical health, and includes circumstances arising from willful or negligent misrepresentation.

(e) "Lighting" refers to artificial indoor or outdoor lighting.

(f) "Lighting products," refers to indoor or outdoor lighting suitable for off-grid applications.

(g) "Local conditions" means the socioeconomic conditions in the area, based on an overall assessment of economic factors including the ability to pay, cultural factors including a willingness to change patterns or behavior in use of lighting products, and social factors, including the identification of primary decision-makers in households, those who are affected most by lack of beneficial lighting, and the primary social agents in communities.

(h) "Micro-financing" refers to loans that are granted for design, production, marketing, distribution, sale, maintenance, and repair of lighting products.

(i) "Minister of Energy" includes other executive branch equivalent administrators found in a non-parliamentary system (*e.g.* Secretary).

(j) "Organization" means an entity other than a governmental body, which was established or organized for any purpose relevant to this Act. The term refers, *inter alia*, to a corporation, company, guild, association, partnership, NGO, local community advocacy organization, trust, or trade union.

(k) "PAO," a provincial assessment officer, is defined in Section 4(a) of the Act.

(l) "Sweat equity" includes the labor, skill, goods, or community services offered as consideration by recipients, in part or in full, for lighting products. Sweat equity is transferable among households. Sweat equity includes, but is not limited to, the following activities:

(i) Labor provided in producing, installing or publicizing solar based lighting products;

(ii) Transportation of materials for lighting products; and

(iii) Participation in public education and community outreach.

§ 4. Establishment of Agency

The Lighting Agency (LA) is hereby established to implement the provisions of this Act. The Administrator of the Agency shall administer this statute by, *inter alia*:

(a) Conducting Needs Assessments and Developing Specifications

Within 120 days of the adoption of this Act, the LA shall deploy [*N (the number of provinces or sub-national governments)*] provincial assessment officers (PAOs), one in each of the country's [*N*] provinces. PAOs shall, within 6 months of designation, in collaboration with [*name of appropriate NGO or NGOs*] and local health personnel, conduct needs assessments that will identify and investigate:

(i) Types of household lighting currently being used in the province;

(ii) Typical expenses associated with household lighting in the province;

(iii) The needs and receptivity of the populace with respect to modern lighting products, with an emphasis on the needs of women and children;

(iv) Local aesthetics and its relationship to the desirability of lighting products;

(v) Any potential barriers to adoption of such lighting products, including cultural and geographic barriers and physical and environmental conditions;

(vi) Exposure to indoor air pollution and other hazards from fuel-based lighting;

(vii) The financial status and market infrastructure of local communities; and

(viii) The feasibility of decentralized power generations that can supply electricity for each community.

(ix) The practicability of installing charging units for batteries

(b) Lighting Product Selection

The LA, in collaboration with the Minister of Energy and the PAOs, will assist in the marketing of lighting products that suit the needs of [*name of country*].

(c) Pilot Programs

The PAOs, under the direction of the Administrator and with the assistance of [an appropriate organization], shall carry out pilot programs in each province, which can be replicated in the rest of the country, for the purpose of identifying challenges and developing procedures in advance of full national implementation. The communities selected for the pilot programs by the Agency shall be the ones in which:

(i) Electricity is not widely available;

(ii) Surveys and Needs Assessments, carried out by the PAOs, reveal that a majority in the community want to participate in the Pilot Project;

(iii) There are not more than 500 households

(iv) Individuals are willing and able to pay for lighting products through sweat equity, currency, or other forms of exchange.

(v) The population is demographically representative of the [*number of people in the country*] that do not have access to modern lighting.

(d) Completion and Review of the Pilot Projects

At least two Pilot Projects shall be completed within targeted communities for each province before attempting the widespread installation of lighting products in the rest of the province. The data revealed by each Pilot Project and the lessons learned shall be analyzed and reviewed in a Pilot Project Report generated by the LA which will, among other things, clarify the goals of the pilot projects, and whether these goals were met. This report, as well as the projects themselves, shall be open to scrutiny by the public, NGOs, and by other government officials.

§ 5. Administrative Discretion

After holding a public hearing, the Administrator may reasonably phase in implementation of the Act over a period of time in accordance with an area's Local Conditions, but this period may not exceed 3 years.

§ 6. Implementation and Administration

(a) Implementation

The Administrator shall use the information revealed by the Pilot Projects to implement this Act by:

Consulting and collaborating, with the Ministers of (1) Health and Human Wellness, (2) Energy, (3) Environment & Natural Resources, (4) Education, and (5) Industry & Commerce, and within reasonable time constraints, receive their inputs.

(ii) Encourage public participation in the implementation of the provisions of this Act, by incorporating:

(1) Notice and comment prior to the adoption of any major rules implementing the provisions of this Act, as governed by the [*name of country's administrative procedure act, if applicable*];

(2) Open meetings whenever the LA has a quorum present for a meeting in which the LA discusses any regular business of the agency concerning this Act;

(3) A community liaison, answerable to the PAO, in all aspects of implementation of the Act; and

(4) Providing accessible means for the public to offer input and feedback regarding the implementation of this Act's provisions.

(iii) Where appropriate, seeking international aid assistance in the form of technological assistance and expertise for monitoring and evaluation from, *inter alia*, intergovernmental organizations, other states, NGOs, community advocacy groups, corporations, private individuals, and charitable trusts.

(iv) Creating and implementing a system whereby end users can acquire lighting products by sweat equity or exchange;

(v) Creating and implementing a program for recycling used batteries, which may require lighting product distributors, retailers, and charging stations to collect

used batteries;

(vi) Using innovation, affordable and appropriate sustainable energy technologies, and/or techniques that provide greater economic benefits, at a limited cost to the end-user;

(vii) Using technologies and organizational methods, which have been successfully tried, tested, and demonstrated by other developing countries;

(b) Strategic National Lighting Plan (3-Year Plan)

After a widespread, open, and public consultation process, the LA shall draw up renewable strategic 3-Year Plans with annual targets and objectives that shall be publicly announced and publicized. The first Plan shall be completed within one year of the coming into operation of this Act. Once a 3-Year Plan has been completed, the LA shall issue annual reports that are announced and publicized on the actions taken pursuant to the 3-Year Plan and the extent to which the targets or objectives have or have not been met. The annual reports will be examined annually by the Parliament of [*name of country*] through hearings and used as necessary to pass or amend laws.

(c) Stimulate the Lighting Product Industry and Market

The LA shall stimulate and encourage the creation of a robust domestic lighting product industry, by engaging, *inter alia*, in the following:

(i) Improving access to capital for new businesses by providing tax incentives and loans, and by removing restrictions on foreign investment in the lighting product industry. To this extent, the LA shall encourage the growth of markets that benefit the rural energy poor;

(ii) Establishing certification and standardization protocols for lighting product parts and equipment as described in Section 8; and

As stated in Section 9, collaborating with the Ministry of Energy to disburse grants for research and development to qualified universities in [*name of country*], which are able to undertake research and development.

(d) Monitoring and Inspection

In order to ensure that lighting product distribution requirements have been properly met, through collaboration with PAOs, the Administrator shall, with immediate effect, begin the following activities towards implementation of this Act:

(i) *Assessment.* Ascertain the rate and severity of accidents associated with kerosene before the installation of lighting products, and determine the rate at which members of households, notably women and children, are able to engage in educational or other productive activity after dark.

(ii) *Post-Installation Monitoring.* Monitor accidents, and after-dark activities (as described in (i), above) of the homes referred to in Section 6(c), above, after lighting products are installed within the following time-frames:

Phase 1 – within 1 year of installation;

Phase 2 – within 18 months of installation;

Phase 3 – within 3 years of installation; and

Annual monitoring once every year, thereafter.

(iii) *Charging Station and Use Monitoring.* If applicable, inspecting centralized charging facilities and end-user sites to ensure they are being used and are working properly.

Economic Sustainability Monitoring. Procedures to monitor the financial performance of the program to ensure its economic sustainability.

Protocol for Testing. Negotiating and finalizing with laboratories on a protocol for testing based on the provisions of this law.

Reporting. Submitting to Parliament a report (Administrator's Report) on the findings of the monitoring and inspection efforts under this Section, 2 years after this Section comes into force and annually thereafter.

Applicability in relation to Pilot Projects. The monitoring and inspection requirements here are applicable to final projects subsequent to the pilot project.

(e) Statistics and Communication

The Lighting Agency shall consult data obtained under Article 4 to aid in implementation, in addition to other sources.

The Lighting Agency shall accurately report its findings for implementing final projects to the public and other government agencies, and keep administrative records.

§ 7. Authorization and Appropriations

[*Appropriated amount (national currency or currency of choice)*] shall be authorized and appropriated every year, beginning in [*year*], continuing for the next 5 years (or until the Act is adopted), and allocated as follows:

(a) [*Appropriated amount (national currency or currency of choice)*] to the Administrator for the administrative costs of implementing this Act.

(b) [*Appropriated amount (national currency or currency of choice)*] for needs assessments and pilot programs pursuant to this Act and implementation of the required programs. These funds may be provided in part to appropriate NGOs for implementation of the required programs. These NGOs may also provide funding of their own.

(c) [*Appropriated amount (national currency or currency of choice)*] to the Ministry of Energy to administer a program for the research and development of appropriate lighting technologies. This funding shall remain available until expended.

(d) Pursuant to the effort to maximize adoption of lighting products within a 5-year period, the Administrator shall endeavor to acquire at least [*appropriate amount*] of annual funding from domestic and international sources to be invested directly in national and NGO-sponsored programs involving the provision of illumination.

(e) [*Appropriated amount (national currency or currency of choice)*] to the Ministry of Health to carry out its duties under Section 10.

§ 8. National Minimum Standards, Testing and Certification

(a) Establishing Quality and Performance Standards. The Agency shall establish mandatory minimum quality and performance standards for lighting products, informed by internationally agreed standards. All lighting products marketed or sold in [*name of country*] shall be certified as meeting the standards established by the Agency.

(b) Quality standards shall require:

(i) That the brightness and luminosity of lighting be adequate for the purposes for which they are intended, such as domestic, commercial or community uses;

(ii) Durability standards for batteries, bulbs, PVC panels, circuit boards, charge converters, inverters, the casing, other equipment or mechanical parts of lighting products;

(iii) That spare parts are adequate;

(iv) Accurate product labeling in accordance with certification standards in subsection (d);

(v) No cadmium or mercury to be present in the product; and

(vi) Truth in advertising

(c) Performance standards shall add specificity to quality standards and shall be reviewed at regular intervals. Performance standards shall differentiate, *inter alia,* between lighting for household or domestic use, commercial use, agricultural use, and community use in hospitals, schools, buildings, and roads.

(i) Levels of brightness and luminosity for general household or domestic use must provide a minimum output of 50 lumens. The LA may, after open public hearings, change this standard to others based on the best practicable, affordable, and technologically feasible standards.

(ii) Levels of brightness or luminosity for commercial, agricultural and community purposes shall be established by the Agency, within 1 year of the enactment of this statute, after open public hearings, based on the best practicable, affordable, and technologically feasible standards.

(d) **Testing and Certification**

(i) All new lighting products and component parts sold and/or marketed under this Act in [*name of country*] shall be tested and certified by approved private, public, or NGO-owned and operated laboratories at the country of origin or manufacture.

(ii) Certification will attest that the products have been tested according to protocol, and comply with the relevant quality and performance standards referred to in this section.

(iii) **Labeling.** Every lighting product and component sold or marketed shall contain consumer-facing labels referring for which social sector(s) (household, commercial, etc.) the product has been certified. All of the following must be reported accurately specified on the label:

(1) manufacturer;

(2) model name and model number;

(3) light output;

(4) lamp type;

(5) run time;

(6) charger rating; and

(7) if the light has phone or small electronics charging capabilities, the change in brightness and power usage as a result of charging while the light is otherwise normally operating.

(iv) The Administrator will communicate with and approve the above-specified laboratories in paragraph (d)(i) based on relevant criteria determined after a public hearing.

(v) The Administrator will agree with the laboratories on a protocol for testing based on the provisions of this law.

(vi) After reaching an agreement on appropriate protocols, the Administrator shall publicly announce and publicize the names of the approved laboratories.

§ 9. Research and Development

(a) Authority

The Minister of Energy is authorized to conduct, promote, coordinate, and accelerate research, development, studies, surveys, experiments, demonstration projects, and training related to the development of lighting products and their components. The Minister of Energy shall assure that the expenditure of any funds appropriated under this Act shall be coordinated with and reflect the needs and priorities identified by the Agency.

(b) Foreign Aid and Assistance

The Minister of Energy shall actively solicit foreign aid, assistance, and collaboration in carrying out research and development from other countries, intergovernmental organizations, scientific bodies, philanthropic organizations, non-governmental organizations, and any other entities supporting access to lighting.

(c) Grants

In implementing this Section, the Minister of Energy may enter into contracts with and make grants to qualified institutions, agencies, organizations, and persons. Priority shall be given first to [*country*]'s research universities, then to other public or private institutions suitably equipped to carry out scientific, economic, or social research related to indoor illumination in [*country*].

(d) Reporting

(i) The Minister of Energy shall submit an annual report to the Administrator of the LA and the [*National Assembly*] about the research projects funded pursuant to this Section, outlining the funding provided for each project, its use of such funds, and the nature and general progress of the project.

(ii) The Administrator of the LA and Minister of Energy shall promote

accurate reporting of research and scientific data by organizations engaged in lighting development, and shall approve regulations to ensure accurate administrative record-keeping by government officials.

(e) Availability of Information to the Public

Subject to the patent provisions of the [*name of country's patent act or other intellectual property law*], all discoveries, inventions, innovations, information, and data resulting from any research studies, surveys, experiments, assessments, or demonstration projects conducted or financed under this Section shall belong to the public domain and be available to the public for their use without charge.

§ 10. Public Health

The Ministry of Health shall encourage early treatment of kerosene-related burns. To this end:

(a) Healthcare workers will report back to the Ministry of Health specific cases of kerosene-related burns by creating records of patients and monitoring their treatment; and

(b) The Minister of Health will enlist the help of NGOs in carrying out duties under this section.

§ 11. Education and Information

(a) The Administrator shall be responsible for educating the public on the benefits of modern indoor lighting technologies and the dangers of fuel-based lighting. The Administrator shall use existing information channels, and enlist the assistance of the private sector in doing so.

(b) Private programs whether voluntary or enlisted by the Administrator to disseminate information to the public regarding indoor illumination shall comply with all provisions of this Act.

(c) The Minister of Commerce shall oversee marketing materials to ensure that only verifiable findings are used.

§ 12. Enforcement

(a) Civil Remedies

Non-compliance order. On the basis of information available to him/her, if the Administrator finds violations of this Act, s/he may issue a non-compliance notice to the identified party. Non-compliance orders may be issued by the Administrator for violations of this Act in accordance with [*name of country's administrative procedure act*]. In addition, the Administrator must:

(i) Issue a notice of the alleged violation to the offending party within 30 days of discovery of a violation;

(ii) Allow the offending party 45 days to rebut the evidence against him/her, or submit to agency-inspected corrective measures; and

(iii) Institute immediate suspension of activities that have or are reasonably expected to impose a grave health risk to the population.

(b) Citizen Enforcement

(i) Any citizen or resident of [*name of country*] may seek judicial remedies under this Section for violations of any mandatory provision of this Act. These citizen suits may be lodged in any District Court against any government agency, department, or private party that either violates a standard established by this Act, or fails to carry out a mandatory duty required by this Act. Prior to bringing an action, a citizen shall:

(1) Give notice to the defendant agency, department, or private party about the alleged violation(s) of this Act; and

(2) Allow a period of 60 days after receipt of notice to enable the defendant to rectify the alleged violation(s) of this Act before filing a lawsuit.

(ii) If the Plaintiff is successful, the court may order the defendant to comply with the Act and award damages. A successful litigant is entitled to recover full costs and the court shall include and order such costs in its judgment.

(iii) In the event an action is dismissed, the court may, in its discretion, order the citizen plaintiff to pay the defendant such costs as it deems reasonable and necessary.

(c) Criminal Penalties

(i) *Violation of Non-Compliance Order.* Any person who fails to comply within 3 months of receipt of a non-compliance order issued pursuant to Subsection (a) shall, after due inquiry by a District Court, be punished by a fine of not less than an amount equivalent to 250 USD [*or other typical fine in national currency*] nor more than an amount equivalent to 2,500 USD [*or other typical fine in national currency*] per day per violation, or by imprisonment for not more than 1 year, or by both.

(ii) *Negligent Misrepresentation.* Any person who negligently misrepresents that lighting products meet the minimum national standards of Section 4 or regional standards established pursuant to Section 4(a)(viii) shall be punished by a fine of an amount equivalent to 250 USD [*or other typical fine in national currency*] per lighting product sold under negligent misrepresentation.

(iii) *Knowing Endangerment.* Any party who knowingly endangers another person or community of persons by manufacturing, marketing and/or distributing lighting products, and/or parts thereof that do not conform to the provisions of Section 4 (or regional standards established pursuant to Section 4(a) (viii)) shall be subject to a fine of not more than 100,000 USD.

(iv) *Other Sanctions.* Nothing in this subsection shall limit or reduce any other punishment, including imprisonment, under any other applicable criminal laws.

COMMENTARY

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I. SECTION 1. FINDINGS

The Model Law provides a series of findings and lays the foundation for establishing the programs to support the distribution and use of off-grid lighting products as described in Sections 4 to 12. The Findings are based on domestically and internationally available evidence, and attempt to incorporate the latest available data. Lighting is an extremely crucial area that needs to be addressed among developing countries. Worldwide, 1.3 billion people still do not have sufficient access to light.[1] The Model Law takes a significant step toward implementing Goal Number 7 and its affiliated targets, of the Sustainable Development Goals ("SDGs") of 2015.[2] The objective of Goal Number 7 of the SDGs is to "[E]nsure access to affordable, reliable, sustainable and modern energy for all."[3] The targets associated with Goal Number 7 call for this goal to be achieved by 2030, and for the enhancement of international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency, and promote investment in energy infrastructure and clean energy technology.[4] The targets also call for expanding infrastructure and upgrading technology for supplying modern and sustainable energy services, in particular to least developed countries, small island developing States, and land-locked developing countries.[5] The Model Law also advances the older United Nations' Millennium Development Goals ("MDGs") pertaining to sustainable

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1. Jörg Peters & Maximiliane Sievert, *On-grid and Off-grid Rural Electrification–Impacts and Cost Considerations Revisited, in* AGENCE FRANCAISE DE DEVELOPPEMENT–PROPARCO/EUDN-CONF. PROCEEDINGS ENERGY FOR DEV. 2 (Dec. 2, 2014), http://www.afd.fr/webdav/site/afd/shared/PRESSE/Evenements/RENCONTRES%20DU%20DEVELOPPEMENT/Peters%26Sievert_Impacts%20of%20electrification%20(comment%20on%20Torero's%20paper).pdf.

2. U.N. Dep't of Econ. and Soc. Affairs, *Goal 7*, UNITED NATIONS, https://sustainabledevelopment.un.org/sdg7 (last visited Mar. 28, 2016) [hereinafter Goal 7]; U.N. Dep't of Econ. and Soc. Affairs, *Sustainable Development Goals*, UNITED NATIONS, https://sustainabledevelopment.un.org/sdgs (last visited Mar. 28, 2016).

3. Goal 7, *supra* note 2.

4. *Id.*

5. *Id.*

social development and environmental protection,[6] which have now been incorporated into the MDGs.

The Model Law addresses the prevalence of kerosene lighting in the developing world, particularly unpressurized wick kerosene lamps. Kerosene, while cheaply priced and used in a variety of applications, such as lighting, cooking and heating, poses burns hazards to children from open flames. As will be detailed in the Commentary for Section 10, women and children are the most susceptible to kerosene burns.[7] In addition to the negative effects on health, lack of lighting or poor lighting also inhibits children's education by not being able to read or study after the sun sets.[8]

Air pollution from kerosene lamps is also a significant problem, as kerosene emits over 240 million tons of carbon dioxide annually.[9] In addition, as much as 7-9% of the kerosene used in kerosene lamps is converted to carbonaceous particulate matters, which is almost entirely black carbon. [10] Some estimates have

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6. *See* 2000 U.N.Y.B. 50, U.N. Sales No. E.02.I.1. Article III discusses poverty eradication and development, stresses the need to ensure that all countries have good governance standards, promotes cooperation between developed and least developed countries, and resolves to improve education and healthcare across all countries. *Id.* Article IV discusses the need to protect the natural environment and use sustainable energy sources. *Id.* To that end, if there are lighting projects making use of renewable energy sources, they are preferable over projects that do not.

7. *See* S. Chamania et al., *Pilot Project in Rural Western Madhya Pradesh, India, to Assess the Feasibility of Using LED and Solar-Powered Lanterns to Remove Kerosene Lamps and Related Hazards From Homes*, 41 BURNS J. 595, 595-96 (2014); *see also* Ashkan Golshan et. al., *A Systematic Review of the Epidemiology of Unintentional Burn Injuries in South Asia*, 35 J. PUB. HEALTH 384, 391 (2013) (highlighting how female mortality outnumbered male mortality in the literature on burns in South Asia); Katrine Løfberg & Christopher C. Stewart, *Pediatric Burn Injuries in the Developing World*, GLOB. HEALTH EDUC. CONSORTIUM 1, 9 (2012), (noting that children age five and under and the elderly suffer the highest mortality from burns globally).

8. For negative effects on health, *see* P. Gupta et al., *Kerosene Oil Poisoning—A Childhood Menace*, INDIAN PEDIATRICS 979, 979-83 (1992), http://www.indianpediatrics.net/aug1992/979.pdf; Kristine Pearson, *Kerosene: A Burning Issue in Women's Rights, Human Rights*, LIFELINE ENERGY BLOG (Oct. 2, 2011), http://lifelineenergy.org/kerosene-a-burning-issue-in-human-rights/; William D. McNally, *Kerosene Poisoning in Children: A Study of 204 Cases*, 48 THE J. OF PEDIATRICS 296 (1956). For lighting's effect on education, *see* Simon Batchelor et al., *The Gender-Energy-Poverty Nexus: Finding the Energy to Address Gender Concerns in Development*, (2002), http://www.riaed.net/IMG/pdf/DFID_Doc_Energy_Gender.pdf. Children may not have time to complete their studies during daylight hours, and are therefore unable to take full advantage of their education since it is impossible to read at night without lighting sources. Batchelor et al., *supra* note 8, at 7. It is postulated that there are approximately 1.3 billion people living in poverty and 70% of this population are women; many of these women live in female-headed houses in rural areas. *Id.* at 5, 10. The energy inequality hinders their decision making within the household and community while preventing their abilities perform rudimentary tasks with any degree of efficiency.). *Id.*

9. *Black Carbon Emissions from Kerosene Lamps*, CLEAN AIR TASK FORCE 1 (2013), http://www.catf.us/resources/publications/files/201311-Black%20carbon%20and%20kerosene%20lamps_BRIEF.pdf.

10. Nicholas L. Lam, et al., *Characterizing Kerosene Demand for Light in India and Evaluating the Impact of Measures Affecting Access and Dependence, in* INNOVATING ENERGY ACCESS FOR REMOTE AREAS: DISCOVERING UNTAPPED RESOURCES: PROCEEDINGS OF THE INTERNATIONAL CONFERENCE 116, 116-19 (Martina Schäfer et al. eds., 2014).

found that black carbon is the second contributor to climate change after carbon dioxide.[11] Kerosene lamps consume 77 billion liters of oil per year, or 1.3 million barrels of oil per day.[12]

Over the long term, kerosene becomes expensive, potentially costing many times more than some electric light bulbs. A 2003 study conducted in Berkeley found that LEDs of at that time cost five cents per thousand lux hours, while non-pressurized kerosene lamps could cost as much as $3.80 per thousand lux hours.[13] While pressurized hurricane lamps do not pose burn hazards, they still pose the same problems as unpressurized lamps in terms of insufficient light and indoor air pollution.

Some of the developing countries, which can be enormous geographically and have vast populations with extensive cultural and socio-economic diversity, are challenged by the absence or inadequacy of access to lighting. For example, India is a federal republic composed of twenty-nine states, each with its own state legislature and a substantial degree of control over its own affairs.[14] Given the sheer size of India's population and the vast differences between each individual state (as well as the sheer size and complexity of India's national government), it would be impractical to adopt these Model Laws for the entire country. However, individual states within India, like Tamil Nadu or Madhya Pradesh, could adopt these Model Laws and tailor them for their own unique geographical and socio-economic situations. Thus, in some cases, it might be more appropriate for these Model Laws to be adopted not by the central government, but by the country's smaller state or provincial governments.

While the Model Law aims to encourage the distribution of off-grid lighting products, it does not specify the specific types of lighting products that should be used or what methods should be used to ensure effective product distribution. Such decisions will be dependent on the specific requirements of each country, such as how available off-grid lighting is or what types of products are available in the country.

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11. *See id.*; Nicholas L. Lam, et al., *Household Light Makes Global Heat: High Black Carbon Emissions From Kerosene Wick Lamps*, 46 ENVIRON. SCI. TECHNOL., 13531, 13534-36 (Nov. 19, 2012); *Global Warming: The New Black*, THE ECONOMIST (Jan. 19, 2013), http://www.economist.com/news/science-and-technology/21569686-soot-even-worse-climate-was-previously-thought-new-black (however, the impact of kerosene burning on black carbon emissions or the impact of black carbon emissions on climate change are not universally accepted). *Cf.* Richard A. Kerr, *Soot is Warming the World Even More Than Thought*, 339 SCIENCE at 382 (Jan. 25, 2012) (discounting the impact of biomass burning on global warming).

12. TECHNOLOGIES AND INNOVATIONS FOR DEVELOPMENT: SCIENTIFIC COOPERATION FOR A SUSTAINABLE FUTURE (Jean-Claude Bolay et al. eds., 2012).

13. Evan Mills, *Technical and Economic Performance Analysis of Kerosene Lamps and Alternative Approaches to Illumination in Developing Countries*, LAWRENCE BERKELEY NAT'L LAB. 3 (June 28, 2003), http://evanmills.lbl.gov/pubs/pdf/offgrid-lighting.pdf.

14. CENTRAL INTELLIGENCE AGENCY, THE WORLD FACTBOOK: INDIA (Mar. 16, 2016), https://www.cia.gov/library/publications/the-world-factbook/geos/in.html.

II. SECTION 2. POLICY

The policy articulated here is expressed in generic terms and is meant to be adopted by any country, and may be adapted to suit the particular circumstances of that country. However, the policies articulated are based on a number of common factors shared by countries seeking to offer access to lighting.

It is open to an adopting country to change wording of the Model Laws to comport with its own policies. The need to do so might become evident where the meaning of some words may be "lost in translation" from English into a foreign language.

The reference to NGOs acknowledges the fact that several profit and non-profit initiatives are working to address lighting distribution around the developing world. These initiatives run the gamut from small non-profit organizations distributing plastic bottles with bleach solution, which serve as lights when the bleach is added to water in the bottle,[15] to large multinational organizations such as the United Nations and the World Bank's Lighting Global initiative.[16] Even some musical performance artists are contributing to direct lighting schemes by establishing their own distribution and infrastructure for lighting.[17] In addition to these initiatives, private corporations such as Nokero are manufacturing their own lighting equipment and selling them directly to distributors working in developing countries.[18]

Providing lighting to developing countries can be a costly endeavor, even if the long-term benefits are shown to outweigh the initial costs. Extending and maintaining the main electrical grid out to remote rural areas is an expensive national undertaking. Even in India, one of the largest growing economies in the world, over 400 million people live in communities are lacking reliable electricity that can supply electricity for more than three hours per day.[19] Solar lighting would at first seem like a cheaper solution, as much of India is located in a climate zone that receives, on average, at least eight hours of sunlight per day.[20]

Thus, off-grid solar LED lights have been shown to be a relatively effective medium-term solution for areas that cannot be connected to the electrical grid. Again, to use the case studies in India as an example, a single solar LED light like the ones used in these studies can be purchased for, on average, about 549 Indian Rupees (nine US dollars at the time of the study), and has a warranty of six

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15. *See Liter of Light –About Us*, MYSHELTER FOUNDATION (2015), http://literoflight.org/about-us/ (these plastic lights have also been reported on by international news agencies); *see, e.g.*, Kotoe Oshima, *Plastic Bottles Light up Lives*, CNN (Aug. 30, 2011), http://www.cnn.com/2011/WORLD/asiapcf/08/30/eco.philippines.bottle/.

16. *See* LIGHTING GLOBAL (2015), http://www.lightingglobal.org/.

17. *See Overview – Akon Lighting Africa*, AKON LIGHTING AFRICA (2015), http://akonlightingafrica.com/our-activities/overview/ (from February 2014, the rapper Akon has been working with Samba Bathily and Thione Niang on the Akon Lighting Africa project, which provides solar lights and small scale village and town lighting infrastructure projects).

18. *See generally* NOKERO SOLAR, www.nokero.com (last visited Mar. 30, 2016).

19. S. Chamania et al., *supra* note 7, at 596.

20. *Id.*

months.[21] Assuming that a warranty of six months represents the *absolute minimum lifetime* of the product, this would mean that the maximum the household using this light could spend is about 1,098 Rupees (eighteen US dollars) in one year, all other factors being equal (although, in the final study, most of the lights actually exceeded the initial six month period, lasting the full year, and thus bringing the actual cost down to only 549 Rupees for most of the participating households).[22] The same study found that the average rural Indian household in Madhya Pradesh spends 1,800 Rupees per year on kerosene for one lamp (and that excludes other factors such as the cost of the lamp itself, or the external costs to health resulting from burns and inhalation of smoke).[23] Thus, even at its "most expensive" (*i.e.* assuming that each light needs to be replaced every six months), the use of off-grid solar lighting products was still proven to be more economical than kerosene lighting, saving each participating household at least 702 Rupees. In addition, each household would avoid the associated health risks of using kerosene lighting.

The solar lights in this study were all produced, tested, and certified within India, thereby cutting down on the costs associated with procurement and distribution.[24] These Model Laws are drafted to allow and encourage the adopting countries to establish a similar lighting market. As discussed above, having a lighting market may address corruption and would also allow for easier distribution and replacement or repair or the lighting products.

III. SECTION 3. DEFINITIONS

Many of these definitions are self-explanatory and simply explain terms and concepts in the model law. However, the fact that an agency or concept is defined does not mean that it should become a part of the laws or institutions of the adopting country. For example, it is possible that the adopting country does not propose to set up a Lighting Agency, and instead tasks an equivalent agency with the same responsibilities. In this case, the definition of "Agency" may be altered to reflect this change.

IV. SECTION 4: ESTABLISHMENT OF AGENCY

As just mentioned and made clear in the Introduction,[25] the adopting country may not wish to establish a new agency to address the issue of insufficient lighting.[26] Similarly, the adopting country may also not wish to create a new cadre of provincial assessment officials.[27] The exact administrative and logistical choices clearly fall within the individual choices and administrative structure of

21. *Id.*
22. *Id.* at 599.
23. *Id.*
24. *Id.*
25. Lakshman Guruswamy, *Drafting Model Laws on Indoor Pollution on Developing and Developed Nations Workshop*, 42 COLO. NAT. RES., ENERGY & ENVT'L. L. REV. 319, 326 (2012).
26. *Id.* at 350.
27. *Id.*

each adopting country's government. However, the task of implementing, overseeing, and enforcing these laws must be institutionalized within the administration and law of each adopting country.

The first major objective for the agency, addressed in Section 4(a), is to perform needs assessments and develop specifications for what products and programs will be implemented based on the findings of these assessments. Needs assessments are expensive and time-consuming, but they are also necessary to avoid a "cookie-cutter" or "one-size-fits-all" approach to the promotion of lighting.[28] While it is generally accepted that everyone needs lighting, the geographical, economic, social, and culture situation of each country and community is unique. Thus, local needs assessments help to discover the specific local needs and conditions, which then allow for the creation of an area-specific lighting program that: (1) addresses particular community needs; (2) is "bottom-up" rather than "top-down;" (3) is sustainable in the long term; and (4) ensures that the country's limited resources are expended in the most productive and impactful manner.[29]

In conducting a needs assessment, a country does not necessarily have to "reinvent the wheel." A country could model its needs assessment after those that have been conducted in other locations. For example, some need assessments consist of a brief five-to-ten minute conversations with each household that provide sufficient information to the administrator.[30] Furthermore, most functioning governments should already have a civil service in place that is used to regularly perform surveys and censuses of the population.[31] However, as will be discussed further below, this may not always be the case in some developing countries.

Sections 4(c) and (d) concern the implementation and review of pilot programs, which are mini or scaled-down versions of a full-scale program.[32] Pilot programs fulfill a range of important functions and can provide valuable insights for assessing the feasibility of a full-scale program. Pilot programs: (1) help identify logistical problems, which might occur using proposed methods; (2) estimate variability in outcomes; (3) collect preliminary data; (4) determine what resources (finances, staff, et cetera) are needed for the full program; (5) assess the proposed programmatic techniques to uncover hidden potential; and (6) serve as an important "quality control" test run for the products that the administrator eventually intends to use.[33] The results of pilot programs will yield are highly contingent upon factors such as the intended duration and scope of the pilot

28. *Id.*

29. *Id.*; FERNANDO I. SORIANO, CONDUCTING NEEDS ASSESSMENTS: A MULTIDISCIPLINARY APPROACH 4 (2d ed. 2013).

30. Johannes Urpelainen & Semee Yoon, *Solar Home Systems for Rural India: Survey Evidence on Awareness and Willingness to Pay from Uttar Pradesh*, 24 ENERGY FOR SUSTAINABLE DEV. 70, 72 (2015).

31. SORIANO, *supra* note 29, at 79.

32. *See* Guruswamy, *supra* note 25.

33. *Id.* at 351.

program. For example, with regards to quality control, if the program lasts only one year, then the administrator will know only if the products involved in the program will last one year or not. Thus, the administrator might modify the pilot program to be two years in duration, in order to see if the lighting products last at least two years.

The optimal duration of a pilot program must strike a balance. It should be long enough to provide sufficient information, but not being too long so as to delay implementation of the full-scale program. Generally, many pilot programs last for 365 days, with at least one mid-term evaluation at the six-month mark.[34] One pilot project in Nigeria distributing off-grid lighting to 36 rural hospitals even used a program lasting as little as three to four weeks, and claimed that the introduction of these lighting products had an almost immediate effect of increasing the working hours of hospital employees by 30%.[35] However, one month may be far too short for a pilot program intended to measure the impact that introducing electric lighting can have on an entire community.

The other two challenges in establishing a pilot program are determining the appropriate sample size and selecting a sample that most accurately reflects the average conditions of the adopting country's small rural communities. Some pilot programs use 1,000 households, as 1,000 was found to be a sufficiently large enough number to represent the larger population, while also being within the manageable limits of the agency's resources.[36] These Model Laws propose conducting two pilot programs consisting of 500 households to provide sufficient data.

The final part of Section 4 mandates that the Lighting Agency shall review and analyze the data from the pilot projects. This report should be made available to both the legislature and citizens of the adopting country. However, during this stage special care must be taken by the adopting country's government to ensure that the information is accurately analyzed. One of the biggest challenges in conducting research in the developing world is the reliability of the information collected.[37] Various political interests may act to skew data in ways beneficial to their own interests during the process of gathering information. Many of the governments of Sub-Saharan Africa are notorious in this respect.[38] Thus, the needs assessment and pilot programs should be overseen by an NGO, a citizen advocacy group, or by a different governmental agency.

V. SECTION 5: ADMINISTRATIVE DISCRETION

This Section grants discretion to the Administrator, after due process and

34. S. Chamania et al., *supra* note 7, at 596.

35. LOUIS GYOH, FEEDBACK ON THE PERFORMANCE OF OFF-GRID LIGHTING PRODUCTS DEPLOYED IN 36 HEALTH CENTERS IN NIGERIA 7-13 (2014).

36. S. Chamania et al., *supra* note 7, at 599 (stating that project was originally going to use larger sample size, but scaled back down to roughly 1,000 due to budget and equipment constraints).

37. MORTEN JERVEN, POOR NUMBERS: HOW WE ARE MISLED BY AFRICAN DEVELOPMENT STATISTICS AND WHAT TO DO ABOUT IT 83 (2013).

38. *Id.* at 85.

public inquiry, to adopt and adapt standards and regulations to comport with the specific conditions of the country. While the Administrator shall have broad discretion to adopt standards, as determined by the Lighting Agency's fact-finding and research, the adoption of such standards should be performed within three years.

VI. SECTION 6: ADMINISTRATION AND IMPLEMENTATION

This Section refers to implementation by the Administrator of the provisions of the Model Law. The first part relates to Pilot Projects. The second, to the Strategic Plan envisioned in Section 6(b), that institutionalizes the need for the new or existing Lighting Agency to define its strategy and to make decisions on resource allocation to pursue this strategy. In doing so, the strategic planning process should endeavor to encourage the creation of markets for lighting and ensure that the plans are instruments for generating lighting markets. One aspect of market advancement lies in creating standards and certifications. Another relates to public participation and consultation. It is important to undertake bottom-up planning that incorporates the views of the people. Finally, no lighting scheme can succeed unless durability standards are monitored on an ongoing basis.

Corruption remains a major problem in many developing countries where large numbers of complex, restrictive regulations are coupled with inadequate controls. The United Nations Convention on Corruption offers ample contemporary evidence of the problems caused by corruption.[39] It recognizes the "seriousness of problems and threats posed by corruption to the stability and security of societies, undermining the institutions and values of democracy, ethical values and justice and jeopardizing sustainable development and the rule of law."[40] In his Foreword to the Convention, Kofi Anan, the UN Secretary General at the time, refers to corruption as an "insidious plague" that has a wide range of corrosive effects on societies.[41] He continues by asserting that:

> It undermines democracy and the rule of law, leads to violations of human rights, distorts markets, erodes the quality of life and allows organized crime, terrorism and other threats to human security to flourish. This evil phenomenon is found in all countries—big and small, rich and poor—but it is in the developing world that its effects are most destructive. Corruption hurts the poor disproportionately by diverting funds intended for development, undermining a Government's ability to provide basic services, feeding inequality and injustice and discouraging foreign aid and investment. Corruption is a key element in economic underperformance and a major obstacle to poverty alleviation

39. G.A. Res. 58/4, Convention Against Corruption (Oct. 31, 2003) [hereinafter Convention Against Corruption]. As of April 1, 2015, 177 parties have signed and ratified or otherwise acceded to the Convention. *United Nations Convention Against Corruption: Signature and Ratification Status as of 1 December 2015*, UNITED NATIONS OFFICE ON DRUGS AND CRIME, https://www.unodc.org/unodc/en/treaties/CAC/signatories.html (last visited Feb. 8, 2016).

40. Convention Against Corruption, *supra* note 39, at 2.

41. *Id.* at iii.

and development.[42]

In both advanced developing countries ("ADCs") and least developed countries ("LDCs") corruption is a pervasive problem. Not only are official decisions—for instance, the award of government contracts or the amount of tax due—bought and sold, but very often citizens must pay for access to a public service or the exercise of a right, such as obtaining civil documents. The process of allocating political and administrative posts—particularly those with powers of decision over the export of natural resources or import licenses—is influenced by the gains that can be made from them. As these exchanges of privileges are reciprocated by political support or loyalty, it cements the political foundations.[43] Corruption in turn can have a dramatic effect on a country's economy. It has been estimated, for example, that moving from a relatively "clean" government, like that of Singapore, to one as corrupt as Mexico's, would have the same effect on foreign direct investment as an increase in the marginal corporate tax rate of 50%.[44]

Thomas Pogge offers a radical and trenchant criticism of corruption as something ingrained in the international structure of power. According to him "many developing countries are run by corrupt and incompetent leaders, unwilling or unable to make serious poverty-eradication efforts."[45] Pogge continues that bad leadership, civil wars, and widespread corruption in the developing countries are not wholly homegrown, but strongly encouraged by the existing international rules based on the sovereignty of states.[46]

> As ordinary citizens of the rich countries, we are deeply implicated in these harms. We authorize our firms to acquire natural resources from tyrants, and we protect their property rights in resources so acquired. We purchase what our firms produce out of such resources and thereby encourage them to act as authorized. In these ways, we recognize the authority of tyrants to sell natural resources of the countries they rule. We also authorize and encourage other firms of ours to sell to the tyrants what they need to stay in power – from aircraft and arms to surveillance and torture equipment.[47]

Whatever its particular form, public hearings, and the open nature of rulemaking, required by this model law is aimed at combatting corruption.

Especially in areas where limited competition and cozy relationships between favored corporations and government officials may be present, open markets, and a market based system, may best promote access to lighting. Moreover, stimulating

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42. *Id.*

43. Irene Hors, *Fighting corruption in the developing countries*, OECD OBSERVER (April 2000), http://www.oecdobserver.org/news/archivestory.php/aid/291/Fighting_corruption_in_the_developing_countries.html.

44. S-J. Wei, *How Taxing Is Corruption on International Investors?*, (Williams David Institute, Working Papers Series 63, 2007).

45. T. W. POGGE, WORLD POVERTY AND HUMAN RIGHTS: COSMOPOLITAN RESPONSIBILITIES AND REFORMS (2nd ed. 2008).

46. *Id.*

47. *Id.* at 148.

lighting markets and fostering the growth of the private sector may decentralize large scale decision making, and allow private entrepreneurs to invest in and disseminate energy efficient lighting products and systems. Additionally, incentivizing local market development may also provide an opportunity for small communities to understand and take charge of their lighting products, and the joint enforcement environment created by all community members may help alleviate corruption, thereby allowing the lighting agency to focus on more pressing areas of the Model Law.

Market incentives, however, may not always lead to a decrease in corruption. For example, if the market is left to its own devices, one large retailer may force many small competitors out of the market, and this may lead to interest group corruption.[48] If appropriate governmental and independent institutions are established to ensure that lighting products are thoroughly distributed at fair prices, this may alleviate corruption concerns in the market.[49] Ultimately, the success of these incentives and institutions' efforts will depend on how well government, NGOs and the private sector can work together to implement and enforce national laws regarding corruption.[50]

Section 6(c)(i), in particular, envisions a number of ways that local dissemination of lighting may occur through the market. Most obviously, non-profit and for-profit organizations may sell lighting products to consumers directly or through local vendors. Consumers may also pay for their lights in other ways if they do not have the appropriate compensation up front. In the "fee-for-service" system, where the light can be either purchased or rented for the household at a nominal fee, a light that can be recharged after the end of its life.[51] The proceeds go towards maintaining the system and giving the lighting distributors a small income,[52] and the lights themselves have been used in villages, towns, and farms in various areas around India.[53] Having multiple local vendors allows consumers to obtain lights at affordable prices, even where a supplier's business integrity may be compromised. This is compared to having a central authority supply lights to various towns and cities in a province, where a public official's corruption may severely affect how consumers are able to obtain adequate lighting equipment. A similar system is a rent-to-own system, where households purchase lights and make rental payments with the eventual goal of paying off the lights.[54] However, where rental payments are missed, agents have to seize the lights, and when

48. Countries with very strong private sectors may encounter this type of corruption, whereby public officials are bribed to open and maintain access to new and emerging markets. *See* FIGHTING CORRUPTION IN DEVELOPING COUNTRIES: STRATEGIES AND ANALYSIS 116 (Bertram I. Spector, ed., 2005).

49. *Id.* at 48.

50. *Id.*

51. *Id.*

52. *Id.*

53. *Id.* at 44.

54. Doug Vilsack, *Lessons Learned from Six Years of Selling Solar in Africa*, *in* INTERNATIONAL ENERGY AND POVERTY: THE EMERGING CONTOURS 253 (Lakshman Guruswamy ed. 2015).

cultural barriers prevent them from seizing lights, they must often make a collection visit.[55] Households may also pay for their lights through a "pay-as-you-go" system, whereby villagers must make payments at regular intervals to keep their lights operating, and may visit an agent or use a cloud-based app to make a payment when their light turns off.[56]

Research projects such as those described above, may help to understand the nature of incentives required to reach hard to reach areas, and illuminate how research projects help in the evaluation of lighting distribution projects. Lighting a Billion Lives found that girls studied for longer periods of time when there was adequate lighting, and villagers were able to provide more services to their villages, such as tutoring and local eco-tourism.[57] Houri and Khoury found that residents liked the CFL bulbs they implemented but were disappointed with the amount of electricity they received, due to the blackouts.[58]

As detailed in the commentary for Section 4 and in Section 4(d), accurate data is the backbone of a well-run lighting product distribution program. Therefore, communicating accurate data to the public and other government agencies should be a top priority for the Lighting Agency. Data can greatly influence how the government distributes resources, because inaccurate information may lead to an over or under-allocation of resources, greatly influencing how unequal access to energy is resolved.

VII. SECTION 7. AUTHORIZATION AND APPROPRIATIONS

This Section deals with authorization and appropriations for three administrative/governmental units: the new Lighting Agency, the Department of Energy, and the Department of Health. The adopting country can change these provisions to suit its own administrative structures.

It is critical for the legislature to authorize and appropriate funds for the purposes referred to in Section 8 to enabling the policy and purposes of the Act to be achieved. Section 8 discusses funds, including loans and other fiscal devices, to encourage lighting markets and underlines the importance of promoting private investment and markets for lighting.

The incorporation of NGOs into the administration and implementation of the Act is based on compelling evidence that NGOs and other non-governmental entities are in many cases more effective and efficient distributors of goods and services than government agencies.[59] NGOs may also be able to raise funding independently of the government, whether through private donations or foreign

55. *Id.*

56. *Id.* at 254-55.

57. Debajit Palit & Jarnail Singh, *Lighting a Billion Lives—Empowering the Rural Poor*, 59 BOILING POINT 42, 45 (2011).

58. Ahmad Houri & Pierre Al Khoury, *Financial and Energy Impacts of Compact Fluorescent Light Bulbs in a Rural Setting*, 42 ENERGY AND BUILDINGS 658, 665 (2010).

59. Miklos Marschall, Exec. Dir. of Transparency Int'l, Legitimacy and Effectiveness: Civil Society Organizations' Role in Good Governance (Oct. 29, 2002) (transcript available at the World Bank Library).

aid, and thus, spare the adopting government some of the financial burdens discussed above. It is clear that a number of NGOs are committed to addressing the problems of access to lighting, and are a resource that should be utilized. However, it is important to note that NGOs are not intended to subsume the role of government. These Model Laws focus on collaboration between the adopting country's government and the NGOs.

VIII. SECTION 8. NATIONAL MINIMUM STANDARDS AND CERTIFICATIONS

National Minimum Standards and standardization are crucial in lighting product funding, manufacture, fabrication, marketing, and distribution. Establishing minimum standards helps to ensure that the lighting products are safe and reliable. The standards hold manufacturers accountable for producing suitable products. Certification allows the lighting agency to be certain that lighting products conform to its standards. Standardization brings important benefits to businesses, including a solid foundation upon which to develop new technologies and an opportunity to share and enhance existing practices. Standardization also promotes more business activities in the developing country and advances policy initiatives.

In accordance with the SDGs, any lighting solution, while benefitting citizens in developing countries, cannot cause more pollution or environmental harm than the method of lighting it is replacing. Many modern lighting projects and products are solar or wind powered, or as seen through the Liter of Light campaign,[60] require little–to–no electrical components and do not generate excessive carbon emissions. Many lighting schemes are focusing on using LED lights in developing countries, given that LED bulbs last up to 25 times longer than incandescent bulbs.[61] Solar lights are becoming an increasingly common fixture in 2015 Sub-Saharan Africa, as more vendors now sell a wide variety of solar lights to on and off-grid customers, a phenomenon that was much less common in 2009.[62]

Actual minimum brightness standards under Section 8 will be country specific, based on what the adopting country determines is achievable. Metrics for measuring brightness and luminosity are often based on lumens. A lumen measures one square foot of light that is produced by a candle one foot away from a wall.[63] Although lux and watts may also be acceptable measurement standards in some instances, this Model Law will use lumens.[64]

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60. LITER OF LIGHT, http://www.literoflightusa.org/ (last visited Mar. 29, 2016).

61. *Lighting Made Easy – Just Look for the Energy Star*, ENERGYSTAR.GOV, https://www.energystar.gov/ia/partners/manuf_res/ES_Lighting_ConsumerFactsheet.pdf?0b551475.

62. MEG HARPER ET AL., A GROWING AND EVOLVING MARKET FOR OFF-GRID LIGHTING, LIGHTING AFRICA 12-13 (2013).

63. K. SOMAN, INTERNATIONAL SYSTEM OF UNITS: A HANDBOOK ON SI UNITS FOR SCIENTISTS AND ENGINEERS 16 (2009); *see also LED Flashlights Fact Sheet*, STARLINE INC, https://us.starline.com/content/image/Forms/distributor_resources/FactSheets/Starline_FactSheet_LED.pdf.

64. Wattage is a measure of power, and lux, a measure of the spread of light in an area, is defined as one lumen per square meter. Power does not necessarily translate into luminance; while a lightbulb

There are five existing global electrification standards a lighting agency may adopt, if it does not already have an electrification standard applicable throughout its borders: U.S., French, Australia/New Zealand, SABS (South Africa), or IEC/ ISO systems, developed by the International Electrotechnical Commission ("IEC").[65] These electrification standards, *inter alia*, specify what the voltage output at a power outlet would be, what plug type should be used for plug in appliances and equipment, and certification criteria used to test electrical equipment. In 2012, the IEC,[66] a Switzerland-based organization, promulgated the latest version of Recommendations for Small Renewable Energy and Hybrid Systems for Rural Electrification (IEC 62257-9-5) after conducting a survey across 30 countries.[67] The Recommendations were developed to assist electricity producers in rural areas of developing countries develop off-grid lighting methods using solar and wind-generated power.[68] The Joint Working Group for the IEC standards was meant to integrate further comments on renewable energy types it had received from the surveyees.[69]

Lighting Global, an initiative of the World Bank that focuses on spreading sufficient electrical lighting around the world, particularly in Asia and Africa, also revised its Global Quality Standards for lighting products as of March 2015; these standards are based on IEC 62257-9-5.[70] Adoption of this series comes at a time when lighting manufacturers, such as Nokero, are increasingly selling solar-powered lights in developing countries.[71] As part of Lighting Global's support for the growing global off-grid lighting product market, the Global Quality Standards are intended to create a baseline level for lighting quality, durability and truth-in-advertising so that consumers are informed and have access to internationally-

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may use a certain wattage, if it is especially inefficient it will emit a low light output. Lumens are appropriate to use here because they measure the total light output from a source, and are useful as a base or foundation measure from which to work out a lux measurement, for example, if a light bulb is fitted in a home. Further, not all lights are likely to be used indoors and lighting equipment often draw more attention to a lumens measurement than a lux measurement. For example, the United States Dept. of Energy's EnergyStar program now measures bulb brightness in lumens. ENERGYSTAR.GOV, *supra* note 61.

65. Leon Drotsche, Presentation on the Int'l Electrotechnical Comm'n Tech. Specifications 62257 Series (Oct. 2, 2012).

66. The IEC develops and promulgates internationally accepted technical specifications for electro-magnetic equipment. Member countries participate in the IEC through National Committees ("NC"), which represent all public and private electro-technical advocacy organizations in the country. *National Committees*, INTERNATIONAL ELECTROTECHNICAL COMMISSION, http://www.iec.ch/about/profile/members.htm (last visited Feb. 9, 2016). IEC currently has eighty-three members. *Id.* IEC has collaborated with the International Organization for Standardization ("ISO") to develop over 200 technical specifications for developing country and affiliate members. *Adoption of IEC International Standards*, INTERNATIONAL ELECTROTECHNICAL COMMISSION, www.iec.ch/affiliates/adoptions (last visited Feb. 9, 2016).

67. Drotsche, *supra* note 65.

68. Morand Fachot, *Supporting Rural Electrification*, IEC E-TECH (June 2014), http://iecetech.org/issue/2014-06/Supporting-rural-electrification.

69. *Id.*

70. WORLD BANK GROUP, LIGHTING GLOBAL QUALITY STANDARDS, VERSION 5, 2 (2015).

71. HARPER ET. AL., *supra* note 62, at 3.

approved and certified lighting products.[72] These standards set forth six requirements for quality: (1) truthful advertising;[73] (2) lumen maintenance;[74] (3) durable batteries;[75] (4) one year warranty coverage on the product;[76] (5) quality and durability standards of the lighting equipment;[77] and (6) a ban on using hazardous substances in the lighting equipment, such as cadmium and mercury, are among them.[78] Because the electrification standards discussed above may vary as to exact requirements for lighting equipment, at a minimum, the Model Law incorporates the truthful advertising and prohibition on mercury and cadmium requirements of the Lighting Global Standards.

Section 8 also deals with certification. Product certification, undertaken by independent entities, ensures that a certain product is authentic, has passed performance and quality assurance tests or standards, and is designed for its intended purpose. Understanding the light output and power that a product is expected to use will assist the lighting agency in approving lighting products that accord with the country's energy generation and distribution circumstances. Certification also helps consumers select the correct products for their needs, and helps the manufacturer gauge whether certain products should be promoted over others. The Model Law proposes that product certification should take place at the country of origin because it is likely better equipped to develop and enforce certification standards. In addition, it is not practical for manufacturers to ship lighting products to a developing country that, upon receipt, finds that the products are inadequate and uncertified. Over time, however, the developing country may take over such certification responsibilities once its lighting industry is further developed, and delegating certification to countries of manufacture will help developing countries develop and adopt their own certification standards in the meantime.[79]

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72. LIGHTING GLOBAL QUALITY STANDARDS, *supra* note 70, at 1.

73. *Id.* at 2. Lighting Global specifies that all of the following must be reported and reported accurately: (1) manufacturer; (2) model name and model number; (3) light output; (4) lamp type; (5) run time; (6) charger rating; and (7) any other details included with the product.

74. *Id.* Lighting Global specifies that the light must maintain at least 85% of initial luminance for 2,000 hours *or* at least 95% of initial luminance for 1,000 hours.

75. *Id.* Lighting Global specifies that the average capacity loss of a random sample of six batteries must not exceed 25% during a durability test of the type outlined in IEC 62257-9-5 Annex BB.

76. *Id.* Specifying that the warranty must cover one year under "normal use, including the battery," although this implies, by exclusion, that *abnormal* uses of the lamp are not covered by the warranty.

77. *Id.* Specifying that all lighting products must pass the tests described in the section, including a test of Physical Ingress Protection, Water Protection, a "drop test" (wherein at least five out of six samples must still be functional after being dropped 1m onto concrete), a soldering and electronics inspection, and a switch, gooseneck, connector, and strain relief durability test (wherein at least five out of six samples must still be functional after 1,000 cycles).

78. *Id.*

79. This proposal is based on comments solicited at the Access to Energy for All Conference (2015). *See generally Sustaniable Energy For All*, UNITED NATIONS, http://www.se4all.org/ (last visited Mar. 29, 2016).

IX. SECTION 9. RESEARCH AND DEVELOPMENT

Section 9 places the prime responsibility for research and development on the Ministry of Energy and emphasizes the importance of soliciting and attracting foreign funds and assistance. As in every other administrative allocation of duties, the adopting country is free to make its own arrangements, provided that the substantive importance of research and development is in fact institutionalized.

The design and manufacture of affordable lighting for the energy poor has not attracted large amounts of scientific funding. Affordable sustainable energy technologies ("ASETs"), such as solar bulbs advanced by the model law, rely on cutting edge modern lighting technology relating to photovoltaic cells ("PVCs"), batteries, LED lights, charge controllers, and casing materials that were developed for and marketed within developed countries. What has been lacking is funding on how to use and adapt such modern technologies to create the ASETs required by the energy poor. The absence of applied engineering research required to adapt modern technologies to the modest and prosaic needs of the energy poor may partly arise from the weak returns on investment. The Model Law seeks to overcome this funding shortfall by calling for Scientific research and development ("R&D") that can focus on the importance of designing and manufacturing effective, cheap, and durable lighting for the energy poor. This should be a joint collaborative enterprise involving scientists and engineers from both developed and developing countries. The R&D envisioned by the Model Law has been anticipated, for example, by the research undertaken by a group of Social Entrepreneurship Seminar students from Stanford University, who together with the NGO Light Up the World, developed three prototypes of a solar-powered LED lamp for Indian, Mexican and Chinese consumers.[80] They also created associated business plans to market the prototypes.[81]

In addition to natural science and technological research, socioeconomic research should also be encouraged as these studies help researchers ascertain consumers' reactions to lighting products, so that more consumer friendly ASETs may be implemented. In the Houri and Khoury study, and the Lighting a Billion Lives study, researchers interviewed consumers for their thoughts on how the lighting products affected their daily activities and financial status.[82] A pilot project for CFL lighting efficiency was established in the rural village of Niha in central Lebanon, where 1,000 CFL bulbs were distributed to the town's residents, and the study evaluated the project's effectiveness of adequate lighting and how

80. *Affordable, Solar-Powered, LED Lights for Developing World*, ARIZ. STATE UNIV. DESIGN CONSORTIUM, https://universitydesign.asu.edu/db/affordable-solar-powered-led-lights-for-developing-world (last visited Feb. 9, 2016).

81. *Id.*

82. Houri & Al Khoury, *supra* note 58, at 658; Palit & Singh, *supra* note 57, at 43. The Houri and Khoury study, jointly led by a university professor and a government official from the Lebanese Center for Energy Conservation ("CEC"), was set against a 2006 CEC lighting efficiency program, as the agency wished to promulgate national minimum lighting standards and policies. Houri & Al Khoury, *supra* note 58, at 659-60.

the town's socio-economic conditions improved.[83] The study run by Lighting a Billion Lives, discussed above, evaluated the effectiveness of the "fee-for-service" system at improving socio-economic outcomes in the villages the system was used in.[84] The Lighting a Billion Lives campaign and the "fee-for-service" system were developed by The Energy and Resources Institute ("TERI"), a small research university in New Delhi, as a response to the shortcomings of individual solar lantern distribution. These shortcomings included a lack of after sales service in rural areas and a lack of awareness among consumers as to how to operate and maintain individual solar lanterns.[85]

X. SECTION 10. PUBLIC HEALTH

This Section acknowledges the importance of treating the health problems caused by kerosene use. To aid the adoption of lighting products by people who use kerosene lamps, it is important to educate them regarding the health risks associated with doing so. Therefore, Section 10 requires the government to support the treatment of kerosene-associated injuries and also requires public health officials to document injuries caused by kerosene.

A recent estimate from 2014 places the annual number of deaths resulting from all kinds of burns (not just kerosene) at about 300,000 globally (possibly even higher due to the number of deaths that go unreported).[86] Of this figure, over 90% of deaths are estimated to occur in "low-to middle-income countries," and the prevalence of kerosene for both cooking and lighting is a major contributing factor to this trend.[87] Furthermore, kerosene has significant negative consequences on children's health, particularly when the children are malnourished.[88]

A localized study done in Indore, India, found that women aged twenty-one to forty were disproportionately more likely to suffer burns than any other demographic, and that the main cause of this were kerosene-burning lamps.[89] A couple of reasons were given for this: women aged twenty-one to forty are more likely to be economically active in the home and during nighttime hours than men of the same age group, and traditional women's clothing in India is more vulnerable to catching fire than men's.[90] Another compounding factor was that most of the kerosene lamps used in this part of India were of bad quality or design, usually purchased second or third-hand, or else homemade and improvised using

83. Houri & Al Khoury, *supra* note 58, at 659-60.

84. Palit & Singh, *supra* note 57, at 42.

85. *Id.*

86. S. Chamania et al, *supra* note 7, at 595.

87. *Id.*

88. INT'L YEAR OF LIGHTS, *Study after Sunset* (2015), http://www.light2015.org/Home/LightForDevelopment/Study-after-Sunset.html; Gupta, *supra* note 8, at 979, 982; Nicholas L. Lam et al., *Kerosene: A Review of Household Uses and their Hazards in Low- and Middle-Income Countries*, 15 J. TOXICOLOGY & ENVTL. HEALTH, Pt. B, 396, 396, 414 (2012); Palit & Singh, *supra* note 57, at 42.

89. S. Chamania et al, *supra* note 7, at 595.

90. *Id.* at 595-96.

materials like tins.[91] Thus, these statistics show that the issue of energy poverty can indeed be a matter of gender equality and women's health too.

"The challenge of burns lies not in the successful treatment of a 100[%] burn, but in the [100%] prevention of all burn injuries."[92] The replacement of these dangerous open-flame lamps with safer LED lamps seems an obvious fix to the problem. However, the general public must first be educated and informed as to the dangers of kerosene lamps and the long-term benefits of electric lighting.

XI. SECTION 11. EDUCATION AND INFORMATION

The dangers of indoor air pollution and burn injuries resulting from kerosene are often unknown to those using kerosene, and lighting programs should be premised on providing awareness and information regarding kerosene's health risks.[93] If people are aware of the risks of using kerosene lamps, they may be willing to use off-grid lighting products instead. These Model Laws place the primary responsibility for educating the public on the Ministry of Health. These Model Laws grant the adopting country the flexibility to make its own administrative arrangements, provided it accepts the importance of and commits to promoting awareness and education.

The most efficient channel for the dissemination of information to the general public may be through existing channels, such as public schools, or other educational programs for rural communities that the adopting country may already have in existence. The adopting country should first examine its existing programs on educating the public on other health matters to determine whether these same channels can be used to educate about the dangers of kerosene use. For example, many developing countries like India and Kenya already have extensive programs in place to provide for education on the issue of HIV/AIDS.[94] These programs may be through the public school system, or through other channels, such as television advertisements or public bulletins, and either private, NGO, or through the government.[95]

However, these existing programs may not be effective. For example, a recent study in India showed that while the vast majority of a sample of school children in India are aware that HIV and AIDS exist, most of these students still harbor great misconceptions, misunderstandings, and resultant prejudices over the exact nature of AIDS.[96] For example, less than one third of the students sampled

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91. *Id.* at 596.

92. Michael D. Peck, *Epidemiology of Burns throughout the World. Part I: Distribution and Risk Factors*, 37 BURNS 1087, 1088 (2011) (quoting M. H. Keswani, *The Prevention of Burning Injury*, 12 BURNS 533, 534 (1986)).

93. Guruswamy, *supra* note 25, at 352.

94. TANIA BOLER ET AL., THE SOUND OF SILENCE: DIFFICULTIES IN COMMUNICATING HIV / AIDS IN SCHOOLS, EXPERIENCES FROM INDIA AND KENYA, ACTION AID 5 (2003), http://www.hivpolicy.org/Library/HPP000318.pdf.

95. K. Mitchell et al., *Community-based HIV / AIDS Education in Rural Uganda: Which Channel Is Most Effective?*, 16 HEALTH EDUC. RES. 411, 420-22 (2001).

96. Sharma et al, *Mounting Aids Awareness through Educational Intervention: How Effective*

knew the difference between HIV and AIDS, and less than one half knew that condoms could be used to help prevent the spread of HIV.[97] Therefore, it is important to conduct follow-up surveys following a public education campaign to ensure that the information is being accurately conveyed and understood.

Finally, any education program must consider traditional, spiritual, and cultural norms and differences.[98] There can be severe cultural and traditional impediments to effective public health education. For example, a number of Western-based AIDS education and prevention programs in Africa failed because they failed to take into account "traditional African perceptions of causes of illness [. . .], perceptions of sexuality, and cultural beliefs inhibiting the usage of condoms."[99]

XII. SECTION 12. ENFORCEMENT

Judicial and administrative enforcement is a necessary facet of the broader implementation of the Model Laws. While civil and criminal enforcement by public officials is a familiar feature of the laws of many developed countries, the citizen suit provisions may need some explanation in the context of developing countries. In essence, a citizen suit is a form of private enforcement. With private enforcement, the private litigant steps into the public domain by calling for enforcement against the official enforcers or government agencies (for failing to enforce or uphold the laws that have been adopted), or against private actors (for violating the standards of performance, warranty, and safety required by this law).

For a variety of reasons, government agencies are often unable or unwilling to enforce regulatory laws. Regulatory agencies seem unable to act speedily and comprehensively to achieve the social goals committed to them for a number of reasons, four of which merit special mention:[100]

> (1) Their efforts may be impeded by inadequate staff, funding, and information, a persistent problem even in developed nations;
>
> (2) Agencies may be slow off the mark and playing catch up with changing circumstances- often due to the backlog resulting from reason (1);
>
> (3) Agencies may be "captured" by the very groups and special interests that they are supposed to regulate.[101] Corruption, bribery, and cronyism at all levels of government

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Can It Be?, 3 NAT'L J. MED. RES. 151, 151 (Apr.-June 2013).

97. *Id.* at 151-52, 154.

98. Margaret Njirambo Matinga et al., *Behavioral Challenges and the Adoption of Appropriate Sustainable Energy Technologies*, *in* INTERNATIONAL ENERGY AND POVERTY: THE EMERGING CONTOURS 147 (Lakshman Guruswamy ed., 2015).

99. Alta C. Van Dyk, *Traditional African Beliefs and Customs: Implications for AIDS Education and Prevention in Africa*, 31 S. AFR. J. PSYCHOL. 60, 60 (2001).

100. Guruswamy, *supra* note 25, at 353.

101. Benjamin Van Rooij, *The People's Regulation: Citizens and Implementation of Law in China*, 25 COLUM. J. ASIAN L. 116, 137, 142, 177 (2012).

> can be huge problems in many of the developing nations these laws are meant for (and even in some developed nations as well);[102] and
>
> (4) They could be ensnared in the procedural red tape that is a common facet in many developing countries' bureaucracies.[103]

When armed with citizen suit authority and given the standing necessary to pursue a case, private citizens are empowered to take over the enforcement of such laws, free of some of the bureaucratic and political constraints that can hobble government enforcers. Other advantages of allowing citizen enforcement is that the citizens in question often have a closer and more intimate connection with their environment, as well as providing a greater variety of non-institutional perspectives and information.[104]

It is possible for some governments and their bureaucracies to consider citizen suits as potential instruments for attacking government institutions who are doing their best in difficult circumstances. They may also consider such suits a device for drawing national and even international attention to their country. From a more objective perspective, any government that enacts this statute is seeking to address the problems of indoor air pollution and should not try to cover up the poor conduct of their agencies. A citizen suit allows the citizens of a country to draw attention to agency inaction and enables an independent judiciary to call for the implementation of mandatory and non-discretionary provisions of the Act. Bringing questionable conduct into the sunshine of judicial scrutiny will help governments meet the challenges they seek to address through this Act.

In the United States, many federal environmental statutes allow citizen suits.[105] These laws include the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, and the Endangered Species Act.[106] For example, the Clean Air Act permits "any person" to "commence a civil action" against any other entity, including the government, "who is alleged to have violated [. . .] or to be in violation of an emission standard or limitation," as well against the Administrator "where there is alleged a failure of the Administrator to perform any act or duty under this chapter which is not discretionary with the Administrator."[107]

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102. Emmanuel C. Onyeozili, *Obstacles To Effective Policing In Nigeria*, 1 AFR. J. CRIMINOLOGY & JUST. STUD. 32, 40 (2005).

103. AKHIL GUPTA, RED TAPE: BUREAUCRACY, STRUCTURAL VIOLENCE, AND POVERTY IN INDIA 5 (2012). In this book, writer Akhil Gupta summarizes his argument by first comparing India's "bureaucratic red tape" with a natural disaster, such as an earthquake, in terms of the number of people who die each year because they are kept in poverty despite India having one of the world's largest and fastest growing economies. *Id.* at 4, 21-22.

104. Irene Villanueva Nemesio, *Strengthening Environmental Rule of Law: Enforcement, Combatting Corruption, and Encouraging Citizen Suits*, 27 GEO. INT'L ENVTL. L. REV. 321, 330 (2015).

105. Altman et al., *Citizen Enforcement In Environmental Law*, D. DAVID ALTMAN CO., LPA 1 (Feb. 14, 2016), http://www.environlaw.com/pdf/citizen_suits.pdf.

106. 33 U.S.C. § 1365 (2015); 42 U.S.C. § 7604 (2015); 42 U.S.C. § 6972 (2015); 16 U.S.C. § 1540 (2015).

107. 42 U.S.C. § 7604(a)(1)-(2) (2015).

Following the example set by the United States, a number of both developed and developing states have recognized that public authorities are not always the best suited towards enforcing compliance with environmental laws and have begun to allow private enforcement of environmental laws.[108] The first major international agreement was Article 18 of the 1993 Lugano Convention of the Counsel of Europe, which states that "[a]ny association or foundation which according to its statutes aims at the protection of the environment" would be granted standing to litigate against any violators of each European state's respective environmental regulations.[109]

In many developing countries that have introduced environmental regulations, lack of citizen enforcement provisions ensure that citizens do not have standing to pursue their claims in the courts.[110] In addition, the costs and efforts involved in the process of litigation can be formidable.[111] For example, in China, a recent study found that one of the primary reasons that enforcement of environmental regulations remains lax and insufficient is due to the lack of public participation.[112] The study also suggested a number of measures that could be made to increase the active participation of the citizens in both the legislative process and in the enforcement of the laws once they are formally adopted.[113]

Current environmental legislation in India illustrate some of the issues facing citizen suits in developing countries. [114] India first included an environmental citizen suit provision in its Environment (Protection) Act of 1986.[115] Later on it also passed a Right to Information Act that, in theory, guarantees all citizens the right to be fully informed of all environmental effects that industrial centers and manufacturing facilities have on the surrounding area, and thus enabled citizens to take legal action against polluters.[116] However, it is claimed that the task of monitoring and obtaining that information may be well beyond the ability of many private individuals in India, especially as some of the more specialized tests need to be performed outside of India.[117] It is worth recalling that citizen suits supplement the enforcement of the law by government agencies. These suits arise where the government agencies default in the execution of their duties. They are secondary and not meant to be a primary source of enforcement of the model law.

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108. IMPROVING COMPLIANCE WITH INTERNATIONAL ENVIRONMENTAL LAW 53 (Jacob Werksman et al. eds., 2014).

109. Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment, art. 18, June 21, 1993, Europ. T.S. No. 150, 32 I.L.M. 1228.

110. Nemesio, *supra* note 104, at 333.

111. *Id.*

112. Wang Canfa, *Chinese Environmental Law Enforcement: Current Deficiencies and Suggested Reforms*, 8 VT. J. ENVTL. L. 159, 159, 164 (2007).

113. *Id.* at 173, 177-78, 183.

114. Monish Gulati, *Citizen Participation in Environmental Enforcement in India – Looking Beyond The RTI Act*, SOC. SCI. RES. NETWORK (Aug. 1, 2010), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1663148.

115. The Environment (Protection) Act, India 1986, ch IV, pt 19, A.I.R. (Act No. 29 of 1986).

116. The Right To Information Act, India 2005, ch II, A.I.R. (Act No. 22 of 2005).

117. Gulati, see *supra* note 114.

If the adopting country finds that citizens do not have access to information, they are free to take remedial action that complements the provision of the model law.

In places where law enforcement is weak or even non-existent, it is possible that other entities may rise to fill in the void, such as non-state actors (including even insurgent groups) or traditional social hierarchies (and with them, traditional forms of adjudication and dispute resolution).[118] Thus, in these areas, the local people may choose to turn to these methods for enforcement rather than using official channels.[119] Often these methods of resolution are family, village, or community orientated, and they usually involve those individuals who are within the immediate community.[120] One possible solution for the adopting country would be to modify some of the provisions of the citizen enforcement section of this law, allowing a village elder or similar representative to litigate on behalf of someone else in their village and/or the community as a whole, through whichever local channels of adjudication are recognized by the Administrator in the adopting country.

The Model Laws are meant to be a guideline that the adopting country is meant to adapt to suit its own political, legal, economic, and social realities. But at the same time, the adopting country must ensure that every step be taken to make the litigation process as accessible as possible to the ordinary citizenry, regardless of the final form these laws may take.[121]

118. SANDRA F. JOIREMAN, WHERE THERE IS NO GOVERNMENT: ENFORCING PROPERTY RIGHTS IN COMMON LAW AFRICA 104 (2011).

119. *Id.*

120. *Id.* at 14.

121. Nemesio, *supra* note 104, at 342.

DEVELOPMENT AND DISSEMINATION OF CLEAN LIGHTING

MODEL LAW ON LIGHTING FOR DEVELOPED COUNTRIES

A BILL

To promote the development and deployment of lighting products to save lives, improve livelihoods, protect children, empower women, and combat climate change by creating a thriving global market for clean, affordable, and efficient indoor lighting solutions, and for other purposes.

Be it enacted by the [legislative organ] of the [developed country] assembled,

§ 1. Short Title

This Act may be cited as the "*Development and Dissemination of Clean Lighting* Act of [year]."

Effective Date. This Act becomes effective on [*date*].

§ 2. Findings

[*Legislative organ*] finds that:

(1) [*Name of country*] is a member of the community of nations that has accepted well-recognized principles of international law and policy establishing –

(A) the right of developing countries to sustainable development;

(B) the common but differentiated legal and moral rights of [*name of country*] and other developed nations to institutionally, financially, and technologically support sustainable development among developing countries by alleviating energy poverty and providing access to safe and sustainable lighting products; and

(C) that there is an urgent and pressing need to promote the use of renewable energy resources and technologies to supply energy needs, including lighting.

(2) [*Name of country*] seeks to support sustainable and renewable development and carry out its common but differentiated legal and moral

responsibility (CBDR) pertaining to energy poverty and access to safe and sustainable lighting products through this Act.

(3) It is estimated that of the 1.5 billion people worldwide without access to electricity, most rely on kerosene for illumination.

(4) The use of kerosene for lighting generates indoor air pollution, contributing to the deaths of 1.8 million people per year. Kerosene fires kill more than 1 million people per year, and children suffer health problems and die from the accidental ingestion of kerosene.

(5) Lighting fuels, such as kerosene, are nonrenewable sources of energy. The National Institute of Environmental Health Sciences estimates that 77 billion liters of liquid fuel, mostly kerosene, are used annually to light houses without electricity.

(6) The burning of kerosene for lighting in developed countries is estimated to cause the emission of 223 tons of carbon dioxide into the atmosphere per year, contributing to global climate change. Kerosene lamps are also major emitters of black carbon, which is both dangerous when inhaled and a major agent of climate change.

(7) Without adequate indoor lighting, women and children cannot engage in educational or economic activities after dark. Lack of adequate lighting also contributes to insecurity and danger at night.

(8) Explosions and fires from kerosene-related accidents lead to hundreds of thousands of burn deaths each year, and burn survivors often sustain permanent injuries ranging from debilitating scarring to loss of movement.

(9) The development and deployment of improved indoor lighting products is essential for achieving the United Nations Sustainable Development Goal#7: Ensure access to affordable, reliable, sustainable and modern energy for all.

(10) Improved indoor lighting products positively impact the quality of life and the environment by –

(A) Enabling women and children to engage in educational and economic endeavors after dark;

(B) Promoting gender equality and women's empowerment;

(C) Improving health and safety;

(D) Advancing environmental stability by reducing reliance on fossil fuels;

(E) Reducing contributions to global climate change; and

(F) Ensuring and facilitating access and delivery of medical care, particularly endeavors after dark.

§ 3. Policy

It is the policy of [*name of country*] to –

(1) Encourage universal access to lighting;

(2) Encourage energy supplies from renewable and sustainable resources;

(3) Encourage national and international efforts to promote, distribute, enable, and maintain universal access to lighting;

(4) Encourage national and international research, development, and deployment of lighting products;

(5) Encourage research, development, and deployment of safe lighting products which are safe and utilize renewable energy generation sources;

(6) Encourage the establishment of National Minimum Quality and PerformanceStandards such as United Laboratories or IEEE accepted standards; and

(7) Encourage technology transfer of renewable and sustainable energy development and universal access to lightning.

§ 4. Definitions

In this Act:

(1) "Lighting Product" means one that:

(A) employs appropriate durable, affordable, renewable, harmless, and accessible sustainable energy technologies;

(B) has been prototypically demonstrated, tested, and certified as meeting-

(i) Brightness Standards; and

(ii) indoor ambient air quality standards; or

(iii) if a developing country determines that indoor ambient air quality standards cannot be achieved, the reasonable interim air quality standards established by the developing country that improve existing indoor ambient air quality; and

(C) meets minimum durability standards based on the needs and conditions of such developing country and its peoples.

(2) "Brightness Standards" means that lighting products for general household use must provide an output of 20 lumens or illuminate an area equal to 2 sheets of paper at 25 lux.

§ 5. Lighting Product Manufacturing, Promotion, and Distribution

(a) **In General.**

There is established within the [*ministry or agency for international aid*] a Lighting Product Manufacturing and Distribution Program.

(b) **Purpose.**

The purpose of the program established by subsection (a) is to provide international partnerships and local entrepreneurs with financial, institutional, and technological assistance to develop, manufacture, promote, distribute, and maintain certified safe, improved lighting products and charging stations in developing countries.

(c) **Funding.**

(1) The program established by subsection (a) shall be funded in the amount of $15,000,000 each year for 10 years.

(2) Criteria – The administrator of the program established by subsection

(a) shall establish criteria for the use of funds provided by paragraph (1) to carry out the purpose of the program.

(3) Consultation – The criteria established under paragraph (2) shall be developed in consultation with:

(A) governmental and community leaders in developing countries;

(B) indigenous and affected populations and other stakeholders;

(C) non-governmental organizations working to promote safe and sustainable indoor lighting;

(D) [*other relevant ministries or agencies within the developed country*]; and

(E) the interested public.

(4) Notice and Comment – The administrator of the program established by subsection (a) shall provide public notice and an opportunity for any interested party to comment on any proposal to this section or amendments thereto; (b) agency for receiving comments shall respond in a timely manner.

(5) Availability of funds – The funding provided by paragraph (1) shall be available to offices or programs within the [*appropriate agency or agencies within the ministry for international aid*] in accordance with –

(A) the criteria established under paragraph (2); and

(B) such other rules as are established by the [agency head].

(6) Grants and other aid –The program established by subsection (a) may, in accordance with the criteria established under paragraph (2) and without the need for any matching or base funds, use up to 20 percent of the funding provided by paragraph (1) to provide grants, loans, or other methods of financial support to businesses and other non-governmental organizations working to develop, manufacture, promote, distribute, or maintain improved lighting products in developing countries.

(d) Monitoring; Reporting.

The administrator of the program established by subsection (a) shall –

(1) monitor and evaluate the effectiveness of the program; and

(2) report every 2 years after the date of enactment of this Act to the [*appropriate developed country officials and entities*] and the public on the effectiveness of the activities supported by and carried out under the program.

(e) **Accounting.**

The administrator of the program established by subsection (a) shall account for the funds it receives and distributes. The accounting shall comply with generally accepted accounting principles and shall be made available to the [*appropriate developed country officials and entities*] and the public within 90 days of the end of each fiscal year. The program shall be audited by independent auditors, selected by the executive committee of the Agency, at the end of every other fiscal year.

§ 6. Grant Program

(a) **In General.**

There is established within the [*ministry or agency for applied energy research and design*] to facilitate a Lighting Product Research, Development, and Demonstration in partnership with stakeholders in developing countries.

(b) **Purpose.**

The purpose of the grant program established by subsection (a), is to enable and facilitate the research, development, testing, and demonstration of:

(1) effective and efficient appropriate sustainable energy technologies that provide alternatives to the use of damaging fuel-based lighting;

(2) alternative lighting products and components thereof;

(3) accessible and user-friendly centralized charging mechanisms and stations;

(4) conduct and support research and monitoring on household, local, and global production of black carbon and other pollutants emitted by fuel-based lighting;

(5) conduct and support research and monitoring on the adverse human health and environmental effects associated with the black carbon and other pollutants emitted by fuel-based lighting;

(6) research and develop best practices and programs to reduce the adverse human health and environmental effects associated with black carbon and other pollutants through the use of fuel-based lighting; and

(7) inform governments, researchers, and the public of the research, monitoring, best practices, and programs developed under paragraphs (4) through (6).

(8) leverage existing research and development in the Sustainable Energy sphere—wind turbines, hydro-electric (coastal, rainshed), solar, biofuel—and cooperatively integrate renewable, sustainable, affordable lighting components therein.

(c) **Funding.**

(1) In general –The program established by subsection (a) shall be funded in the amount of $15,000,000 each year for 10 years.

(2) Criteria – The administrator of the program established by subsection (a) shall establish criteria for the use of funds provided by paragraph (1) to carry out the purpose of the program.

(3) Consultation – The criteria established under paragraph (2) shall be developed in consultation with:

(A) domestic and international businesses, academic institutions, and non-profit institutions that are developing or are interested in the research, development, testing, or demonstration of safe and sustainable lighting products;

(B) [*other relevant ministries or agencies within the developed country*];

(C) indigenous and affected populations/community leaders in developing countries, and other stakeholders; and

(D) the interested public.

(4) Notice and Comment – The administrator of the program established by subsection (a) shall provide public notice and an opportunity for any interested party to comment on any proposal under paragraph (2) or amendments thereto.

(5) Availability of funds – The funding provided by paragraph (1) shall be available to offices or programs within the [*ministry or agency for applied energy research and design*] in accordance with:

(A) the criteria established under paragraph (2); and

(B) such other rules as are established by the [*agency head*].

(6) Grants and other aid – The administrator of the program established by subsection (a) shall, in accordance with the criteria established under paragraph (2) and without the need for any matching or base funds, use up to 80 percent of the funding provided by paragraph (1) to provide grants, loans, or other methods of financial support to academic, business, and other non-governmental entities for research, development, testing, or demonstration of safe and sustainable lighting products.

(d) **Monitoring; Reporting.**

The administrator of the program established by subsection (a) shall:

(1) monitor the effectiveness of the program; and

(2) report every 5 years after the date of enactment of this Act to the [*appropriate developed country officials and entities*] and the public on the effectiveness of the activities supported by and carried out under the program.

(e) **Accounting.**

The administrator of the program established by subsection (a) shall account for the funds it receives and distributes. The accounting shall comply with generally accepted accounting principles and shall be made available to the [*appropriate developed country officials and entities*] and the public within 90 days of the end of each fiscal year. (b) The program shall be audited by independent auditors, selected by the executive committee of the Agency, at the end of every other fiscal year.

§ 7. Health and Environmental Research

(a) **In General.**

There is established within the [*ministry or agency for health or environmental research*] a Lighting Product Health and Environmental Research Program.

(b) **Purpose.**

The purpose of the program established by subsection (a) is to:

(1) conduct and support research and monitoring on household, local, and global production of black carbon and other pollutants emitted by fuel-based lighting;

(2) conduct and support research and monitoring on the adverse human health and environmental effects associated with the black carbon and other

pollutants emitted by fuel-based lighting;

(3) research and develop best practices and programs to reduce the adverse human health and environmental effects associated with black carbon and other pollutants through the use of fuel-based lighting; and

(4) inform governments, researchers, and the public of the research, monitoring, best practices, and programs developed under paragraphs (1) through (3).

(5) collaborate and integrate with existing research programs and standards to ensure relevance and interoperability globally

(c) **Funding.**

(1) In general – The program established by subsection (a) shall be funded in the amount of $15,000,000 each year for 10 years.

(2) Criteria – The administrator of the program established by subsection (a) shall establish criteria for the use of funds to conduct the research, monitoring, and other activities described in subsection (b).

(3) Consultation – The criteria established under paragraph (2) shall be developed in consultation with:

(A) domestic and international businesses, academic institutions, and non-profit institutions that are interested in reducing the adverse health and environmental effects of fuel-based lighting;

(B) domestic and international businesses, academic institutions, and non-profit institutions that are developing or are interested in the development of fuel-based lighting;

(C) the [*other relevant agencies within the developed country*];

(D) indigenous and affected populations/community leaders in developing countries, and other stakeholders; and

(E) the interested public.

(4) Notice and Comment – The administrator of the program established by subsection (a) shall provide public notice and an opportunity for any interested party to comment on any proposal to establish criteria under paragraph (2) or amendments thereto.

(5) Availability of Funds – The funding provided by paragraph (1) shall be available to any offices or programs within the [*agency for applied energy research and design*] in accordance with:

(A) the criteria established under paragraph (2); and

(B) such other rules as are established by the [*agency head*].

(6) Grants and Other Aid – The administrator of the program established by subsection (a) may, in accordance with the criteria established under paragraph (2) and without the need for any matching or base funds, use up to 80 percent of the funding provided by paragraph (1) to provide grants, loans, or other methods of financial support to academic and other non-governmental entities for the health and environmental research, monitoring, and other activities described in subsection (b).

(d) **Monitoring; Reporting**

The administrator of the program established by subsection (a) shall:

(1) monitor the effectiveness of the program; and

(2) report every 5 years after the date of enactment of this Act to the [*appropriate developed country officials and entities*] and the public on the effectiveness of the activities supported by and carried out under the program.

(e) **Accounting**

The administrator of the program established by subsection (a) shall account for the funds it receives and distributes. The accounting shall comply with generally accepted accounting principles and shall be made available to the [*appropriate developed country officials and entities*] and the public within 90 days of the end of each fiscal year.

COMMENTARY

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I. SECTION 2. FINDINGS

The most important aspect of the first proposed finding is the emerging acceptance of a shared global responsibility for communities to develop in sustainable ways, and in accordance with the community needs and wants.[1]

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1. *RIO+20 United Nations Conference on Sustainable Development*, U.N. SUSTAINABLE FUTURE 1-6 (2011), http://www.un.org/en/sustainablefuture/pdf/conf_brochure.pdf (this understanding was most apparent at the Rio+20 conference in 2012, where over ten days, more than 45,000 global leaders, including about 130 heads of state and government pledged $513 billion to build a sustainable future. Discussions centered around two main themes: how to build a green economy to achieve sustainable development and lift people out of poverty; and how to improve international coordination for sustainable development. Far greater costs will be incurred in the future if action is not taken now—poverty, instability, and the degradation of the planet will only increase with time); *see* Gwenaelle Legros et al., *The Energy Access Situation in Developing Countries: A Review Focusing on the Least Developed Countries and Sub-Saharan Africa*, WORLD HEALTH ORG. 10 (2009),

Inequalities in energy access provide an opportunity for developed countries to support developing countries and the communities and businesses aspiring to this degree of sustainability. As the first and second proposed findings indicate, responsibility for Sustainable Development is "differentiated" in the sense that countries experiencing high levels of poverty bear the brunt of the responsibility to solve the poverty puzzle – but not alone. As global citizens, the wealthy and developed countries support developing countries in numerous ways to ensure sustainable development through access to energy for all.[2]

As noted in findings three through ten, a large part of the global community—as many as 1.5 billion people—rely upon unsafe or non-existent methods to provide lighting in their homes. The burning of kerosene or other non-renewable fuels correlates to health and safety issues, spanning the gamut from lung disease, fever, abdominal distension to explosion and fire. A lack of illumination all together leaves people vulnerable to crime and theft at night. Children in developing countries suffer particularly negative outcomes of this not only in their education, but also in their development as kerosene has drastic consequences on their health, particularly when children are malnourished.[3]

As highlighted by the ninth proposed finding, the development and deployment of improved indoor lighting products is essential to the U.N. Sustainable Development Goals, and to the overarching purposes of eliminating poverty.[4] Challenges in poverty often stem from a lack of access to resources; without the capacity to read after the sun sets, the energy poor have less of a chance to reach their goals of education. One important way to combat this issue is a legal mechanism that overcomes this inequality.[5] Children are specifically vulnerable in an energy poor environment with little to no illumination capacities.[6]

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http://content.undp.org/go/cms-service/stream/asset/?asset_id=2205620.

2. Charlotte Epstein, *Common But Differentiated Responsibilities*, BRITANNICA (2015), http://www.britannica.com/topic/common-but-differentiated-responsibilities; *see also The Principle of Common But Differentiated Responsibilities: Origin and Scope*, CISDL Legal Brief to the World Summit on Sustainable Development (Aug. 26, 2002), http://cisdl.org/public/docs/news/brief_common.pdf.

3. Nicholas L. Lam et al., *Kerosene: A Review of Household Uses and Their Hazards in Low- and Middle-Income Countries*, 15 J. TOXICOLOGY & ENVTL. HEALTH, 15, 17-21 (2012), http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3664014/pdf/nihms447641.pdf; Debajit Palit & Jarnail Singh, *Lighting a Billion Lives—Empowering the Rural Poor*, 59 BOILING POINT 42, 42 (2011); P. Gupta et al., *Kerosene Oil Poisoning—A Childhood Menace*, 29 INDIAN PEDIATRICS 979, 979-83 (1992), http://www.indianpediatrics.net/aug1992/979.pdf.

4. *See* Legros et al., *supra* note 1.

5. Simon Batchelor, Joy S. Clancy & Margaret Skutsch, *The Gender-Energy-Poverty Nexus: Finding the Energy to Address Gender Concerns in Development*, 7 (2002), http://www.riaed.net/IMG/pdf/DFID_Doc_Energy_Gender.pdf.

6. *See* Lam et al., *supra* note 3; Batchelor, *supra* note 5; Kristine Pearson, *Kerosene: A Burning Issue in Women's Rights, Human Rights*, LIFELINE ENERGY BLOG (Oct. 2, 2011), http://lifelineenergy.org/kerosene-a-burning-issue-in-human-rights/; William D. McNally, *Kerosene Poisoning in Children: A Study of 204 Cases*, 48 J. PEDIATRICS 296 (1956) (children may not have time to complete their studies during daylight hours, and are therefore unable to take full advantage of their education since it is impossible to read at night without lighting sources. It is postulated that there are

Lighting with kerosene can have drastic consequences on not just health, but also on global development and degradation of resources. Fossil fuels are not only unsustainable; but in addition, the burning of fossil fuels is dangerous.[7] Illness and injury do not wait for daylight to strike. Reliable lighting sources will better facilitate the access and delivery of medical care, particularly after dark.[8]

II. SECTION 3. POLICY

Section 3 sets out seven proposed policies that support this legislation. These policies are written in sparse terms allowing for their more complete expression by each country that adopts them. Most of the proposed policies relate directly to discrete sections within the proposed Model Law. Two of them do not directly relate: Policy No. 2, which promotes renewable energy technologies, and Policy No. 6 which suggests minimum performance standards.

The choice of power source is an undercurrent of power that is important to consider in the promotion of sustainable lighting technology. As Policy No. 2 and No. 3 suggest, this is an important problem that requires significant consideration because perceived low kerosene costs may impede the adoption of sustainable lighting technologies and frustrate the goal of this statute. A solar bulb or a microgrid tied to a wind generator will have significant up-front costs.[9] However, over the long term, kerosene begins to become expensive, potentially costing many times more than some electric light bulbs. A 2003 study conducted in Berkeley found that LEDs of that time cost five cents per thousand lux hours, while non-pressurized kerosene lamps could cost as much as $3.80 per thousand lux hours.[10] Accordingly, starting with the policies, and at each level of implementation, it is important for the grant, entrepreneurial, tech-transfer and research programs created under this Model Law to consider how to overcome the financial barriers to the implementation of renewable resources.

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approximately 1.3 billion people living in poverty and 70% of this population are women; many of these women live in female-headed houses in rural areas. The energy inequality hinders their decision making within the household and community while preventing their abilities perform rudimentary tasks with any degree of efficiency.).

7. Francis X. Johnson & Fiona Lambe, *Energy Access, Climate and Development*, COMMISSION ON CLIMATE CHANGE AND DEVELOPMENT 3 (2009), http://www.sei-international.org/mediamanager/documents/Publications/Climate/ccd_energyaccessclimateanddev2009.pdf; Nancy Floyd et al., *Sustainable Energy Development in Emerging Markets*, 24 U. PA. J. INT'L. ECON. L. 759, 799 (2003), ("often up to one-third of their disposable cash income to purchase energy services of rather poor quality . . . 35-45 cents/kilowatthour or more . . . through poor energy, batteries and the night candles, kerosene and the like."); Gautam S. Dutt, *Illumination and Sustainable Development Part I: Technology and Economics*, 1 ENERGY FOR SUSTAINABLE DEV. 23 (May 1994).

8. Batchelor, *supra* note 5; Kamil Kaygusuz, *Energy Services and Energy Poverty for Sustainable Rural Development*, 15.2 RENEWABLE AND SUSTAINABLE ENERGY REVS. 936, 940 (Feb. 2011).

9. Kaygusuz, *supra* note 8; Evan Mills, *The Specter of Fuel-Based Lighting*, 308 SCI. 1263, 1263 (2005), http://light.lbl.gov/pubs/mills_science_fbl_enhanced.pdf.

10. Evan Mills, *Technical and Economic Performance Analysis of Kerosene Lamps and Alternative Approaches to Illumination in Developing Countries*, LAWRENCE BERKELEY NAT'L LAB. 3 (June 28, 2003), http://evanmills.lbl.gov/pubs/pdf/offgrid-lighting.pdf.

An additional policy that is proposed is the encouragement of minimum quality and performance standards (No. 6). Those products that are being endorsed or funded by international aid should be subject to testing and standards to ensure their performance. The worst potential outcome would be a situation where the assistance provided at substantial costs yields only ineffective or defective products that do not supply the needed light.

III. SECTION 4. DEFINITIONS

Section 4 provides important definitions for the development and dissemination of clean lighting. Paragraph (1) addresses three important components of the definition of a "Lighting Product." First, the definition refers to the essential qualifications that lighting products made from sustainable energy technology possess, which are "appropriate durable, affordable, renewable, harmless, and accessible." There is no prioritization in the process of qualification, as all of them are equally important and thus have to be met.

Second, "Lighting Product" has to satisfy two requirements that have to be "demonstrated, tested, and certified."[11] First, the "Lightning Product" has to fulfill agreed upon "Brightness Standard." Second, the "Lighting Product" has to satisfy "indoor ambient air quality standards."[12] Although the recommended standards are significantly incorporated within the definition of "Lighting Product," in some cases, satisfying such standards may be too burdensome or even practically unattainable for a particular developing country. Therefore, if a developing country determines that indoor ambient quality standards cannot be achieved, the developing country may establish the reasonable interim air quality standards that improve existing indoor ambient air quality and best serves the needs of the developing country and its communities.

Third, the "Lighting Product" has to meet minimum durability standards, which should be determined based on the needs, conditions, and abilities of that

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11. The method of demonstration, testing, and certification has not been provided in the body of the Model Law, as it has to cater to the specific needs and conditions of a developing country that is implementing this Model Law. Therefore, all actors and stakeholders involved in the establishment of lighting in that particular country should be engaged in structuring the method of demonstration, testing, and certification of "Lighting Products."

12. Stephen Katsaros & Elizabeth Neville, *Globalization of Markets for ASET, in* INTERNATIONAL ENERGY AND POVERTY: THE EMERGING CONTOURS 218, 220 (Lakshman Guruswamy ed., 2015) (addressing the bodily hazards of kerosene which have been linked to several health symptoms such as "abdominal distension, breathlessness, fever, convulsions, unconsciousness, cough, and, in some cases, death."); *see Air Quality and Health Fact Sheet No. 313*, WORLD HEALTH ORG. (Mar. 2014), http://www.who.int/mediacentre/factsheets/fs313/en/index.html; *WHO Guidelines for Indoor Air Quality: Selected Pollutants*, WORLD HEALTH ORG. 4 (2010), http://www.euro.who.int/__data/assets/pdf_file/0009/128169/e94535.pdf ("the air quality guidelines for particulate matter recommended by the 2005 global update *(3)* are also applicable to indoor spaces and a new review of the evidence is not necessary at present."); *see also WHO Air Quality Guidelines for Particulate Matter, Ozone, Nitrogen Dioxide and Sulfur Dioxide: Summary of Risk Assessment*, WORLD HEALTH ORG. 8-13 (2006), http://apps.who.int/iris/bitstream/10665/69477/1/WHO_SDE_PHE_OEH_06.02_eng.pdf.

particular developing country and its people.[13] The requirement of minimum standard durability comes from the experience that has demonstrated that durability of lighting products is essential for a long-term success of the development in lighting sector.

Paragraph (2) defines the "Brightness Standard," as it directly correlates with the sustainability of the "Lighting Product." "Brightness Standard" contains the requirement that lighting products for general household use must provide an output of 20 lumens[14] of illuminate an area equal to 2 sheets of paper at 25 lux. Metrics for measuring brightness and luminosity are often based on lumens. A lumen measures one square foot of light that is produced by a candle one foot away from a wall.[15] Although lux and watts may also be acceptable measurement standards in some instances, this Model Law will use lumens.[16]

IV. SECTION 5. LIGHTING PRODUCT MANUFACTURING, PROMOTION, AND DISTRIBUTION

Section 5 establishes a program to support the manufacturing, promotion, and distribution of lighting products in developing countries. An adopting country may find that an existing office, agency, or program has the appropriate capacities to carry out the program;[17] in other cases, a new program or office may best serve the

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13. The process of determining what the minimum durability standards should be should include all parties working on the sustainable lighting under this Model Law. The aim of this collaboration is to reach an agreement that could be fulfilled by the investors and/or the developed countries without creating unreasonable burdens on the developing countries.

14. An output of 20 lumens is equated to a 4 watt night light bulb, which is the minimum of brightness in lumens. *See Lumens & LED Brightness*, POWERSURE, http://www.power-sure.com/lumens.htm#Led0 (last visited Feb. 4, 2016).

15. K. SOMAN, INTERNATIONAL SYSTEM OF UNITS: A HANDBOOK ON SI UNITS FOR SCIENTISTS AND ENGINEERS 16 (2009); *see also LED Flashlights Fact Sheet*, STARLINE INC, https://us.starline.com/content/image/Forms/distributor_resources/FactSheets/Starline_FactSheet_LED.pdf.

16. Wattage is a measure of power, and lux, a measure of the spread of light in an area, is defined as one lumen per square meter. Power does not necessarily translate into luminance; while a lightbulb may use a certain wattage, if it is especially inefficient it will emit a low light output. Lumens are appropriate to use here because they measure the total light output from a source, and are useful as a base or foundation measure from which to work out a lux measurement, for example, if a light bulb is fitted in a home. Further, not all lights are likely to be used indoors and lighting equipment often draw more attention to a lumens measurement than a lux measurement. For example, the United States Dept. of Energy's EnergyStar program now measures bulb brightness in lumens. *See Lighting Made Easy – Just Look for the Energy Star*, ENERGY STAR, https://www.energystar.gov/ia/partners/manuf_res/ES_Lighting_ConsumerFactsheet.pdf?0b551475. *See also Lumens and The Lighting Facts Label*, U.S. DEP'T OF ENERGY, http://energy.gov/energysaver/lumens-and-lighting-facts-label.

17. An example of a developed country's agency that has the appropriate capacities to carry out the goals of this model legislation is the Office of International Affairs ("IA") within the United States Department of Energy. The IA is primarily responsible for "international energy cooperation in energy, science, and technology . . .[by] lead[ing] and develop[ing] the Department's bilateral and multilateral R&D [research and development] cooperation, including investment and trade activities." *Office of International Affairs*, U.S. DEPT. OF ENERGY, http://www.energy.gov/ia/office-international-affairs (last visited Apr. 1, 2016).

goals of the model legislation.[18] In either case, the best course is likely to avoid duplication and leverage existing administrative infrastructure to support the implementation of lighting product development, manufacturing, promotion, and distribution projects in developing countries. In finding or creating a program, office, or agency that will implement this model legislation, the adopting country should consider how the entity will create and foster international partnerships and partnerships with local entrepreneurs.[19]

Multiple countries, non-governmental organizations, and donors have collectively and individually contributed to the efforts of providing lighting for everybody by assuring collaboration, funding, and resources to develop and promote the cause.[20] For instance, the United States has committed more than $7 billion over a period of five years to finance sustainable and long-scale solution to better access to energy, particularly lighting.[21] The overarching emphasis of such global efforts has been settled on a bottom-up approach in providing access to lighting.[22] The Model Laws on Lighting provides for a bottom-up solution, which is based on the partnership between developed and developing countries driven by the determined budget to implement sustainable development of lighting.

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18. In creating a new office, agency, or program, an adopting country has a number of internal options in creating a new entity. One option is to create a quasi-governmental agency with a private organization or companies that have expertise in lighting products. *See* KEVIN R. KOSAR, CONG. RESEARCH SERV., RL 30533, THE QUASI GOVERNMENT: HYBRID ORGANIZATIONS WITH BOTH GOVERNMENT AND PRIVATE SECTOR LEGAL CHARACTERISTICS 2 (2011) (explaining that a quasi-governmental entity is an "organization that has been assigned by law, or by general practice, some of the legal characteristics of both the governmental and private sectors."). Some examples of private companies working towards providing access to energy with lighting that an adopting country could partner with are Elephant Energy and Nokero, both of which are working towards creating and providing sustainable energy technologies. *See* NOKERO SOLAR, http://www.nokero.com/ (last visited Nov. 6, 2015); ELEPHANT ENERGY, http://www.elephantenergy.org/ (last visited Nov. 6, 2015).

19. An example of international partnership can be seen with the United States Environmental Protection Agency's working with Brazil's Sao Paulo Sanitation Technology Company (CETESB), a Sao Paulo State environmental agency, by sharing information on environmental management and risk reduction. *EPA Collaboration with Brazil*, U.S. ENVTL.. PROTECTION AGENCY, http://www2.epa.gov/international-cooperation/epa-collaboration-brazil#activities (last visited Nov. 4, 2015).

20. For example, according to the International Energy Agency, sub-Saharan Africa will require more than $300 billion in investment to achieve universal electricity access by 2030. Press Release, Office of the Press Sec., Fact Sheet: Power Africa, (June 30, 2013), https://www.whitehouse.gov/the-pressoffice/2013/06/30/fact-sheet-power-africa. Consequently, only with greater private sector investment can the promise of Power Africa be realized. The global effort to provide lighting to everyone has been shared by multiple governmental, non-governmental, and private actors, such as the Global Off-Grid Lighting Association ("GOGLA") (http://global-off-grid-lighting-association.org/); The World Bank Group & International Funding Corporation with their initiative the Lighting Global (http://www.lightingglobal.org/); the Elephant Energy (http://www.elephantenergy.org); and the U.S. Energy Department.

21. *Id.* The funding incorporated technical assistance, grants, risk mitigation in private sector energy transactions, assistance in structuring governmental policies to attract investment of private sector, investment in energy infrastructure, regulatory reforms, and institutional capacity building.

22. *Power to the People*, THE ECONOMIST (Sep. 2, 2010), http://www.economist.com/node/16909923.

Despite global attention and understanding of the urgent need to create an access to lighting for everyone, the current efforts fall short of what is necessary to bring the change. Financial, institutional, technological, and research support for access to lighting enjoy a track record of proven success, but these efforts have lacked the scale of collective engagement essential for adequate progress. There is no established international funding mechanism or institutional body with the ability to collect, deliver, and implement all of the resources needed to combat the lack of lighting in developing world. The adoption and implementation of the Model Law will have a significant effect on quality of human life, health, education, welfare, environment, and economy on both global and local scales.

The participation of the developed countries in programs under the structure of this Model Law is intended to complement and unify the global efforts of delivering sustainable electricity to every household. It is irrelevant whether the legislation is perceived as a means to implement pledges for international aid, to carry out the common but differentiated responsibility of developed nations to support sustainable development in developing countries, or to pursue other strategic or ethical agenda, developed country engagement in the effort should be recognized as obligatory and indispensable.

The developing rather than developed country should be responsible for the calculation and quantification of the amount needed for the funding in order to implement the Model Law within its territory.[23] It does not mean that a developed country should not have an input in finalizing or amending the funding. The estimated funding should be a product of collaborative effort and dialogue between developed and developing countries (and/or their representatives), as the input from both countries is principle for the ultimate success.[24] For the effective operation and development of the installations under the Model Law, both countries could create and implement options for addressing the risks.[25]

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23. In order to estimate an accurate amount needed for the funding of this project, first the agency that is in control needs to identify and prioritize the barriers for such installations. When assessing the needed funding, barriers faced by the developing country need to be evaluated. Professor Safty suggests taking into account four types of barriers: 1) economic; 2) technical; 3) political/institutional; 4) cultural/social/environmental. Mark Safty, *Assessing Challenges to Development*, *in* INTERNATIONAL ENERGY AND POVERTY: THE EMERGING CONTOURS, 133, 134-35 (Lakshman Guruswamy ed., 2015).

24. The primary requirement for foreign funding and investment is the reduction of an inherent risk of investment in developing countries. Commonly faired conditions include instability and uncertainty. Developing country could mitigate such uncertainty by creating competitive advantage in a form of incentives and/or recognitions. For instance, the developing country could implement certifications for investor's product recognizing investor's contributions to the development of lighting. It has been effectively implemented by several successful energy programs such as Elephant Energy. Developing State that is adopting the Model Law could also incorporate specific indemnities for the investors. *Id.* at 136. *African Ventures*, ELEPHANT ENERGY, http://www.elephantenergy.org/african-ventures.

25. Specific acknowledgement of the possibility of certain risks arising out of the implementation of the Model Law is beneficial for overall effectiveness of the project. Countries are encouraged to evaluate possible risks related to the local energy sector. If domestic conditions of the developing country allow, collaborating countries should identify governmental and/or non-governmental

The Model Law also calls for significant and transparent[26] monitoring, reporting, and accounting. Such practices are important for establishing and maintaining an effective and efficient international aid program of the kind that is called for here.[27]

V. SECTION 6. GRANT PROGRAM

Section 6 provides options that a ministry or agency may utilize in assisting in the development of sustainable lighting solutions in the developing world. Under Section 6, the agency will enable and facilitate: 1) the research and development of appropriate sustainable energy lighting technologies, and 2) the research of the

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structures and actors, specific project developers, communities and their representatives authorized to address prospective problems related to the installations under the Model Law. Countries could also specify, to a reasonable extent, the process and methods of communication between these authorized entities and actors in attempt to resolve problems.

26. Transparency, a growing international concept, calls for governments to be "more open, accountable, and responsive to citizens," which creates trust between the government and the citizens. OPEN GOVERNMENT PARTNERSHIP, http://www.opengovpartnership.org/ (last visited Nov. 11, 2015). The trust that transparency will build will help the adopting country implement and distribute Lighting Products more efficiently.

27. In determining the best course of action for monitoring, reporting, and accounting, the adopting country must determine what method of monitoring will work best for the implementation of this model legislation. There are a number of methods an adopting country can choose from. One example is Social Impact Assessment ("SIA"), which is "the [process] of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions." Frank Vanclay, *International Principles for Social Impact Assessment*, 21 IMPACT ASSESSMENT & PROJECT APPRAISAL 5, 5 (March 2003), http://www.tandfonline.com/doi/pdf/10.3152/147154603781766491. However, SIA is more of an "impact prediction mechanism" that will consider the "social impacts" on the affected communities. FRANK VANCLAY ET.AL., SOCIAL IMPACT ASSESSMENT: GUIDANCE FOR ASSESSING AND MANAGING THE SOCIAL IMPACTS OF PROJECTS, iv, INT'L. ASS'N. FOR IMPACT ASSESSMENT (April 2015), http://commdev.org/userfiles/IAIA%202015%20Social%20Impact%20Assessment%20guidance%20document.pdf Another example is the Logical Framework Approach ("LFA"), which is somewhat different than SIA in the fact that "LFA is an aid to logical thinking and a means by which a project may be structured and described for analytical purposes." Gilroy Coleman, *Logical Framework Approach to the Monitoring and Evaluation of Agricultural and Rural Development Projects*, 2 PROJECT APPRAISAL 251, 252 (December 1987), http://www.tandfonline.com/doi/pdf/10.1080/02688867.1987.9726638. LFA involves the use of a 4x4 matrix with the row representing project objectives and the columns representing how the objectives will be fulfilled. *Id.* Although LFA provides a clear picture of what a project will look like, LFA is more for the initial planning and preparation of a project, rather than a monitoring mechanism. A third example, and perhaps the most efficient method of monitoring and reporting, is IA. IA "brings together natural, social, and economic information" along with bringing "together scientists, policy makers, citizens, NGO, and industry representatives to evaluate" and making decisions. Keely Dinse et. al., BENEFITS OF INTEGRATED ASSESSMENT: INFORMATION FOR DECISION MAKERS, MICHIGAN SEA GRANT & GRAHM ENVTL. SUSTAINABILITY INST., 2 (2010), http://www.miseagrant.umich.edu/downloads/ia/10-200-Benefits-of-Integrated-Assessment.pdf. By brining numerous groups and individuals together, IA allows for generated reports to be "accurate, agreed upon information" that come from not only a local perspective, but also a regional perspective, which also allows for a smoother transition and change if the program needs to be changed. *Id.* at 4-6.

efficacy of work to ensure access to lighting for all.[28]

Kerosene is significantly priced than alternative lighting solutions, but as demonstrated in Section 3, the risks greatly outweigh the benefits of a cheaper fuel source. One in three people use kerosene or other fuels as a light source but only receive 1% of the energy services due to mechanical inefficiencies. Funding will provide not only grounds for research, but also expansion of energy in places where energy poverty is extreme (for example the development of small scale microgrids and deployment of appropriate sustainable lighting technologies). In spending money on these efforts or research and sustainable development, it is estimated that there is the potential to save $75-115 billion a year when looking at factors outside the price of the fuels.[29] Researching the health and environmental benefits will provide more motivation for developed countries to support developing countries to ensure access to illumination.

Through the principle of common but differentiated responsibility, spearheading research on health and environmental benefits is a way developed countries with more sophisticated research institutions can lead research at a global level, as well as support research being done in developed countries on these issues. This public private partnership is currently noted as a placeholder figure that is expected to have fluctuations.[30] This once again points to the common but differentiated responsibilities of more established organizations in the promotion of energy equality. The service and distribution of funds must be the responsibility of the developed country intervening; it should not to be outsourced to a private third party.

To come to a complete understanding of a dynamic issue, all stakeholders must be represented and all viewpoints must be addressed in order to properly move towards a better future for the global community. Consultations must be inclusive and involve members at all levels of the established ministry or agency. When working cross-culturally and across borders, as is the foundation of the support outlined in this document, critical listening and building strong relationships must be a priority to ensuring the lasting impact of this work. This is done through consultations.

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28. Vijay Modi et al., ENERGY SERVICES FOR THE MILLENNIUM DEVELOPMENT GOALS, THE INT'L BANK FOR RECONSTRUCTION & DEV, THE WORLD BANK,& THE UNITED NATIONS DEV. PROGRAMME, 61 (2005), http://www.unmillenniumproject.org/documents/MP_Energy_Low_Res.pdf; Evan Mills, *Why We're Here: The $230-Billion Global Lighting Energy Bill*, 5th Int'l Conf. on Energy Efficient Lighting, Nice, France 369, 376 (2002), http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.202.5663&rep=rep1&type=pdf [hereinafter Mills]; KRISTEN RADECSKY ET AL., SOLID-STATE LIGHTING ON A SHOESTRING BUDGET: THE ECONOMICS OF OFF-GRID LIGHTING FOR SMALL BUSINESSES IN KENYA, The Lumina Project, Technical Report #3, 2 (2009), .http://escholarship.org/uc/item/2714q6kz [hereinafter RADECSKY].

29. Mills, *supra* note 28, at 369. The IEA postulates that $70 billion will be needed to fix the problem of energy inequality. *Id.* at 376, 381, Table 5. Although this seems grandiose, the long term benefits will ultimately result in saved money for the global community. *Id.*; RADECSKY, *supra* note 28, at 2; McNally, *supra* note 6 at 296; Gupta, *supra* note 3; Adrian J. Bradbrook et al., *A Human Dimension to the Energy Debate*, 26 NO. 4 J. ENERGY & NAT. RESOURCES L. 526, 532 (2008).

30. Mills, *supra* note 28, at 376.

There is not a one size fits all solution to ensuring access to illumination for all. For example, needs will be completely different in Sub-Saharan Africa, versus arctic tundra environments. The purpose of the ministry or agency established is to best support access to lighting around the world, in widely different environments. Therefore, program goals should be determined through consultations with the parties outlined in paragraph 3 of Section 6. Consultations are not to be used as events to simply inform parties of the work being done. In order to ensure that all parties are represented, awareness of the opportunity, and power of the consultation, must be understood by all parties. It will be wise for this ministry or agency to employ locals where research is done to ensure the power of all voices present.

The established agency head will be the administrator and facilitator that manages the distribution of funds. This abides within the agreed upon ideals of international accounting principles. To ensure that the money is spent in an appropriate manner, 80% of the funds must be appropriated to the aforementioned sectors so that the complexities are being solved with appropriate spending. Robust financial controls must be implemented to ensure funds are used effectively, and not lost to the unfortunate realities of corruption in many nations. Sustainable development requires long-term commitment and continuous checks and balances so that the program can be most effective in addressing energy inequality. Two years will provide enough time for development to occur while also providing insight as to potential room for growth or improvement. Standard practice is to dedicate no more than 10% of budget specifically to monitoring and evaluating of the program work.[31] To ensure the proper usage of funding, like any sound business or agreed upon international standards, an accountant will be used to monitor fund spending and distribution.

VI. SECTION 7. HEALTH AND ENVIRONMENTAL RESEARCH

This section establishes a research program focused on the impacts that sustainable lighting can have both on health and environmental issues. As the purpose section mentions, the most obvious health and environmental impacts are linked physically by black carbon. Black carbon is known to contribute to global warming. "According to some estimates, black carbon . . . [is] the No. 2 contributor to climate change after carbon dioxide."[32] The impacts of carbon

31. *See* Dirk Meusel et al., *A Framework to Monitor And Evaluate Implementation: WHO Global Strategy on Diet, Physical Activity And Health* 8, WORLD HEALTH ORG. (2008).

32. Bryan Walsh, *Black Carbon: An Overlooked Climate Factor,* TIME (Nov. 19, 2009), http://www.time.com/time/health/article/0,8599,1938379,00.html; Nicholas L. Lam, et al., *Characterizing Kerosene Demand for Light in India and Evaluating the Impact of Measures Affecting Access and Dependence, in* INNOVATING ENERGY ACCESS FOR REMOTE AREAS: DISCOVERING UNTAPPED RESOURCES: PROCEEDINGS OF THE INTERNATIONAL CONFERENCE 116, 116-19 (Martina Schäfer et al. eds., 2014). [hereinafter Lam, *Characterizing Kerosene Demand for Light in India and Evaluating the Impact of Measures Affecting Access and Dependence*]; Nicholas L. Lam et al., *Household Light Makes Global Heat: High Black Carbon Emissions From Kerosene Wick Lamps*, 46 ENVTL. SCI. TECH., 13531 (Nov. 19, 2012); *The New Black*, Global Warming, THE ECONOMIST (Jan. 19, 2013), http://www.economist.com/news/science-and-technology/21569686-soot-even-worse-

dioxide on the atmosphere last for decades, but black carbon's effects are short lived.[33] Unlike carbon dioxide, which remains in the atmosphere for centuries and even millennia,[34] black carbon attenuates in the atmosphere quickly when the source is removed.[35] As a result, reducing black carbon *production* would have a substantial impact on climate change – and it could have that impact *quickly*.[36] Indeed, as stated in recent testimony to the U.S. Senate Committee on the Environment and Public Works, "Multiple, peer-reviewed scientific studies have shown that aggressive reductions of those air pollutants that cause warming, in particular methane and black carbon, can reduce the rate of warming over the next several decades by approximately half."[37]

At the same time, using kerosene lamps exposes those using the lamps directly to the smoke guttering from the flame. "As much as 7-9% of kerosene consumed in kerosene lamps is converted to carbonaceous particulate matter that is

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climate-was-previously-thought-new-black. While it is clear that emissions from diesel locomotion, as well as black carbon from industrial facilities are major contributors to the problem, it would appear that controlling kerosene burning has potential to reduce climate change problems. *See* Bond et al., *Bounding the Role of Black Carbon in the Climate System: A Scientific Assessment*, 118 J GEOPHYSICAL RES.: ATMOSPHERES 5380, 5380 (June 6, 2013) (after conducting a 4-year study, the authors conclude that "[p]redominant sources [of black carbon] are combustion related, namely, fossil fuels for transportation, solid fuels for industrial and residential uses, and open burning of biomass."). However, the impact of kerosene burning on black carbon emissions or the impact of black carbon emissions on climate change are not universally accepted. *C.f.,* Richard A. Kerr, *Soot is Warming the World Even More Than Thought* 339 SCIENCE 382 (Jan. 25, 2013) (discounting the impact of biomass burning on global warming).

33. *See* Bond, *supra* note 32, at 5381, 5385, 5387; Drew Shindell et al., *Simultaneously Mitigating Near-Term Climate Change and Improving Human Health and Food Security*, 335 SCIENCE 183, 183 (Jan. 13, 2012); Robert F. Service, *Study Fingers Soot as a Major Player in Global Warming*, 319 SCIENCE 1745 (Mar. 28, 2008).

34. David Archer et al., *Atmospheric Lifetime of Fossil Fuel Carbon Dioxide*, 37 ANN. REV. EARTH & PLANETARY SCI. 117, 117, 121 (2009) (noting that the IPCC's initial statement that CO2 will be eliminated from the atmosphere in "50–200 years represents a timescale for equilibration with the ocean, a process that leaves a significant fraction of CO2 in the atmosphere."). The "IPCC reports in 1995 and 2001 compounded the mistake, revising the lower limit of the lifetime estimate down to only five years." *Id.* at 121. Archer points out that the 2007 IPCC report more accurately states that "[a]bout half of a CO2 pulse to the atmosphere is removed over a timescale of 30 years; a further 30% is removed within a few centuries; and the remaining 20% will typically stay in the atmosphere for many thousands of years." *Id.*

35. Gregory R. Carmichael et al., *Short-Lived Climate Forcing Agents and Their Roles in Climate Change*, 77 PROCEDIA – SOC. & BEHAVIORAL SCI. 227, 228 (2013) ("BC is a strong short-lived climate forcing agent.").

36. *Id.*; Nicholas Loren Lam, *Residential Use of Kerosene in Low-and Middle-Income Countries: Pollutant Emissions, Markers of Pollution, Drivers and Impacts*, 1 (2014) (unpublished Ph.D. dissertation, University of California, Berkeley) (on file with author) ("[a]s a source, the net effect of pollutant emissions from kerosene lamps on climate would be positive (warming) given the relatively small cooling effect of co-emitted pollutants.").

37. *Societal Benefits from Reductions in Emissions of Methane and Black Carbon: Hearing on the Super Pollutants Act of 2014 Before the S. Comm. on the Environment and Public Works*, 113 Cong. 2 (2014) (statement of Drew Shindell),
http://sites.nicholas.duke.edu/drewshindell/files/2015/01/Senate_EPW_testimony_Dec2014_Shindell_v3.pdf.

almost entirely black carbon."[38] The International Energy Agency ("IEA") predicts that the numbers of people expected to die from exposure to smoke from using ancient technologies like kerosene lamps and three stone fires is *likely to increase* over the next twenty to twenty-five years.[39] In real-world terms, the IEA's predictions mean that the number of deaths from smoke will in 2030 likely be essentially the same as the number of deaths caused by malaria, tuberculosis, and AIDS – combined – in that same year. As the IEA points out, such policies do not meet the goal of energy access for all.[40]

The remaining portions of Section 7 outlines a funding, monitoring and accounting program that is identical to the other programs set out in Sections 5 and 6. Accordingly, reference is made to the commentary of those sections concerning the financial aspects of Section 7.

38. Lam, *Characterizing Kerosene Demand for Light in India and Evaluating the Impact of Measures Affecting Access and Dependence*, *supra* note 32, at 119.

39. *See* INT'L. ENERGY AGENCY, *World Energy Outlook 2011*, at 489, fig. 13.10 (2011).

40. *Id.* at 469.

THE JOURNEY FROM THE MILLENNIUM DEVELOPMENT GOALS TO THE SUSTAINABLE DEVELOPMENT GOALS*

VED P. NANDA**

I. INTRODUCTION

A discussion of this topic will not be complete without at least briefly touching on the meaning of these two terms—development and sustainable development. A marked shift has occurred in our understanding of the meaning of development. Instead of being equated with economic growth, development is now seen as being linked with human development. In 1990, the United Nations Development Program ("UNDP") issued its first annual *Human Development Report,*[1] introducing the Human Development Index ("HDI"), which measured development not by income alone as traditional economists had done, but by indicators reflecting "life expectancy, literacy and command over the resources to enjoy a decent standard of living."[2] In his foreword to the report, then-Administrator of UNDP, William H. Draper III, stated:

> [W]e are rediscovering the essential truth that people must be at the center of all development. The purpose of development is to offer people more options. One of their options is access to income–not as an end in itself but as a means to acquiring human well-being. But there are other options as well, including long life, knowledge, political freedom, personal security, community participation and guaranteed human rights. People cannot be reduced to a single dimension as economic creatures. What makes them and the study of the development process fascinating is the entire spectrum through which human capabilities are expanded and utilized.[3]

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*This is an adapted version of my two presentations: 1) on a panel entitled *Sustainable Energy for All* at the Leonard v.B. Sutton conference on "Sustainable Development and Sustainable Energy" at the University of Denver Sturm College of Law on October 10, 2015; and 2) as the chair of a panel on *Sustainable Development as a "Grundnorm" of International Environmental Law & Policy* at the American Branch of the International Law Association's International Law Weekend conference, "Global Problems, Legal Solutions: Challenges for Contemporary International Lawyers," at Fordham Law School, New York, on November 7, 2015.

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1. U.N. Development Programme, Human Development Report 1990 (May 1, 1990), http://hdr.undp.org/sites/default/files/reports/219/hdr_1990_en_complete_nostats.pdf.

2. *Id.* at 1.

3. *Id.* at iii.

HDI continues to be a composite measure of indicators along the same three dimensions. For example, in the 2014 *Human Development Report*, the HDI is defined as "[a] composite index measuring average achievement in three basic dimensions of human development – a long and healthy life, knowledge and a decent standard of living."[4]

This focus on all aspects of peoples' well-being was aptly captured by Nobel Laureate Amartya Sen's perspective of development as freedom,[5] which embodies the concept of human choices, capabilities, freedoms, and empowerment. Meanwhile, in 1996, the Organization of Economic Cooperation and Development ("OECD") published a paper[6] suggesting a set of "International Development Goals," which formed the basis for the Millennium Development Goals ("MDGs"). Also pertinent is a declaration adopted by heads of State and Government at the U.N. Headquarters, the United Nations Millennium Declaration of September 2000,[7] which enumerates human development goals along with a few targets and a timeframe to measure progress. The world leaders' commitment to reducing extreme poverty by creating a new global partnership, and setting out a series of time-bound targets for the years 2000-2015 became known as the Millennium Development Goals ("MDGs"). As the MDGs expire at the end of 2015, the U.N. General Assembly adopted their successor, the Sustainable Development Goals ("SDGs"), in September 2015.[8]

A study of the process that created the MDGs and SDGs and their impact on various aspects of peoples' well-being will follow this introductory section. However, it is appropriate to discuss here the origin and evolution of sustainable development ("SD"), a concept that integrates economic, social, and environmental considerations into the development process and provides a framework for decision making aimed at ensuring human well-being. I have previously written on this topic[9] and hence will briefly recount the pertinent groundwork to provide a context for the discussion that follows this introductory section.

Almost three decades after World War II, in June 1972 world leaders met in Stockholm at the U.N. Conference on the Human Environment ("Stockholm Conference") to address the challenge posed by continuing environmental degradation.[10] Although the Stockholm Declaration adopted at the conference did

4. U.N. Development Programme, Human Development Report 2014, 163 (2014), http://hdr.undp.org/sites/default/files/hdr14-report-en-1.pdf.

5. *See generally* AMARTYA SEN, DEVELOPMENT AS FREEDOM (1999).

6. Org. for Economic Cooperation and Development [OECD], Development Assistance Committee, *Shaping the 21st Century: The Contribution of Development Co-operation* , at 1, (May 1996), http://www.oecd.org/dac/2508761.pdf.

7. G.A. Res. 55/2, U.N. Millennium Declaration, (Sept. 8, 2000) [hereinafter Millennium Declaration].

8. G.A. Res. 70/1, U.N. Sustainable Development Goals (Sept. 25, 2015).

9. *See* VED NANDA, *Sustainable Development*, *in* INTERNATIONAL ENERGY AND POVERTY: THE EMERGING CONTOURS 84 (Lakshman Guruswamy & Elizabeth Neville eds., 2016).

10. U.N. Conference on the Human Environment, *Report on the United Nations Conference on the Human Environment*, A/CONF.48/14/Rev.1, Chapter I (Jun. 16, 1972).

emphasize the importance of economic and social development,[11] the conference did not address the relationship between environment and development despite pervasive poverty in many countries. There was a sharp divide between the rich and the poor countries because, while the rich countries were primarily interested in environmental protection, the poor countries did not want development issues to be sacrificed at the altar of environment.[12] Regrettably, this divide still remains as a point of tension between the Global North and South; the pursuit of sustainable development reflects an effort to bridge the divide.

The term sustainable development was first used in a report by the International Union for the Conservation of Nature and Natural Resources ("IUCN") that explicitly linked conservation and development.[13] However, the term was popularized by the 1987 *Report of the World Commission on Environment and Development* ("Brundtland Commission"), which defined sustainable development by explaining that "[h]umanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs."[14] The Commission emphasized the linkage between the environment and development and the integration of economic and environmental considerations in decision-making.[15]

The next event that emphasized linking of environment and development was the "Earth Summit," the U.N. Conference on Environment and Development ("UNCED") in Rio de Janeiro in June 1992, which marked the 20th anniversary of the Stockholm Conference.[16] The *Rio Declaration on Environment and Development*[17] adopted at the conference clearly set the tone of a human-centered focus, as in Principle 1 it proclaimed that "[h]uman beings are at the center of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature."[18] Principle 5 of the Declaration focused on the eradication of world poverty as it called on all states and all people to "cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world."[19] A detailed action plan entitled Agenda 21[20] gave in-depth meaning to

11. *Id.* at Preamble, ¶ 6.

12. *Id.* at Chapter VIII, ¶ 44.

13. INT'L UNION FOR THE CONSERVATION OF NATURE AND NAT. RES., WORLD CONSERVATION STRATEGY: LIVING RESOURCE CONSERVATION FOR SUSTAINABLE DEVELOPMENT, at IV (1980).

14. Chairman of the World Comm'n on Env't and Dev., *Rep. of the World Commission on Environment and Development: Our Common Future*, § I ¶ 27, U.N. Doc. A/42/427, Annex (Aug. 4, 1987).

15. *Id.* at ch. 1, ¶ 42.

16. *U.N. Conference on Environment and Development*, UN.ORG (May 23, 1997), http://www.un.org/geninfo/bp/enviro.html.

17. U.N. Conference on Environment and Development, *Rio Declaration on Environment and Development*, at 1, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), annex I (Aug. 12, 1992).

18. *Id.* at 1.

19. *Id.* at 2.

sustainable development as it placed high priority on the links between poverty reduction, economic efficiency, and environmental management.

A decade after the Rio Conference, world leaders met in Johannesburg for the World Summit on Sustainable Development in August-September 2002.[21] They adopted the *Johannesburg Declaration on Sustainable Development* as well as a "Plan of Implementation" that strongly reaffirmed their commitment to the principles adopted at the Earth Summit ("the Rio Principles") and the full implementation of Agenda 21.[22] Then, in 2012, twenty years after the Rio Conference, world leaders again met in Rio de Janeiro at the United Nations Conference on Sustainable Development[23] to adopt the successor to the MDGs, the Sustainable Development Goals.[24] The final report of the Conference, the Outcome Document, is entitled "The Future We Want."[25] And finally, on September 25, 2015, the U.N. Summit adopted Sustainable Development Goals (SDGs) in the Summit's outcome document, "Transforming Our World: 2030 Agenda for Sustainable Development."[26]

Part II recounts selected highlights of the journey from MDGs to SDGs. Part III provides a bird's-eye view of SDGs with special attention to human rights. Part IV is the concluding section.

II. FROM MILLENNIUM DEVELOPMENT GOALS TO SUSTAINABLE DEVELOPMENT GOALS

A. The U.N. Millennium Declaration

After reaffirming in the United Nations Millennium Declaration the fundamental values of freedom, equality, solidarity, tolerance, respect for nature, and shared responsibility,[27] world leaders recognized the need for advancing on several fronts: development and poverty eradication;[28] environmental protection;[29] human rights; democracy; and good governance.[30] They resolved that they "will spare no effort to free our fellow men, women and children from the abject and dehumanizing conditions of extreme poverty, to which more than a billion of them

20. U.N. Conference on Environment and Development, *Agenda 21*, U.N. Doc. A/CONF. 151/26, Annex II (Aug. 12, 1992).

21. The World Summit on Sustainable Development, *Johannesburg Declaration on Sustainable Development*, U.N. Doc. A/CONF.199/20, Annex I (Sept. 4, 2002).

22. The World Summit on Sustainable Development, *Rep. of the World Summit of Sustainable Development*, at 8, U.N. Doc. A/CONF.199/20 (Sept. 4, 2002).

23. U.N. Conference on Sustainable Development, *Report of the Conference on Sustainable Development*, U.N. Doc. A/CONF.216/16 (Jun. 22, 2012).

24. *A New Sustainable Development Agenda*, UNDP, http://www.undp.org/content/undp/en/home/mdgoverview.html (last visited Mar. 3, 2016).

25. G.A. Res. 66/288, Annex, The Future We Want (Jul. 27, 2012).

26. G.A. Res. 70/1, Transforming Our World: 2030 Agenda for Sustainable Development (Sept. 25, 2015).

27. Millennium Declaration, *supra* note 7, § I, ¶ 6.

28. *Id.* § III.

29. *Id.* § IV.

30. *Id.* § V.

are currently subjected."[31] Thus they resolved "to create an environment—at the national and global levels alike—which is conducive to development and to the elimination of poverty."[32]

World leaders further resolved that by the year 2015, "children everywhere, boys and girls alike, will be able to complete a full course of primary schooling and that girls and boys will have equal access to all levels of education."[33] By the same time, they resolved "to have reduced maternal mortality by three quarters, and under-five child mortality by two thirds, of their current rates," [34] and to have "halted, and begun to reverse, the spread of HIV/AIDS, the scourge of malaria and other major diseases that afflict humanity."[35] They also resolved to "promote gender equality and the empowerment of women as effective ways to combat poverty, hunger and disease and to stimulate development that is truly sustainable."[36]

B. The Millennium Development Goals

The MDGs were designed to reflect the Millennium Declaration vision. But when they were finally released something had been lost in translation, as there was a glaring omission of an important component of the Declaration – human rights, democracy, and good governance. As later discussion will show, the lack of a human rights focus in the MDGs has led to severe adverse consequences.

Eight goals with eighteen time-bound targets and forty-eight indicators for quantifiable commitments to be reached by 2015 constitute the MDG framework for securing selected socioeconomic rights.[37] These goals are: (1) eradicate extreme poverty and hunger – halve between 1990 and 2015 the proportion of people suffering hunger and living on less than U.S. $1.25 per day; (2) achieve universal primary education; (3) promote gender equality and empower women; (4) reduce child mortality; (5) improve maternal health – reduce by three-quarters the maternal mortality ratio; (6) combat HIV/AIDS, malaria, and other diseases; (7) ensure environmental sustainability; and (8) create a global partnership for development.[38] The targets are set to measure progress in each of these areas. As global partners, the donor countries have made commitments regarding aid, trade,

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31. *Id.* § III, ¶ 11.
32. *Id.* § III, ¶ 12.
33. *Id.* § III, ¶ 19.
34. *Id.*
35. *Id.*
36. *Id.* ¶ 20.
37. U.N. System Task Team on the Post-2015 U.N. Development Agenda, Discussion Note, Review of the contributions of the MDG Agenda to foster development: Lessons for the post-2015 UN development agenda, at 3 (Mar. 2012), http://www.un.org/en/development/desa/policy/untaskteam_undf/mdg_assessment.pdf.
38. Dep't. of Econ. and Soc. Affairs of the U.N. Secretariat, The Millennium Development Goals Report 2015, at . 4-7 (2015) [hereinafter 2015 MDGs Report], http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf.

debt relief, technology transfer, and access to essential medicines.[39]

Efforts to seek wider support worldwide for meeting the MDGs began in earnest in 2002 with the U.N. Millennium Campaign[40] and the U.N. Millennium Project.[41] The Campaign extensively used the media, especially videos on poverty, education, women's empowerment, and maternal health, and the environment.[42] The then-U.N. Secretary-General Kofi Annan commissioned the Millennium Project to develop a concrete action plan to achieve the MDGs with a special focus on reversing poverty, hunger, and disease.[43] The outcome was a set of recommendations for action in a synthesis study in 2005[44] by Professor Jeffrey Sachs, head of the independent advisory body. Subsequently, a Secretariat team worked to support the implementation of the Project's recommendations, especially in support of developing countries' preparation of national development strategies aligned with achieving the MDGs.[45]

Among other efforts toward achieving the MDGs, governments, foundations, businesses, and civil society groups announced about $16 billion in new commitments at a high-level event at U.N. Headquarters in September 2008.[46] The President of the General Assembly also announced at that time that an MDG summit would be convened in 2010.[47] Subsequently at that 2010 MDG Summit, world leaders agreed on a global action plan, "Keeping the Promise: United to Achieve the Millennium Development Goals," in the Summit Outcome Document.[48]

States explicitly recognized the importance of all human rights for achieving the MDGs,[49] and while identifying successful policies and approaches for

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39. U.N. System Task Team on the Post-2015 Development Agenda, Rep. of the U.N. System Task Team on the Post-2015 U.N. Development Agenda, Frequently Asked Questions, at 1 (2015), http://www.un.org/en/development/desa/policy/untaskteam_undf/faqs.pdf.

40. *About: UN Millennium Campaign*, END POVERTY 2015, http://www.endpoverty2015.org/about/ (last visited Feb. 6, 2016).

41. UN MILLENNIUM PROJECT, www.unmillenniumproject.org (last visited Mar. 3, 2016).

42. *See MDG Success Stories: UN Millennium Campaign*, END POVERTY 2015, http://www.endpoverty2015.org/about/ (last visited Feb. 6, 2016); *see also Press: UN Millennium Campaign*, END POVERTY 2015, http://www.endpoverty2015.org/about/ (last visited Feb. 6, 2016).

43. UN MILLENNIUM PROJECT, *supra* note 41.

44. JEFFREY D. SACHS, THE END OF POVERTY: ECONOMIC POSSIBILITIES FOR OUR TIME 1 (2005).

45. UN MILLENNIUM PROJECT, *supra* note 41.

46. Press Release, General Council, At Conclusion of High-Level Event on Millennium Development Goals, General Assembly President Backs Secretary-General's Proposal for Review Meeting, U.N. Press Release GA/10752 (Sept. 25, 2008); *see generally* U.N. Secretary-General, High-Level Event on the Millennium Development Goals 25 September 2008: Committing to Action: Achieving the Millennium Development Goals: Background Note by the Secretary-General (July 25, 2008), http://www.un.org/millenniumgoals/2008highlevel/pdf/commiting.pdf.

47. U.N. Press Release GA/10752, *supra* note 46.

48. G.A. Res. 65/1, Keeping the Promise: United to Achieve the Millennium Development Goals, (Oct. 19, 2010) [hereinafter Summit Outcome Document]. For a detailed analysis of the Summit Outcome Document, *see* Mac Darrow, *The Millennium Development Goals: Milestones or Millstones? Human Rights Priorities for the Post-2015 Development Agenda*, 15 YALE HUM. RTS. & DEV. L.J. 55, 73-105 (2012).

49. Summit Outcome Document, *supra* note 48, ¶ 3.

implementing and achieving the MDGs, they noted the importance of "[r]especting, promoting and protecting all human rights . . . [i]ncreasing efforts to reduce inequality and eliminate social exclusion and discrimination; [and] [e]nhancing opportunities for women and girls and advancing the economic, legal and political empowerment of women[.]"[50]

A number of initiatives to combat poverty, hunger, and disease were also announced at that event, with an emphasis on accelerating progress on women's and children's health; and pledges for more than $40 billion were made by a number of heads of State and Government, along with the private sector, foundations, international organizations, civil society, and research organizations.[51]

Finally, on September 23, 2013, the Secretary-General hosted a high-level forum focusing on "concrete examples of scaling up success and identifying further opportunities" to "catalyze and accelerate further action to achieve the Millennium Development Goals (MDGs)[.]"[52] More financial commitments were made on the occasion.[53]

In conjunction with this event, another special event was called to follow up on the efforts made toward achieving the MDGs, at which world leaders considered Secretary-General Ban Ki-moon's report to the Member States, entitled "A Life of Dignity for All."[54] The report took stock of the pace of implementation of the MDGs and identified policies and programs that had proven effective toward achieving the goals.[55] These included emphasizing inclusive economic growth with decent employment and decent wages, allocating more resources for essential services, and strengthening political will.[56] In the outcome document, world leaders renewed their commitment to the MDGs and agreed to hold a high-level summit in September 2015 to adopt the next phase of Goals that would build upon what the MDGs had accomplished.[57]

These concentrated efforts at all levels—global, regional, national, and local—were unprecedented. The pertinent question is: how far have they succeeded in achieving the MDGs? The outcome, as evidenced in *The Millennium Development Goals Report 2015*,[58] does show remarkable progress. But the gains have been uneven and the achievements in some areas have fallen short.

To illustrate, on Goal 1, halving extreme poverty, the proportion of the

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50. *Id.* ¶¶ 23(j)-(l).

51. *See* Explanatory Note on Matrix of Commitments and Initiatives, http://www.un.org/en/mdg/summit2010/pdf/MatrixExplanatoryNote12Nov2010rev.pdf.

52. We Can End Poverty: Millennium Development Goals and Beyond 2015, UN.ORG, http://www.un.org/millenniumgoals/mdgpartner.shtml (last visited Mar. 3, 2016).

53. *Id.*

54. *See generally* U.N. Secretary-General, *A Life Of Dignity For All: Accelerating Progress Towards The Millennium Development Goals And Advancing The United Nations Development Agenda Beyond 2015*, U.N. Doc. A/68/202 (July 26, 2013).

55. *Id.* at 1.

56. *Id.* § II(B), ¶¶ 33-53.

57. *See* G.A. Res. 68/3, (Jan. 28, 2014).

58. 2015 MDGs Report, *supra* note 38.

population in the developing world living on less than $1.25 per day has dropped from forty-seven percent in 1990 to fourteen percent in 2015, as has the proportion of undernourished people in the developing region fallen from 23.3 percent in 1990-1992 to 12.9 percent in 2014-2016.[59] It should be noted that in the global reduction of poverty, China and India played a central role.[60] Contrasted with the progress in these two countries, more than 40 percent of the population in sub-Saharan Africa still suffers from extreme poverty in 2015 and the extreme poverty rate is even expected to increase in Western Asia between 2011 and 2015.[61] On Goal 2, achieving universal primary education, in the developing regions the primary school net enrollment rate has risen from eighty-three percent in 2000 to ninety-one percent in 2015, and a similar outcome applies to the global literacy rate among youth aged fifteen to twenty-four.[62]

On Goal 3, promoting gender equality and empowering women, the target set to eliminate gender disparity in primary, secondary, and tertiary education has been achieved in the developing regions as a whole, while in Southern Asia 103 girls are enrolled in primary school for every 100 boys, as compared with seventy-four girls for every 100 boys in 1990, and ninety percent of countries have more women in parliament since 1995.[63] On Goal 4, reducing child mortality, the global under-five mortality rate has dropped from ninety deaths per thousand live births in 1990 to forty-three deaths in 2015.[64] And, despite population growth in the developing regions, there is a decline in the global number of deaths of children under five from 12.7 million in 1990 to 6 million in 2015.[65]

On Goal 5, improving maternal health, the maternal mortality rate worldwide has declined by forty-five percent, with most of the direction having occurred since 2000; the rate is sixty-four percent in Southern Asia and forty-nine percent in sub-Saharan Africa. The rate of contraceptive use among women aged fifteen to forty-nine worldwide from fifty-five percent in 1990 to sixty-four percent in 2015.[66] On Goal 6, combating HIV/AIDS, malaria, and other diseases, between 2000 and 2013 new HIV infections fell by approximately forty percent, while globally only 800,000 living with HIV in 2003 were receiving anti-retroviral therapy ("ART"). This number increased to 13.6 million in June 2014[67] and the malaria incidence rate has fallen by about thirty-seven percent and the mortality rate by fifty-eight percent. The rate of mortality from tuberculosis fell by forty-five percent and the prevalence by forty-one percent between 1990 and 2013.[68]

On Goal 7—ensuring environmental sustainability—147 countries have met

59. *Id.* at 4.
60. *Id.* at 15.
61. *Id.*
62. *Id.* at 24.
63. *Id.* at 5.
64. *Id.*
65. *Id.*
66. *Id.* at 6.
67. *Id.*
68. *Id.*

the drinking water target, ninety-five countries have met the sanitation target, and seventy-seven countries have met both, which amounts to the rate of global population using an improved drinking water source increasing from seventy-six percent in 1990 to ninety-one percent in 2015.[69] In the developing regions the proportion of urban population living in slums fell to 29.7 percent in 2014 from 39.4 percent in 2000.[70] On Goal 8—developing a global partnership for development—official development assistance ("ODA") from developed countries reached $135.2 billion in 2014, increasing by sixty-six percent in real terms between 2000 and 2014.[71] In 2014, five countries—Denmark, Luxembourg, Norway, Sweden, and the United Kingdom—continued to exceed the U.N.'s ODA target of 0.7 percent of gross national income.[72] From 738 million people subscribing to mobile-cellular service in 2000, the number has increased to over 7 billion in 2015, a growth of almost ten-fold during this time, while Internet penetration has grown to forty-three percent in 2015 from just over six percent of the world's population in 2000.[73]

The Report, however, shows that notwithstanding these successes the poorest and most vulnerable people are left behind. It acknowledges that although significant achievements have been made on many of the MDG targets worldwide, progress has been uneven across regions and countries, leaving significant gaps. Millions of people are being left behind, especially the poorest and those disadvantaged because of their sex, age, disability, ethnicity, or geographic location.[74] The Report also noted the persistent presence of gender inequality and the huge gaps that exist between the poorest and richest households and between rural and urban areas.[75]

The Report's conclusions provide a sobering reflection on the enormity of the challenges facing the world community as it strives to implement the newly established Sustainable Development Goals: about 800 million people still suffer from extreme poverty and hunger; because of malnourishment, more than 160 million children under age five have inadequate height for their age; 57 million children of primary school age do not go to school; about 16,000 children under five die each day; the maternal mortality ratio in developing countries is fourteen times higher than in the developed countries; just fifty percent of pregnant women in developing countries receive the recommended minimum of four ante-natal care visits; in 2013 about 36 percent of the 31.5 million people living with HIV in developing countries were receiving ART; almost half of workers globally still work in vulnerable conditions; 2.4 billion people still use unimproved sanitation facilities in 2015; and over 880 million people in the developing world are still

69. *Id.* at 7.
70. *Id.*
71. *Id.*
72. *Id.*
73. *Id.*
74. *Id.* at 8.
75. *Id.*

living in slum-like conditions.[76]

C. Appraisal of the MDGs

The lack of transparency in the formulation of the MDGs was one of their shortcomings, for a group of staff members from the U.N., International Monetary Fund, World Bank, and OECD were responsible for the drafting process without any broader participation, especially from civil society.[77] Thus it was that the MDGs originated in obscurity and lacked a human rights focus, for which they have faced major criticism.[78] As mentioned earlier, this has led to adverse consequences insofar as the progress has not been more inclusive and equitable.

Ahead of the special event at the U.N. in September 2013 to review progress on the MDGs and to set out a successor 15-year plan to achieve sustainable development after 2015 when the MDGs expire, the then-secretary-general of Amnesty International, Salil Shetty, aptly voiced his criticism:

> The poorest, most disadvantaged and marginalised groups are being let down. Governmental drives to meet targets often ride rough-shod over basic human rights. . . . People are being left behind. Governments need to stop paying lip service to human rights and make it central to the sustainable development agenda; otherwise targets are being achieved at the expense [of] deepening inequalities, discrimination and injustice. There is a widening gap between rich and poor and between men and women and those from minority groups.[79]

Shetty added:

> Where is the remedy for the millions of women who continue to suffer and, in many cases, die needlessly during pregnancy and childbirth because discrimination and a range of socio-economic barriers prevent them accessing sexual and reproductive health services? Maternal health is a human right. Any development agenda agreed by world leaders cannot leave the poorest, most marginalised and excluded people behind. Unless world leaders commit to placing human rights at the heart of the development agenda, we cannot achieve real change. It is time for world leaders to deliver.[80]

The organization cited data from the United Nations Development Program to show that, while there was a strong possibility that Nigeria would meet many of the MDG targets by 2015, these figures "mask[ed] regional differences and inequalities and disparities between various groups and minorities."[81]

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76. *Id.* at 8-9.

77. *See* U.N. System Task Team on the Post-2015 U.N. Development Agenda, *supra* note 37.

78. *Id.* at 8.

79. *UN Millennium Development Goals: Human Rights Must Not Be Marginalized In Post-2015 Agenda* AMNESTY INT'L (Sept. 23, 2013), https://www.amnesty.org/en/latest/news/2013/09/un-millennium-development-goals-human-rights-must-not-be-marginalized-post-agenda/.

80. *Id.*

81. *Id.*

A human rights perspective in the MDG framework would have required countries to measure their progress in light of their human rights obligations under both treaty law and customary international law. Instead, the MDG framework's focus on statistical averages and aggregate numbers has resulted in scant attention being paid to the issues such as inequalities, disparities, discrimination, and injustice to which Shetty referred in the Amnesty International statement. The following review of a few specific MDGs illustrates this point.

Goal 1 is on the eradication of extreme poverty and hunger. This goal focused on the symptoms of poverty and failed to address the underlying causes.[82] Nor did the poverty standard address the severity and depth of poverty.[83] While the 2015 MDGs Report on the progress of Target 1.A, which calls for halving between 1990 and 2015 the proportion of people whose income is less than U.S. $1 per day, celebrates the decline of the number of people living in extreme poverty by more than half since 1990, it acknowledged that this was mainly due to progress in China and India.[84] It also acknowledged that over forty percent of people living in sub-Saharan Africa still suffer from extreme poverty in 2015 and in Western Asia the extreme poverty rate is expected to rise between 2011 and 2015.[85] Moreover, there is uneven distribution of extremely poor people across regions and countries – Southern Asia and sub-Saharan Africa are home to about eighty percent of the global total of extremely poor people.[86] And out of one billion such people, sixty percent lived in just five countries in 2011— India, Nigeria, China, Bangladesh, and the Democratic Republic of the Congo.[87] Similarly, there is uneven progress on Target 1.C, aimed at halving between 1990 and 2015 the proportion of people who suffer from hunger.[88] And halving the world's hunger obviously means that many would still be left behind.

Goal 2 is aimed at achieving universal primary education, and Target 2.A is designed to ensure that children everywhere will be able to complete a full course of primary education.[89] But the 2014 Report of the U.N. Commission on the Status of Women noted:

> [T]he lack of progress in closing gender gaps in access to, retention in and completion of secondary education, which has been shown to contribute more strongly than primary school attendance to the achievement of gender equality, the empowerment of women, and the human rights of women and girls and several positive social and economic outcomes.[90]

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82. *See* 2015 MDGs Report, *supra* note 38, at 14-23.

83. *Id.*

84. *Id.* at 14-15.

85. *Id.* at 15.

86. *Id.*

87. *Id.*

88. *Id.* at 20.

89. *Id.* at 24.

90. Comm'n on the Status of Women, Challenges and Achievements in the Implementation of the Millennium Development Goals for Women and Girls, ¶ 20, U.N. Doc. E/CN.6/2014/L.7 (2014)

The MDGs Report shows that sub-Saharan Africa still remains an exception to other regions where the Target is close to being reached.[91] Also, the Report shows that there are large disparities in primary school enrollment and those who bear the heaviest burden are the poorest and most disadvantaged.[92]

On Goal 3—promoting gender equality and empowering women—the results are mixed, as gender disparities continue in enrollment ratios and only one developing region—Western Asia—is achieving the Target.[93] Also, female participation in the labor force is one-quarter to one-third of the men's rate in Northern Africa, Southern Asia, and Western Asia.[94] According to the Commission on the Status of Women, "almost 15 years after the Millennium Development Goals were adopted, no country has achieved equality for women and girls and significant levels of inequality between women and men persist . . . ."[95] The Commission also reported that:

> [P]rogress has been slow, with persistent gender disparities in some regions in secondary and tertiary education enrollment; the lack of economic empowerment, autonomy and independence for women, including a lack of integration into the formal economy, unequal access to full and productive employment and decent work, . . . and the lack of equal pay for equal work or work of equal value . . . .[96]

One striking omission in the MDGs was the failure to pay attention to the persistent issue of violence against women.

On Goal 4—reducing child mortality—the Commission on the Status of Women noted that "targets are likely to be missed."[97] It further noted

> with deep concern that increasingly, child deaths are concentrated in the poorest regions and in the first month of life, and further expresse[d] concern that children are at greater risk of dying before the age of 5 if they are born in rural and remote areas or to poor households.[98]

Goal 5—on maternal health—has Target 5.A, aimed at reducing by three quarters between 1990 and 2015 the maternal mortality ratio.[99] The MDGs Report shows that this ratio has dropped by forty-five percent worldwide during that time period from 1990-2013.[100] But it is noteworthy that the maternal mortality ratio in the developing regions is about fourteen times higher than in the developed regions; sub-Saharan Africa and Southern Asia accounted for eighty-six percent of

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[hereinafter Status of Women Report].

91. 2015 MDGs Report, *supra* note 38, at 25.
92. *Id.* at 26.
93. *Id.* at 29.
94. *Id.* at 30.
95. Status of Women Report, *supra* note 90, ¶ 12.
96. *Id.* ¶ 21.
97. *Id.* ¶ 22.
98. *Id.*
99. 2015 MDGs Report, *supra* note 58, at 38.
100. *Id.* at 39.

such deaths globally in 2013.[101] On access to and use of reproductive health services, the Report shows profound inequalities within and across regions and between rural and urban coverage. And the Report acknowledges that improving maternal health constitutes the unfinished agenda for the post-2015 period.[102] The Commission on the Status of Women also noted that "progress towards its two targets, reducing maternal mortality and achieving universal access to reproductive health, has been particularly slow and uneven, especially for the poorest and rural sectors of the populations, within and across countries."[103]

Goal 8—on a global partnership for development—lacks any time-bound and quantifiable targets.[104] Thus, no country or donor organization can be held accountable for failure to provide assistance to developing countries for the reduction of poverty.

It is worth noting that as there was no integration of human rights and development frameworks in the MDGs, persons with disabilities, minorities, disadvantaged, and marginalized populations, indigenous peoples, and vulnerable groups cannot claim a right under the MDGs to be fairly treated in an equitable and non-discriminatory way. Also, civil and political rights such as freedom of expression and participation found no place in the MDGs.

In sum, while there has been substantial progress in achieving the MDGs, significant disparities and gaps remain, with the unfinished agenda left for the successor SDGs.

D. The Post-2015 Development Agenda and the Sustainable Development Goals

In addition to stock-taking by states on the progress toward achieving the MDGs, world leaders were concerned about charting the future course for achieving sustainable development beyond 2015, the expiration period for the MDGs. Thus, two years after the 2010 MDG Summit discussed above, world leaders met at the U.N. Conference on Sustainable Development at Rio de Janeiro, Brazil, in June 2012 ("Rio+20") and endorsed the Conference's Outcome Document, entitled "The Future We Want."[105] After renewing their commitment "to sustainable development and to ensuring the promotion of an economically, socially and environmentally sustainable future for our planet and for present and future generations,"[106] they focused on poverty eradication, emphasizing "the need to accord the highest priority to poverty eradication within the United Nations development agenda, addressing the root causes and challenges of poverty through integrated, coordinated and coherent strategies at all levels."[107]

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101. *Id.*
102. *Id.* at 43.
103. Status of Women Report, *supra* note 90, ¶ 23.
104. 2015 MDGs Report, *supra* note 58, at 62-68.
105. G.A. Res. 66/288, U.N. Doc. A/RES/66/288 (Sept. 11, 2012).
106. *Id.* at annex, ¶ 1.
107. *Id.* at annex, ¶ 106.

World leaders acknowledged that since 1992 there had been "areas of insufficient progress and setbacks in the integration of the three dimensions of sustainable development"[108] – economic development, social development, and environmental protection. They recognized that people are at the center of sustainable development[109] and renewed their commitment to "assessing the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development and addressing new and emerging challenges."[110] They also resolved to establish an intergovernmental process on SDGs and mandated the establishment of an open working group to develop a set of sustainable development goals for appropriate action by the General Assembly at its 68th Session.[111] They also mandated that the SDGs be coherent and integrated into the U.N. post-2015 development agenda.[112]

To review a few other selected developments leading to the establishment of the SDGs, in July 2013 the U.N. Secretary-General submitted a report on progress in the implementation of the MDGs, entitled "A life of dignity for all,"[113] in which he made recommendations for further steps to advance the U.N. development agenda beyond 2015. He highlighted the link between peace, development, and human rights and recommended that the sustainable development agenda be universal, based on human rights, and address economic growth, social justice, and environmental challenges.[114] He also called for a review and a comprehensive monitoring framework, which would require new and disaggregated data and measurable goals and targets.[115]

One of the Secretary-General's initiatives to promote sustainable development was his launching of the Sustainable Development Solutions Network ("SDSN") in 2012 to mobilize global scientific and technological knowledge on the challenges of sustainable development, which issued a report in October 2013 entitled "An Action Agenda for Sustainable Development."[116] The report addressed the sustainable development concept in what it called "four dimensions of society: economic development (including the end of extreme poverty), social inclusion, environmental sustainability, and good governance including peace and security."[117] The report identified selected priority sustainable development

108. *Id.* at annex, ¶ 20.

109. *Id.* at annex, ¶ 6.

110. *Id.* at annex, ¶ 12.

111. *Id.* at annex, ¶ 248.

112. *Id.* at annex, ¶ 249.

113. U.N. Secretary-General, *A life of dignity for all: accelerating progress towards the Millennium Development Goals and advancing the United Nations development agenda beyond 2015*, U.N. Doc. A/68/202 (July 26, 2013).

114. *Id.* ¶¶ 73-104.

115. *Id.* ¶¶ 105-107.

116. Sustainable Development Solutions Network, *An Action Agenda for Sustainable Development: Report for the UN Secretary-General* (Oct. 23, 2013), http://www.cornerstone.com.my/sdsn/index.cfm?&menuid=38.

117. *Id.* at 1.

challenges to be addressed at the global, regional, national, and local levels.[118] SDSN issued another report in May 2014 under the same title—*An Action Agenda for Sustainable Development*[119]—in which it proposed sustainable development goals and targets.[120]

Secretary-General Ban Ki-moon also established a High-Level Panel of Eminent Persons on the Post-2015 Development Agenda, which presented its report in May 2013, "A New Global Partnership: Eradicate Poverty and Transform Economies Through Sustainable Development."[121] Among the report's recommendations were a list of priority transformations for a post-2015 agenda[122] and twelve universal goals and national targets.[123]

The Organization for Economic Cooperation and Development ("OECD") submitted two reports on the subject. The message of the first report, "Development Co-operation Report 2013: Ending Poverty,"[124] was that economic growth is not sufficient to eradicate all dimensions of poverty. It proposed, among other recommendations, that the new international development agenda must address causes of poverty and make environmental sustainability and natural resources a core priority.[125] The recommendations of the second report, "Gender equality and women's rights in the post-2015 agenda: A foundation for sustainable development,"[126] included a stand-alone goal on gender equality, as well as gender-specific targets across all goals.

In March 2013, the Open Working Group ("OWG") mandated by the Rio+20 started its working sessions and submitted its report in July 2014.[127] It had during that time received suggestions based upon the studies mentioned above, as well as from civil society, business, think tanks, colloquia, and conferences regarding the sustainable development goals for the post-2015 development agenda.[128]

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118. *Id.* at 8-26.

119. Sustainable Development Solutions Network, *An Action Agenda for Sustainable Development: Report for the UN Secretary-General* (May 5, 2014), http://unsdsn.org/wp-content/uploads/2013/06/140505-An-Action-Agenda-for-Sustainable-Development.pdf.

120. *Id.* at 28-31.

121. U.N. Secretary General's High Level Panel of Eminent Persons on the Post-2015 Development Agenda, *A New Global Partnership: Eradicate Poverty and Transform Economies Through Sustainable Development* (May 30, 2013), http://www.un.org/sg/management/pdf/HLP_P2015_Report.pdf.

122. *Id.* at 7-12.

123. *Id.* at 30-31.

124. Erik Solheim, OECD Dev. Assistance Comm., *Development Co-operation Report 2013: Ending Poverty* (Dec. 5, 2013), http://www.oecd-ilibrary.org/docserver/download/dcr-2013-sum-en.pdf?expires=1450215550&id=id&accname=guest&checksum=191F01F759877F9BB33D8F04CA1A9DA4.

125. *Id.* at 20.

126. OECD, *Gender equality and women's rights in the post-2015 agenda: A foundation for sustainable development* (2013), http://www.oecd.org/dac/gender-development/POST-2015%20Gender.pdf.

127. U.N. General Assembly, *Report of the Open Working Group of the General Assembly on Sustainable Development Goals*, U.N. Doc. A/68/970 (Aug. 12, 2014) [hereinafter *Report of the OWG*].

128. Ved P. Nanda, *Sustainable Development, in* INTERNATIONAL ENERGY AND POVERTY: THE

The OWG proposed seventeen SDGs accompanied by 169 targets which are to be "further elaborated through indicators focused on measurable outcomes."[129] These goals were "action oriented, global in nature and universally applicable . . . [and] take into account different national realities, capacities and levels of development and respect national policies and priorities."[130] Building on the foundation laid by the MDGs, they "[sought] to complete the unfinished business of the Millennium Development Goals and respond to new challenges. . . . [and] constitute an integrated, indivisible set of global priorities for sustainable development."[131] Each government was to set its own national targets, while targets were defined as aspirational global targets and, according to the report, "[t]he goals and targets integrate economic, social and environmental aspects and recognize their interlinkages in achieving sustainable development in all its dimensions."[132]

In September 2014, twenty-seven civil society groups from several countries sent a letter to Ban Ki-moon and the President of the General Assembly, Sam Kutesa, asserting that the post-2015 agenda "won't deliver without human rights at the core."[133] They suggested that a truly human rights-centered approach requires that human rights must be explicitly referenced to ensure that all goals and targets are aligned with the relevant human rights standards; that human rights should be considered in their entirety so that the full spectrum—both economic, social, and cultural rights and civil and political rights—is secured; that gender equality and women's rights should be embedded throughout the goals, targets, and indicators, along with robust, specific funding for women's rights and a guarantee of meaningful participation by women's rights groups in the implementation, monitoring, and accountability mechanisms.[134]

Second, they urged governments to use existing human rights standards as legally binding universal norms, and finally said it was essential that the agenda provide a "robust and inclusive mechanism or series of mechanisms to ensure human rights accountability of all development actors."[135]

Subsequently, the Secretary-General released his Synthesis Report on the post-2013 sustainable development agenda, entitled "The road to dignity by 2030: ending poverty, transforming all lives and protecting the planet."[136] Asserting that "[w]e have a shared responsibility to embark on a path to inclusive and shared

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EMERGING CONTOURS 84, 88 (Lakshman Guruswamy & Elizabeth Neville eds., 2016).

129. *Report of the OWG*, supra note 127, § IV, ¶ 18.

130. *Id.*

131. *Id.*

132. *Id.*

133. *The Post-2015 Agenda Won't Deliver Without Human Rights at the Core*, CENTER FOR ECON. & SOC. RTS. (Sept. 29, 2014).

134. *Id.*

135. *Id.*

136. U.N. Security-General, *Synthesis Report of the Secretary-General on the post-2015 sustainable development agenda, entitled the road to dignity by 2030: ending poverty, transforming all lives and protecting the planet*, U.N. Doc. A/69/700 and Corr. 1 (Dec. 4, 2014) [hereinafter *Synthesis Report*].

prosperity in a peaceful and resilient world, where human rights and the rule of law are upheld,"[137] and drawing from the lessons learned from the discussion of the post-2015 sustainable development agenda,[138] he stated:

> All voices have called for a people-centered and planet-sensitive agenda to ensure human dignity, equality, environmental stewardship, healthy economies, freedom from want and fear and a renewed global partnership for sustainable development. Tackling climate change and fostering sustainable development agendas are two mutually reinforcing sides of the same coin. To achieve these ends, all have called for a transformational and universal post-2015 sustainable development agenda, buttressed by science and evidence and built on the principles of human rights and the rule of law, equality and sustainability.[139]

The Secretary-General added that "[a]ll voices have demanded that we leave no one behind, ensuring equality, non-discrimination, equity and inclusion at all levels. We must pay special attention to the people, groups and countries most in need."[140] He particularly identified women, refugees and displaced persons, other vulnerable groups, and minorities.[141] The Secretary-General further added: "All voices have asked for a rigorous and participatory review and monitoring framework to hold Governments, businesses and international organizations accountable to the people for results, and to ensure that no harm is done to the planet."[142]

The Secretary-General provided six essential elements to help frame and reinforce the sustainable development agenda and to ensure delivery at the country level: (1) dignity – to end poverty and fight inequality; (2) people – to ensure healthy lives, knowledge and the inclusion of women and children; (3) prosperity – to grow a strong, inclusive and transformative economy; (4) planet – to protect our ecosystems for all societies and our children; (5) justice – to promote safe and peaceful societies and strong institutions; and (6) partnership – to catalyze global solidarity for sustainable development.[143]

The report recommended among the means for the implementation of an integrated sustainable development agenda a framework including financing, technology, and investments in sustainable development capacities.[144] The report also made recommendations regarding the framework to monitor and review implementation, based on the establishment of a comprehensive program of action on data.[145] The Secretary-General welcomed the work of the Open Working Group and took "positive note of the decision of the General Assembly that the

137. *Id.* ¶ 3.
138. *Id.* ¶¶ 36-47.
139. *Id.* ¶ 49.
140. *Id.* ¶ 51.
141. *Id.*
142. *Id.* ¶ 56.
143. *Id.* ¶¶ 66-81.
144. *Id.* ¶¶ 87-132.
145. *Id.* ¶¶ 140-150.

proposal of the Working Group be the main basis for the post-2015 intergovernmental process."[146]

The next step in the process was the General Assembly's adoption of a plan of action for "people, planet, and prosperity," and the announcement of the SDGs as the successor to the MDGs, which expire at the end of 2015. This topic is covered in the following section.

III. THE SUSTAINABLE DEVELOPMENT GOALS – A VAST IMPROVEMENT OVER THE MDGS

A. The Process of Developing the SDGs

The process of developing the SDGs shows a striking difference as contrasted with that of the MDGs. Instead of being formulated by the staff of the U.N. and a few other international organizations that had developed the MDGs, there was outreach, transparency, and openness in the creation of the SDGs.[147] The U.N. outreach for consultation and review was historic and unprecedented. The Secretary-General summarized these efforts in his Synthesis Report, as he noted that there were "valuable inputs" from a wide range of groups.[148] He reported that people around the world shared their views through the outreach efforts of organized civil society groups and also through the global conversation led by the United Nations development group on "A Million Voices: The World We Want,"[149] "Delivering the Post-2015 Agenda: Opportunities at the National and Local Levels,"[150] and the "My World" survey.[151] Millions of people, especially young persons, took part in these processes through national, thematic, and online consultations and surveys as mirrored in the "Global Youth Call"[152] and the outcome of the Sixty-Fifth Annual United Nations Department of Public Information/Non-governmental Organizations Conference.[153] The direct and

146. *Id.* ¶ 59.

147. *See* U.N. Development Group, *A Million Voices: The World We Want* (2013), 3-5 https://issuu.com/undevelopmentgroup/docs/f_undg_millionvoices_web_full?download [hereinafter *The World We Want*].

148. Synthesis Report, *supra* 136, ¶ 37.

149. *The World We Want*, *supra* note 147.

150. U.N. Development Group, *Delivering the Post-2015 Agenda: Opportunities at the National and Local Levels* (2014), http://www.ipu.org/splz-e/unga14/post2015.pdf.

151. MY WORLD SURVEY 2015, Data Overview, http://data.myworld2015.org (last visited Feb. 23, 2016).

152. *See* Office of the Secretary-General's Envoy on Youth, *Secretary-General's Envoy invites all youth organizations to endorse Global call on youth in post-2015 ahead of ECOSOC Forum*, UNITED NATIONS, http://www.un.org/youthenvoy/2014/05/secretary-generals-envoy-invites-all-youth-organisations-to-endorse-global-call-on-youth-in-post-2015-ahead-of-ecosoc-forum/ (last visited Apr. 20, 2016); GLOBAL YOUTH CALL, http://www.un.org/youthenvoy/wp-content/uploads/2014/09/The_Global_Youth_Call.pdf (last visited Feb. 23, 2016).

153. *See* ECOSOC Civil Society Network, *65th Annual UN DPI/NGO Conference: UNHQ Complex, New York 27-29 August, 2014*, UNITED NATIONS, http://esango.un.org/irene/?page=viewContent&nr=24104&type=8&section=8 (last visited Apr. 20, 2016); 65th Annual DPI/NGO Conference Outcome Document, 5

active engagement of parliamentarians, business and civil society has also been critical.[154]

Next, the Secretary-General mentioned the inputs of the experts groups that he had established and those of academics and scientists, businesses, regional commissions, and the United Nations system, along with those of Member States through various avenues.[155]

A few selected studies that informed the eventual development of the SDGs have already been noted above.[156] However, to highlight a couple of civil society efforts in outreaching, there was a broad public survey entitled *A Million Voices: The World We Want*,[157] that conveyed the priorities of people around the world. Similarly, a report entitled *Civil Society Demands for the Post-2015 Development Agenda from 39 Countries*[158] made several recommendations to be given priority in development of the SDGs.[159]

B. The Content of the SDGs

As to the content, world leaders at the U.N. special summit in September 2015 embraced an ambitious plan of action entitled "Transforming our world: the 2030 Agenda for Sustainable Development."[160] This is a comprehensive package—a set of seventeen goals and 169 targets—to end poverty, reduce inequalities, and protect the environment, which came into effect on January 21, 2016, replacing the MDGs.[161] Building on the MDGs, the leaders' "new universal Agenda" applies to all countries, contrasted with the reach of the MDGs which was confined primarily to the developing countries.[162] The Agenda is aimed at realizing "the human rights of all and . . . achiev[ing] gender equality and the empowerment of all women and girls," and the SDGs are "integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental."[163]

In their *Declaration* introducing the plan, the World leaders pledge that "no one will be left behind," and that this "Agenda of unprecedented scope and

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http://outreach.un.org/ngorelations/files/2014/08/DPINGOOutcomeDoc-DeclarationFinal.pdf (last visited Apr. 20, 2016).

154. Synthesis Report, *supra* 136, ¶ 37(a).

155. *Id.* ¶¶ 37(b)-(g).

156. *See, e.g.*, Sustainable Solutions Development Network, *supra* note 116; OECD, *supra* note 124; The *World We Want*, supra note 147; U.N. Development Group, *supra* note 150.

157. *The World We Want*, *supra* note 147.

158. Beyond 2015, *Civil Society's Demands from 39 Countries* (August 1, 2013), http://www.beyond2015.org/civil-society-demands-post-2015-agenda.

159. Center for Economic and Social Rights, *The Post-2015 Agenda Won't Deliver Without Human Rights at the Core* (Sept. 29, 2014), http://cesr.org/article.php?id=1648.

160. *Transforming our world: the 2030 Agenda for Sustainable Development*, G.A. Res 70/1, U.N. Doc. A/RES/70/1 (Oct. 21, 2015), [hereinafter 2030 Agenda].

161. *Id.*; *see also The Sustainable Development Agenda*, UNITED NATIONS, http://www.un.org/sustainabledevelopment/development-agenda/ (last visited Apr. 20, 2016).

162. 2030 Agenda, *supra* note 160, at preamble.

163. *Id.*

significance," with its universal goals and targets, involves all countries.[164] They pay special attention to the vulnerable and disadvantaged, which was not the case under the MDGs. To illustrate, the *Declaration* provides:

> People who are vulnerable must be empowered. Those whose needs are reflected in the Agenda include all children, youth, persons with disabilities (of whom more than 80 percent live in poverty), people living with HIV/AIDS, older persons, indigenous peoples, refugees and internally displaced persons and migrants. We resolve to take further effective measures and actions, in conformity with international law, to remove obstacles and constraints, strengthen support and meet the special needs of people living in areas affected by complex humanitarian emergencies and in areas affected by terrorism.[165]

To rectify another omission in the MDGs—where instead of focusing on women's health rights the only reference was a maternal mortality goal and even a formal reproductive health target was only added after a great deal of advocacy effort—the *Declaration* reads:

> To promote physical and mental health and well-being, and to extend life expectancy for all, we must achieve universal health coverage and access to quality health care. No one must be left behind. We commit to accelerating the progress made to date in reducing newborn, child and maternal mortality by ending all such preventable deaths before 2030. We are committed to ensuring universal access to sexual and reproductive health-care services, including for family planning, information and education.[166]

The leaders also address income inequality, forced labor, human trafficking, and child labor in all its forms.[167] They call for changing unsustainable consumption and production patterns,[168] and pay special attention to climate change[169] as it has serious implications for development. They affirm that sustainable development is closely linked with peace and security:

> The new Agenda recognizes the need to build peaceful, just and inclusive societies that provide equal access to justice and that are based on respect for human rights (including the right to development), on effective rule of law and good governance at all levels and on transparent, effective and accountable institutions. Factors which give rise to violence, insecurity and injustice, such as inequality, corruption, poor governance and illicit financial and arms flows, are addressed in the Agenda. We must redouble our efforts to resolve or prevent conflict and to support post-conflict countries, including through ensuring that

164. *Id.* ¶¶ 4-5.
165. *Id.* ¶ 23.
166. *Id.* ¶ 26.
167. *Id.* ¶ 27.
168. *Id.* ¶ 28.
169. *Id.* ¶¶ 31-32.

women have a role in peacebuilding and State-building.[170]

They especially focus on means of implementation, discussing in detail the role of the U.N. development system, international financial institutions, official development assistance ("ODA"), governments and the private sector, paying special attention to landlocked developing countries.[171]

The leaders assert that "Governments have the primary responsibility for follow-up and review, at the national, regional and global levels,"[172] and they recognize how necessary it is to have access to reliable disaggregated data in order to measure progress.[173]

C. The SDGs

Finally, the world leaders accepted the goals proposed by the Open Working Group as the new Sustainable Development Goals. These goals are:

> Goal 1. End poverty in all its forms everywhere.
>
> Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
>
> Goal 3. Ensure healthy lives and promote well-being for all at all ages.
>
> Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
>
> Goal 5. Achieve gender equality and empower all women and girls.
>
> Goal 6. Ensure availability and sustainable management of water and sanitation for all.
>
> Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all.
>
> Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
>
> Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
>
> Goal 10. Reduce inequality within and among countries.
>
> Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable.
>
> Goal 12. Ensure sustainable consumption and production patterns.
>
> Goal 13. Take urgent action to combat climate change and its impacts.
>
> Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

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170. *Id.* ¶ 35.
171. *See id.* ¶¶ 39-46.
172. *Id.* ¶ 47.
173. *Id.* ¶ 48.

> Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
>
> Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
>
> Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.[174]

D. Analysis

Even a brief look at the SDGs shows that they do reflect universality. For example, Goal 1, on ending poverty in all its forms everywhere, demonstrates that it is not confined primarily to developing countries, as was the case with the MDGs.[175] Also, the goals emphasize the need to pay special attention to the poor and vulnerable. For example, the Targets on Goals 1 and 2, on ending poverty and hunger, refer particularly to the poor and those in vulnerable situations.[176]

In marked contrast to the MDGs, Target 3.7 in Goal 3 of the SDGs reads: "By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes."[177] Under Goal 4, on quality education and learning opportunities for all, Target 4.1 calls for ensuring by 2030 that "all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes."[178]

In several instances where the MDGs were either silent or vague, the SDGs show a markedly different picture, as the following few examples illustrate.

Under Goal 5—achieve gender equality and empowerment for all women and girls—the Targets call for ending all forms of discrimination against all women and girls everywhere, eliminating "all forms of violence against all women and girls in the public and private spheres," and eliminating "all harmful practices, such as child, early and forced marriage and female genital mutilation."[179]

Target 6.1 calls for achieving "universal and equitable access to safe and affordable drinking water for all."[180] Goal 7 is a new addition in the SDGs: ensure access to affordable, reliable, sustainable and modern energy for all.[181] Goal 8 calls for promoting "sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all."[182] Under Goal 10—reduce

174. *Id.* at 14.
175. *See id.* (Goal 1).
176. *Id.* at 15-16 (*see* Targets on Goals 1 and 2).
177. *Id.* at 16 (*see* Target 3.7).
178. *Id.* at 17 (*see* Target 4.1).
179. *Id.* at 18 (*see* Targets 5.1-5.3).
180. *Id.* at 18 (*see* Target 6.1).
181. *Id.* at 14 (*see* Goal 7).
182. *Id.* (*see* Goal 8).

inequality within and among countries—Target 10.2 calls for empowering and promoting "the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin and religion or economic or other status."[183] Target 13.2 calls for the integration of "climate change measures into national policies, strategies and planning;" and 13.3 calls for improving "education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning."[184]

Under Goal 16, on promoting peaceful and inclusive societies, providing access to justice for all, and building effective, accountable and inclusive institutions at all levels.[185] Target 16.3 appropriately calls for promoting the rule of law at both the national and international levels and ensuring equal access to justice for all, while Target 16.7 is designed to ensure "responsive, inclusive, participatory and representative decision-making at all levels," and Target 16.8 calls for broadening and strengthening the developing countries' participation in the institutions of global governance.[186]

Goal 17 on global partnership and implementation is much more detailed than the corresponding provision in the MDGs.[187] Here, the targets discuss finance, technology, capacity building, trade, and several systemic issues such as policy and institutional coherence, multi-stakeholder partnerships, and data, monitoring, and accountability. Earlier, in July 2015, at the Third International Conference on Financing for Development in Addis Ababa, Ethiopia, the Heads of State and Government had adopted the Addis Ababa Action Agenda,[188] which was subsequently endorsed by the General Assembly, and on which Goal 17 is based.

The indicators to measure progress on the achievement of the SDGs and the follow-up and review mechanisms are still under consideration and will be finalized in 2016.[189]

After conducting a scientific review of the SDGs and the targets, the International Council for Science and the International Social Science Council issued a report, *Review of Targets for the Sustainable Development Goals: The Science Perspective*.[190] According to the report, the SDGs offer major

183. *Id.* at 21 (*see* Target 10.2).

184. *Id.* at 23 (*see* Target 13.2 and 13.3).

185. *Id.* at 14 (*see* Goal 16).

186. *Id.* at 25 (*see* Targets 16.3, 16.7, 16.8).

187. Compare *id.* at 14 (*see* Goal 17) *with* Millennium Declaration, *supra* note 7, ¶¶ 29-30 (*see* Goal 8).

188. *Addis Ababa Action Agenda of the Third International Conference on Financing for Development*, G.A. Res. 69/313, U.N. Doc. A/RES/69/313 (July 27, 2015) [hereinafter *Addis Ababa Action Agenda*].

189. *See* Sustainable Development Goals, *IAEG-SDGs Inter-Agency Expert Group on SDG Indicators*, http://unstats.un.org/sdgs/iaeg-sdgs (the indicators will be finalized after the 3rd meeting of the IAEG-SDGs).

190. International Council for Science and International Social Science Council, *Review of Targets for the Sustainable Development Goals: The Science Perspective* (2015), http://www.icsu.org/publications/reports-and-reviews/review-of-targets-for-the-sustainable-development-goals-the-science-perspective-2015/SDG-Report.pdf.

improvements on the MDGs by addressing critical systemic barriers to sustainable development that the MDGs had neglected, such as environmental degradation, inequality, unsustainable consumption patterns, and weak institutional capacity.[191]

IV. CONCLUSION

In both the process and the content the SDGs go far beyond the MDGs. The process was broadly consultative, and the SDGs apply to everyone, everywhere. The lack of a human rights focus in the MDGs framework, which had received wide criticism, is corrected in the SDGs. This is especially acknowledged by the Danish Institute for Human Rights, which, after analyzing the SDGs, published its *Human Rights Guide* on the subject.[192] The *Guide* is designed at helping all those working for the realization of the Goals and for groups of people, such as persons with disabilities, whose rights the SDGs directly address. According to the chief adviser and the *Guide*'s co-author, Birgitte Feiring, "Our analysis shows that the SDGs stand on the shoulders of human rights. This provides support and ties the [G]oals to legally binding agreements."[193]

The SDGs are likely to galvanize worldwide support for their achievement. However, the indicators and the follow-up and review mechanisms, which have a bearing on both the national and international implementation, have yet to be finalized, and implementation indeed is the key to achieving the comprehensive and visionary agenda set by the SDGs. Humanity seeks and deserves fulfillment of the promise of sustainable development.

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191. *Id.* at 5.

192. Danish Institute for Human Rights, *The Human Rights Guide to the SDGs* (draft) (Nov. 2015), http://www.humanrights.dk/files/media/dokumenter/human_rights_and_development/human_rights_guide_to_sdgs/SDG-HR-Indicators%20full%20guide.pdf (shows the linkages between internationally recognized human rights instruments and the SDG targets and was prepared to ensuring a human-rights-based approach to the implementation of the SDGs).

193. Danish Institute for Human Rights, *The human rights guide to the SDGs has landed* (Nov. 16, 2015), http://www.humanrights.dk/news/human-rights-guide-sdgs-has-landed.

COMMUNITY DEVELOPMENT AGREEMENTS IN MINING PROJECTS

KRISTI DISNEY BRUCKNER*

I. INTRODUCTION

In a world where there is a limited quantity of nonrenewable mineral resources, a rapidly growing population, and an escalating demand for resources, the dynamics between mineral developers and communities are changing. While the need for developers to understand and address project impacts on communities is nothing new, the increasing demands of international and domestic law and policy frameworks; the advanced level of organization of communities on local and global levels to demand their rights; and the expanding company adoption of voluntary standards and commitments to communities has shifted the expectations of the company-community relationship. One outcome of these changing dynamics is the increased use of Community Development Agreements ("CDAs") between companies and communities that govern various aspects of the impacts and benefits of natural resource development projects.[1]

CDAs are a valuable tool for developing and maintaining positive company-community relationships through effective two-way communication and increased community participation throughout the life of a development project.[2] Parties use mechanisms established in one or more CDAs not only for improved communications and transparency, but also to avoid or mitigate negative project

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1. DAVID BRERETON ET AL., GOOD PRACTICE NOTE: COMMUNITY DEVELOPMENT AGREEMENTS 1 (2011), http://www.eisourcebook.org/cms/files/csrm_good_practice_notes_on_cdas_document_final_260911.pdf.

2. *Id.* at 5.

impacts, address grievances, and manage the distribution of benefits in a fair and equitable manner.[3] CDAs are increasingly viewed as an important mechanism for preventing and managing conflict in natural resource development.[4]

Section II of this article will discuss the growing demand for minerals that is driving mineral development. Section III will describe the importance of a "social license to operate"[5] and the costs of conflict to mineral developers. Section IV will discuss major international frameworks that relate to the company-community relationship. Section V will focus on trends in use, the agreement process, and content of CDAs. While this article will focus primarily on use of CDAs in mining projects, as they are increasingly common, CDAs are also prevalent in the agricultural sector and are applicable to other natural resource sectors.

II. GROWING DEMAND FOR MINERALS

The human species share a planet with limited nonrenewable mineral resources and seemingly limitless demand for those resources. As Earth's human population grows by the minute—currently in excess of 7.3 billion and expected to exceed 11 billion by 2100[6]—demand for the many mineral components required for housing, transportation, communications devices, and other goods ranging from necessities to luxury items is on the rise. In 2015, the Minerals Education Coalition ("MEC") estimated that every person in the United States uses 39,543 pounds of new minerals per year.[7] MEC also estimated that each person born in the United States will utilize *3.11 million* pounds of minerals, metals, and fuels over the span of his or her lifetime.[8] The lifetime estimated use of minerals is detailed in the table below.

Estimated Minerals Used in the Lifetime of One U.S. Baby Born in 2015[9]

Mineral Commodity	Amount Required Over a Lifetime
Aluminum (bauxite)	5,214 pounds

3. *Id.*

4. *Id.* at 4.

5. *See generally* THE WORLD BANK SUSTAINABLE ENERGY – OIL, GAS, AND MINING UNIT [SEGOM], MINING COMMUNITY DEVELOPMENT AGREEMENTS: SOURCE BOOK ix, SEGOM Doc. 71299, (Mar. 2012), https://openknowledge.worldbank.org/bitstream/handle/10986/12641/712990WP0minin00Box370065B00PUBLIC0.pdf?sequence=1&isAllowed=y [hereinafter MINING COMMUNITY DEVELOPMENT] (explaining that a social license to operate is obtained by gaining community support for a project).

6. *World Population Prospects: The 2015 Revision, Key Findings and Advance Tables* 2 (U.N. Dept. of Econ. & Soc. Affairs, Population Div., Working Paper No. ESA/P/WP.241, 2015), http://esa.un.org/unpd/wpp/publications/files/key_findings_wpp_2015.pdf.

7. *2015 Per Capita Use of Minerals*, MINERALS EDUC. COAL., https://www.mineralseducationcoalition.org/sites/default/files/uploads/2015percapita.jpg (last visited Dec. 16, 2015).

8. *2015 Mineral Baby*, MINERALS EDUC. COAL., https://www.mineralseducationcoalition.org/sites/default/files/uploads/2015baby.jpg (last visited Dec. 16, 2015).

9. *Id.*

Cement	48,483 pounds
Clays	11,427 pounds
Coal	452,666 pounds
Copper	985 pounds
Gold	1.59 troy ounces
Iron Ore	26,010 pounds
Lead	903 pounds
Natural Gas	9.96 cubic feet
Other Minerals and Metals	56,016 pounds
Petroleum	72,115 gallons
Phosphate Rock	16,651 pounds
Stone, Sand, and Gravel	1.25 million pounds
Zinc	5.39 pounds

While the 2015 estimates reflect a reduction in use of *nonfuel* mineral commodities when compared to prior years,[10] 3.11 million pounds is an increase of overall mineral use compared to prior years, and remains an enormous quantity of resources.

Development of natural resources is essential to meet even the most basic needs of modern societies and economies.[11] However, such development has historically been conducted in ways that perpetuate the "resource curse" in resource rich developing countries, too often resulting in increased corruption, income inequality, armed conflict, and environmental damage.[12] There is tension between the increasing demand for sustainable development, "development that meets the needs of the present without compromising the ability of future generations to meet their own needs,"[13] and the increasing global demand for natural resources. Responding to this tension is perhaps the key challenge of our

10. Compare, for example, the estimates for 2008, which totaled 3.6 million pounds per person born in the U.S. (0.5 million pounds lower than the 2015 total estimate), but included significantly higher estimates for commodities such as cement (65,480 pounds); clays (19,245 pounds); phosphate rock (19,815 pounds); and stone, sand, and gravel (1.61 million pounds). *See* Mineral Info. Inst., *Process for Calculating the mii Baby*, MINERALS EDUC. COAL. (2008), http://www.mineralseducationcoalition.org/pdfs/CalculationofmisBaby.pdf.

11. Development and International Economic Cooperation: Environment, Rep. of the World Comm'n on Env't and Dev.: Note by the Secretary General, G.A. Res. 42/427, 42nd Sess., U.N. Doc. A/42/427, at 66 (Aug. 4, 1987) [hereinafter Economic Cooperation].

12. *See* Jeffrey Frankel, *The Natural Resource Curse: A Survey of Diagnoses and Some Prescriptions* 19 (Harvard Univ., John F. Kennedy Sch. of Gov't, Working Paper No. RWP12-014, 2012), https://dash.harvard.edu/bitstream/handle/1/8694932/RWP12-014_Frankel.pdf?sequence=1; *See also* Terra Lawson-Remer & Joshua Greenstein, *Beating the Resource Curse in Africa: A Global Effort*, 3 AFRICA IN FACT 21 (Aug. 1, 2012), http://www.cfr.org/africa-sub-saharan/beating-resource-curse-africa-global-effort/p28780.

13. Economic Cooperation, *supra* note 11, at ch. 2, ¶ 1.

time. As explained in the section below, when not properly managed on a community level, such tensions may grow into costly conflict.

III. THE IMPORTANCE OF A "SOCIAL LICENSE TO OPERATE" AND THE COSTS OF CONFLICT

Mineral commodities are sourced from all over the world, on a planet where opportunities to extract minerals in areas with no human activity are becoming increasingly scarce.[14] This reality increases the likelihood of company-community interaction and conflict, and signals a greater need to understand and utilize mechanisms such as CDAs to increase company-community communication and manage impacts.[15]

Developers are often concerned that negotiating company-community agreements will be costly and time consuming, particularly in the early stages of a natural resource development project.[16] However, research on this topic shows that ignoring such investments can be even more costly, leading to temporary or permanent work stoppage; widespread community conflict; and reputational risks to investors, developers, host governments, and the resource sector as a whole (as has been experienced in mining, petroleum, palm oil, logging and other sectors).[17]

Examples of financial loss due to social conflicts have been particularly significant in the mining sector. For example, in 2012, at Newmont's Minas Conga Copper-Gold Project in Peru, demonstrations by local community members to stop the project resulted in losses of U.S. $2 million per day.[18] In 2014, the Lonmin Mine in South Africa, the source of nearly eighty percent of global Platinum Group Metal ("PGM") resources, experienced a widespread strike that led to a forty-three percent drop in production at Lonmin.[19] The impacts were felt across the PGM sector in South Africa, where Lonmin, Anglo American Platinum, and Impala Platinum lost a collective 18.6 billion rand (U.S. $1.7 billion) in revenues as a result of the strikes.[20]

Such reports are leading academic institutions to study the costs of conflict.

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14. Diane Toomey, *Global Scarcity: Scramble for Dwindling Natural Resources*, YALE ENV'T 360 (May 23, 2012), http://e360.yale.edu/feature/global_scarcity_scramble_for_dwindling_natural_resources/2531/.

15. Victoria Tauli-Corpuz, *The Private Sector: An Ally in Securing Indigenous Land Rights?* THOMSON REUTERS FOUND. (Mar. 14, 2016), http://news.trust.org/item/20160314172106-d0u9b/?source=hpblogs

16. INT'L ALERT, CONFLICT-SENSITIVE BUSINESS PRACTICE: GUIDANCE FOR EXTRACTIVE INDUSTRIES sec. 4, issue 1 at 2-3 (Mar. 2005), http://www.iisd.org/pdf/2005/security_conflict_sensitive_business.pdf.

17. *Id.* at 3-4.

18. Alex Emery, *Newmont Cutting Jobs at Suspended Peruvian Gold Project,* BLOOMBERG BUS. (Mar. 14, 2012), http://www.bloomberg.com/news/articles/2012-03-14/newmont-cut-jobs-at-suspended-conga-project-santa-cruz-says.

19. *Lonmin Fires 235 Striking Workers at S. Africa Platinum Mine*, NEWS 24 BOTSWANA (May 19, 2014), http://botswana.news24.com/Regional-News/Lonmin-fires-235-striking-workers-at-SAfrica-platinum-mine-20140519-3.

20. *Id.*

In a comprehensive study, the Centre for Social Responsibility in Mining at the University of Queensland found that the cost of conflict in the extractive sector is up to U.S. $10,000 per day during initial exploration, up to U.S. $50,000 per day during advanced exploration, and up to U.S. $20 million per week during operations.[21]

At the University of Pennsylvania's Wharton School, Professor Witold Henisz led a study that tracked the market valuation for twenty-six gold mines owned by nineteen publicly traded firms listed on the Toronto Stock Exchange between 1993 and 2008, using an index of the degree of stakeholder cooperation or conflict for these mines.[22] The key finding was that *two-thirds* of the market capitalization of these firms was a function of the firm's stakeholder engagement practices, whereas only one-third of the market capitalization was a function of the value of gold in the ground.[23]

While developers traditionally focused primarily on finding a good ore deposit, obtaining the necessary legal rights to minerals, and securing the necessary permits to mine, there is now increasing pressure for companies to obtain and *maintain* a "social license to operate"—the acceptance and approval of local communities for the operation to proceed.[24] Although Anglo American, one of the world's largest mining company, has yet to make a public statement to this effect, it is reasonable to ascertain that its lack of a social license to operate and the expectation that this would lead to increased social and political risks led to the company's decision to pull out of the Pebble Mine project in the U.S. State of Alaska.[25] Prior to its withdrawal from the project, Anglo American had invested six years and over U.S. $541 million to develop a site noted as "the planet's richest undeveloped gold deposit."[26] The company's CEO, Mark Cuifani, explained that the decision, made prior to completion of the formal permitting process for the mine, was not based on a reassessment of Pebble Mine's potential, but on internal efforts to "prioritize capital to projects with the highest value and lowest risks."[27] The mine was the subject of intensive local, national, and international opposition, primarily pointing to the impacts the mine would have on salmon fisheries in Alaska's Bristol Bay and on the local predominately Native American communities in the areas that rely upon those fisheries to sustain their

21. Daniel Frank et al., *Conflict Translates Environmental and Social Risk into Business Costs,,* UNIV. OF QUEENSL. AUSTRAL., CTR FOR SOC. RESPONSIBILITY IN MINING 3 (Mar. 19, 2014), https://www.csrm.uq.edu.au/news/conflict-costs.

22. *When Engaging with Your Stakeholders is Worth Its Weight in Gold,* KNOWLEDGE@WHARTON (Jul. 20, 2011), http://knowledge.wharton.upenn.edu/article/when-engaging-with-your-stakeholders-is-worth-its-weight-in-gold/.

23. *Id.*

24. *See* MINING COMMUNITY DEVELOPMENT, *supra* note 5, at ix.

25. Brad Wieners, *Why Miners Walked Away from the Planet's Richest Undeveloped Gold Deposit,* BLOOMBERG BUS. (Sept. 27, 2013), http://www.bloomberg.com/bw/articles/2013-09-27/why-anglo-american-walked-away-from-the-pebble-mine-gold-deposit#p1.

26. *Id.*

27. *Id.*

livelihoods.[28] The U.S. Environmental Protection Agency received over 670,000 public comments[29] about the project.

The studies and examples noted in this section underscore the need to place the social license to operate at the same, if not greater, level of importance as other legal rights and permits. The findings of these and other studies increasingly point to the importance of engaging with communities and building company-community relationships as the means to avoid conflict and maximize benefits to all parties involved. As discussed in the next section, international frameworks increasingly incorporate requirements for such community engagement and relationship building.

IV. INTERNATIONAL FRAMEWORKS AND THE COMPANY-COMMUNITY RELATIONSHIP

Due in part to examples like those noted in the section above, major lenders in the minerals sector require adherence to a range of international standards like the Equator Principles[30] and International Finance Corporation ("IFC") Performance Standards on Environmental and Social Sustainability,[31] which set out rigorous standards for consultation and interaction with communities, as well as standards for environmental assessment and management. This section will describe these and other major international frameworks that apply to the minerals sector.

A. International Finance Corporation Performance Standards on Environmental and Social Sustainability

The IFC Performance Standards require IFC investment and advisory clients to assess and manage environmental and social risks and impacts *throughout the life* of a project, including requirements for "engagement between the client, its workers, local communities directly affected by the project (the Affected Communities) and, where appropriate, other stakeholders."[32] This requirement derives from Performance Standard 1, which supports use of a grievance mechanism to facilitate early indication and prompt remediation of project-related grievances, and urges business to respect human rights.[33]

IFC Performance Standard 1 also promotes a broad and inclusive engagement

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28. *Id.*

29. For public comments and hearing transcripts, *see* Determinations: Restriction on Use of an Area as a Disposal Site; Pebble Deposit Area, Southwest Alaska; Hearings, 79 Fed. Reg. 42314 (July 21, 2014).

30. *See Equator Principles III*, EQUATOR PRINCIPLES (June 2013), http://www.equator-principles.com/resources/equator_principles_III.pdf.

31. *See* INT'L FIN. CORP., IFC PERFORMANCE STANDARDS ON ENVIRONMENTAL AND SOCIAL SUSTAINABILITY (Jan. 1, 2012), http://www.ifc.org/wps/wcm/connect/c8f524004a73daeca09afdf998895a12/IFC_Performance_Standar%20ds.pdf?MOD=AJPERES [hereinafter IFC PERFORMANCE STANDARDS].

32. *Id.* at 5, n.1 (explaining that "other stakeholders" are "those not directly affected by the project but that have an interest in it. These could include national and local authorities, neighboring projects, and/or nongovernmental organizations.").

33. *Id.* at 6.

process with a range of stakeholders, including women, youth, disadvantaged and vulnerable groups.[34] Performance Standard 1 states that risks, impacts, and opportunities related to the project should be disclosed and provided to Affected Communities, and requires a consultation process where any adverse risks and impacts are identified.[35] The consultation must include opportunities for Affected Communities to express their views on project risks, impacts, and mitigation measures, tailored to the language preferences and decision-making processes of Affected Communities.[36]

IFC Performance Standard 7 describes requirements related specifically to Indigenous Peoples affected by a project, including an *ongoing relationship* based on Informed Consultation and Participation ("ICP") with the Indigenous Peoples affected by a project *throughout the project's lifecycle.*[37] The IFC Performance Standards also require "Free Prior and Informed Consent" ("FPIC") of Affected Communities of Indigenous Peoples, *with evidence of agreement.*[38]

While there is no universally accepted definition of FPIC, the IFC Performance Standards explain that FPIC builds on and expands the requirements of ICP and is "established through good faith negotiation between the client and the Affected Communities of Indigenous Peoples."[39] Developers must document "(i) the mutually accepted process between the client and Affected Communities of Indigenous Peoples, and (ii) evidence of agreement between the parties as the outcome of the negotiations," but are not required to obtain unanimous acceptance of all individuals or groups within the community.[40]

B. The Equator Principles and Other Applications of the IFC Performance Standards

The Equator Principles, based on the IFC Performance Standards, comprise a comprehensive "risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects."[41] To date, eighty-two financial institutions in thirty-six countries have adopted the Equator Principles, covering over seventy percent of international project finance debt in emerging markets.[42] All thirty-two Organizations for Economic Co-Operation and Development ("OECD") Export Credits Agencies benchmark private sector projects against the IFC Performance Standards.[43] Additionally, the

34. *Id.* at 14.
35. *Id.* at 12-14.
36. *Id.* at 14.
37. *Id.* at 47.
38. *Id* .at 49.
39. *Id.*
40. *Id.*
41. *About the Equator Principals,* EQUATOR PRINCIPALS, http://www.equator-principles.com/index.php/about-ep (last visited Feb. 28, 2016).
42. *Id.*
43. *Equator Principals Financial Institutions,* INT'L FIN. CORP., http://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/IFC+Sustainability/Partnerships/Equator+Principles+Financial+Institutions/ (last visited Feb, 28, 2016); for a list of

Multilateral Investment Guarantee Agency ("MIGA") applies the IFC Performance Standards in its operations;[44] as well as the World Bank, which applies the IFC Performance Standards to projects supported by the International Bank for Reconstruction and Development/International Development Association that are "owned, constructed and/or operated by the private sector."[45] This widespread adoption of the IFC Performance Standards arguably makes them the leading set of environmental and social standards on the planet.

C. The World Bank Safeguard Policies

The World Bank Safeguard Policies, which apply when developing country governments turn to the World Bank for loans to support infrastructure and other development projects, were established to help "identify, avoid, and minimize harms to people and the environment."[46] The safeguards lay out requirements for borrowing governments to address environmental and social risks, such as conducting environmental and social risk assessments, consultation with affected communities, and restoring the livelihoods of displaced people, as eligibility requirements for project financing.[47] The World Bank is currently revising the Safeguard Policies, including a public consultation process that will close on March 16, 2016.[48] The revision aims to provide a more efficient and clear set of standards, which are expected to include expanded requirements for FPIC and stakeholder engagement, but may result in less stringent requirements in other areas.[49]

D. The United Nations Guiding Principles on Business and Human Rights

The United Nations Guiding Principles, known as the "Ruggie Principles," after John Ruggie, the U.N. Secretary-General's Special Representative for Business and Human Rights who led development of the Guiding Principles, and also known as the "Protect, Respect and Remedy" framework after its key themes of "State Duty to Protect" human rights, "Corporate Responsibility to Respect" human rights, and "Access to Remedy" for people harmed by business activities,

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participating organizations, *see also Official Export Credits Agencies*, OECD, http://www.oecd.org/tad/xcred/eca.htm (last visited Feb. 28, 2016).

44. *See Equator Principals Financial Institutions*, *supra* note 43.

45. *Id.*

46. *Safeguard Policies*, THE WORLD BANK, http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,menuPK:584441~pagePK:64168427~piPK:64168435~theSitePK:584435,00.html (last visited Feb. 28, 2016).

47. *Id.*

48. *Review and Update of the World Bank Safeguard Policies*, THE WORLD BANK, *http://consultations.worldbank.org/consultation/review-and-update-world-bank-safeguard-policies* (last visited Feb. 28, 2016).

49. *See* SUSTAINABLE DEVELOPMENT STRATEGIES GROUP, COMMENTS TO THE WORLD BANK ON THE PROPOSED CHANGES TO THE SAFEGUARD POLICIES, https://consultations.worldbank.org/Data/hub/files/sdsg_safeguard_policies_comments.pdf (last visited Apr. 20, 2016).

detail requirements for engagement and consultation with communities, including requirements for culturally relevant grievance mechanisms.[50] Complete with a helpful implementation guide, the U.N. Guiding Principles offer clear guidance for governments, business, and other stakeholders who wish to increase community engagement and reduce conflict in mining and other natural resource development projects.[51]

E. Incorporation of International Standards in Mine Development Contracts

Leading examples of mining contracts between companies and host governments now include requirements to adhere to international standards that promote sustainable development. One publicly accessible example is the International Bar Association's Model Mine Development Agreement ("MMDA"), which includes adherence to guidance provided in the IFC Performance Standards in its definition of "good industry practice."[52] The MMDA also includes a separate clause regarding the Applicability of the IFC Performance Standards and Equator Principles that states, "Where Applicable Law and regulations on environmental and social impact assessment and management, and pollution prevention are less stringent than the IFC Performance Standards, the Company shall undertake its activities in a manner consistent with the IFC Performance Standards."[53] Inclusion of such standards may influence clauses on subjects such as environmental and social impact assessment and management plans, community engagement and information sharing requirements, FPIC requirements, local community development plans, local business development plans, and requirements for negotiation of one or more CDAs in the MMDA and other mining contracts that incorporate leading international standards.

The negotiation and implementation of CDAs in particular is one approach to adhering to stakeholder engagement and other requirements within international standards noted in this section. The next section will further discuss current trends in use and content of CDAs.

V. TRENDS IN USE, AGREEMENT PROCESS, AND CONTENT OF COMMUNITY DEVELOPMENT AGREEMENTS

As demand for increased community engagement and greater community benefits from mining builds from mine-impacted communities to the boardrooms of the IFC, the expectations for CDAs, or agreements between companies and communities to manage the impacts and benefits of mining, have soared.[54] CDAs

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50. *See generally*, Special Representative of the Secretary-General, *Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework*, U.N. Doc. HR/PUB/11/04 (2011), http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf.

51. *Id.*

52. *Model Mining Development Agreement Project*, INT'L BAR ASS'N § 1.1 (Mar. 29, 2011), http://www.mmdaproject.org/?p=1417.

53. *Id.* §10.2.

54. *See* Kendra E. Dupuy, *Community Development in Mining Laws, 1993 – 2012*, 1

are now *modus operandi* in many minerals rich parts of the world.[55] Institutions such as The World Bank, major nongovernmental organizations such as the Natural Resource Governance Institute, research institutes at major academic institutions such as Columbia University's Columbia Center on Sustainable Investment, and a growing number of national governments have become proponents of various types of investor-community agreements, particularly in mining projects.[56]

CDAs, also widely known as "Impact Benefit Agreements," as well as by many other names,[57] aim to develop mutually beneficial relationships between companies, communities, and other stakeholders, while delivering mutually rewarding sustainable benefits from the mining projects.[58] CDAs are utilized where national or subnational laws require them, and are also often used voluntarily by investors and communities who understand the benefits of CDAs.[59]

A. Use of Community Development Agreements around the Globe

Requirements for CDAs are increasingly common around the globe. In Canada, the Nanavut Land Claims Agreement Act requires an Inuit Impact and Benefit Agreement,[60] and in Canada's North West Territories, various agreements between First Nations and the government require company-community agreements.[61] Other countries that require CDAs include Guinea (Mining Code 2011, Art. 130)[62]; Kenya (Mining Bill 2014, Sec. 45(2)(f–g) and Natural Resources Benefit Sharing Bill)[63]; Mozambique (Mining Law 2014)[64]; Nigeria (Minerals and Mining Act 2007, Sec. 116)[65]; Papua New Guinea (Mining Act 1992)[66]; Sierra

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EXTRACTIVE INDUS. & SOC'Y 200 (2014); *see also id.* at 202 (noting in particular Dupuy's graph, "Cumulative Adoption of Community Development in Mining Laws, 1985–2012").

55. *See generally id.*

56. For an example of The World Bank's view on CDAs, *see* MINING COMMUNITY DEVELOPMENT, supra note 5, at ix-x. For an example of Columbia University's Columbia Center on Sustainable Investment view on CDAs, *see* Jennifer Louitt, et al., *Emerging Practices in Community Development Agreements*, COLUM. CTR. ON SUSTAINABLE INV., Feb. 2016.

57. *See, e.g.*, MINING COMMUNITY DEVELOPMENT, *supra* note 5, at 5 (listing other names for CDAs, in addition to "Impact Benefit Agreements," include: Voluntary Agreements, Partnership Agreements, Participation Agreements, Impact Benefit Agreements, Community Contracts, Landowner Agreements, Investment Agreements, Shared Responsibility Agreements, Exploration Agreements, Benefits Sharing Agreements, and Empowerment Agreements, just to name a few).

58. *Id.*

59. *Id.* at 9-10.

60. Nunavut Land Claims Agreement Act, S.C. 1993, c. 29, art. 26, (Can.).

61. Marcela Duque Penagos et al., *Requirements for Community Development in Mining Laws*, COLUM. CRT. ON SUSTAINABLE INV. (Nov. 2014), http://ccsi.columbia.edu/files/2015/01/Community-Development-Requirements-in-Mining-Laws-Matrix-November-2014-.pdf.

62. Code Miner de la Republique de Guinee (2011) Cap. 3 § 130 (Guinea).

63. The Natural Resources (Benefit Sharing) Bill (2014) Cap. 5 § 28 (Kenya); The Mining Bill (2014) KENYA GAZETTE SUPPLEMENT No. 28 § 45(2)(g).

64. *See generally* Ministry of Mineral Resources and Energy Mining Law (2002), (Mozambique).

65. Nigerian Minerals and Mining Act (2007) Cap. (A5), § 116 (Nigeria).

66. *Mining Act and Regulation 1992*, (Papua New Guinea).

Leone (Mining and Minerals Act 2009)[67]; South Sudan (Mining Bill 2012, Arts. 68(2), 80(1)(c), and 128(1))[68]; and Yemen (Law No. 24 of 2002 Law of Mines and Quarries, revised in 2007, updated in 2010 as the Law No. 22 Concerning Mines and Quarries).[69] Egypt, Eritrea, and Mongolia are among the growing list of countries that have introduced legislation that would require CDAs.[70]

Numerous other countries have legislation that requires investors to provide a community development fund, plan, royalty share, or some type of corporate social responsibility initiative to benefit local communities.[71] This paper is limited to discussion of negotiated CDAs, which may result in a fund, community development plan, other management plan, or benefit as part of the agreement. However, it is remarkable that requirements for some type of community development in mining laws, including but not limited to CDAs, has been on the rise over the last thirty years, particularly within the last decade.[72]

As noted above, CDAs may also be implemented voluntarily in countries where they are not currently required by law.[73] In Australia, Impact Benefit Agreements are commonly negotiated between indigenous Australians and mining companies.[74] Ghana is another example of a country where CDAs are widely utilized in mining projects, but are often implemented voluntarily, not as a requirement under national law.[75] In the United States, CDAs are not required, nor are they frequently utilized, but the Stillwater Mining Company and the local communities of Stillwater and Sweet Grass Counties in Montana have used a legally binding agreement between the company and communities since 2000.[76] CDAs have also been utilized in Greenland,[77] Laos,[78] and Mongolia.[79]

Whether developed under national or subnational requirements, or as

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67. The Mines and Minerals Act (2010) (Sierra Leone).

68. Law No. 36 of 2012 (Law on Mining) *Mining Act*, (South Sudan).

69. Law No. 22 of 2010 (Concerning Mines and Quarries), (Yemen).

70. Kristi Disney, Community Leadership and Participation in Energy Development Projects, SUSTAINABLE DEV. STRATEGIES GRP. Oct. 10, 2015, http://www.law.du.edu/documents/ved-nanda-center/Disney_Community_Participation.pdf ; *see also* THE WORLD BANK, MINING COMMUNITY DEVELOPMENT AGREEMENTS – PRACTICAL EXPERIENCES AND FIELD STUDIES 16 (2010).

71. *See* Dupuy, *supra* note 54; Penagos, *supra* note 61.

72. *See* Dupuy, *supra* note 54.

73. *Id.*

74. *See* Ciaran O'Faircheallaigh, *An Australian Perspective on Impact and Benefit Agreements*, 25 NORTHERN PERSPECTIVES, (1999–2000), http://www.carc.org/pubs/v25no4/4.htm..

75. *See The Ghanian Experience*, SUSTAINABLE DEV. STRATEGIES GRP., http://www.sdsg.org/archives/cda-library/ (last visited Feb. 1, 2016) (displaying examples of Ghanian CDAs in the Sustainable Development Strategies Group CDA Library).

76. *See Good Neighbor Agreement*, N. PLAINS RES. COUNCIL, https://www.northernplains.org/issues/good-neighbor-agreement/ (last visited Feb. 1, 2016).

77. *See generally Greenland*, COLUM. CTR. ON SUSTAINABLE INV., http://ccsi.columbia.edu/work/projects/greenland-2/ (last visited Feb. 1, 2016).

78. *See generally Laos*, Colum. CTR ON SUSTAINABLE INV., http://ccsi.columbia.edu/work/projects/cda_laos/ (last visited Feb. 1, 2016).

79. *See The Mongolian Experience, CDA Library*, SUSTAINABLE DEV. STRATEGIES GRP., http://www.sdsg.org/archives/cda-library/ (last visited Feb. 1, 2016).

voluntary initiatives, most CDAs are difficult for the public to access because they often contain confidentiality clauses or have not been made accessible to the public for other reasons.[80] In some cases, community members who should benefit from the agreements are unable to access the agreed documents—presenting a major obstacle for agreement's implementation.[81] However, the Agreements, Treaties and Negotiated Settlement Project,[82] IBA Research Network,[83] Columbia Center on Sustainable Investment,[84] Sustainable Development Strategies Group,[85] and others are working to make more CDAs available to the public, so that they may be better understood by companies, communities, and other stakeholders, and aid the process of improving future CDAs. What is known about CDAs is based on the limited number of public agreements, and the practical experiences of experts and stakeholders who have studied or had direct experience with CDAs. The World Bank and other institutions have published helpful guidance documents on CDAs.[86]

B. Agreement Process

The greatest benefit of CDAs may be in the process itself. The process is a multi-year, multi-layered, and complex effort that requires experienced professionals from a variety of disciplines such as anthropology and social sciences, economics and accounting, and law and policy, among others.[87] The investment of time and effort, however, leads to the advantages of increased stakeholder capacity and engagement; improved relationships between the company and affected communities; identification of shared interests; improved abilities for the parties to manage change and quickly address grievances *before* they escalate into major conflicts; and long-term sustainable benefits.[88]

The CDA process should begin early in the mining life cycle, during the pre-feasibility and exploration phases, and well before the construction phase.[89] The early stages of a mining project often seem like a difficult time for companies to make social investments: initial expenses are high and profit from mineral development has not yet been made, resulting in a negative cash flow.[90] Balancing

80. *See* Jennifer Louitt, et al., *supra* note 56, at 2.

81. *Id.*

82. AGREEMENTS, TREATIES & NEGOTIATED SETTLEMENT PROJECT (ATNS) DATABASE, http://www.atns.net.au (last visited Feb. 1, 2016).

83. *List of Known IBAs,* IBA RESEARCH NETWORK, http://www.impactandbenefit.com/IBA_Database_List/ (last visited Feb. 1, 2016).

84. *Community Development Requirements: Mapping, Database and Issues at Stake*, COLUM. CTR. ON SUSTAINABLE INV., http://ccsi.columbia.edu/work/projects/community-development-agreements-frameworks-and-tools/ (last visited Feb. 1, 2016).

85. *Community Development Agreements Library*, SUSTAINABLE DEV. STRATEGIES GRP., http://www.sdsg.org/archives/cda-library/ (last visited Feb. 1, 2016).

86. *Id.*

87. *See* MINING COMMUNITY DEVELOPMENT, *supra* note 5, at 21.

88. *See also id.* at 8, Table 2.1 "Benefits of Community Development Agreements."

89. *Id.* at 15.

90. *Id.* at 51-54.

the demands of investors to quickly make a return on their investments with the need for increased social spending can be particularly difficult in these early stages.[91] However, when faced with the potential costs noted in Section II of this paper—the cost of not having a social license to operate, and the cost of conflict—the investment of time and effort is clearly warranted. The IFC has also developed a freely accessible Financial Valuation Tool,[92] which aids in assessing, targeting, and optimizing sustainability investments such as those required in the CDA process.

The World Bank describes the major stages of the CDA process as:[93]

- Stakeholder Identification and Mapping;
- Participatory Stakeholder Engagement;
- Participatory Capacity Development and Assessment;
- Participatory Determination of Stakeholder Representatives and Councils;
- Participatory Negotiation of a CDA; and
- Monitoring, Evaluation, Reporting, and Review.

All phases begin early in the mine life cycle, by or within the exploration phase. With the exception of the negotiation phase, all phases proceed over the life of the mine and are ongoing.[94] While there is not sufficient space in this paper to cover each of these phases in detail, it is important to note that the process reflects many requirements found in the IFC Performance Standards[95] and other international frameworks discussed in the previous section of this paper. Particularly relevant to the CDA process is the need for a broad and inclusive engagement process with a range of stakeholders, including women, youth, disadvantaged and vulnerable groups.[96] The capacity building phase is also important and should begin prior to the negotiation process, to ensure that parties are well informed and prepared to negotiate.[97] While much of the capacity building process should focus on the community, companies also need support to improve their capacity to effectively communicate and collaborate with communities.[98] These fine-tuned social skills are often missing in the skill sets of mining professionals and their negotiation teams, who may have a high level of knowledge regarding mining technology, mathematics, geology, and legal frameworks, but may lack the ability to effectively communicate with communities

91. *Id.*

92. *Financial Valuation Tool for Sustainability Investments*, INT'L FIN. CORP., http://www.fvtool.com (last visited Feb. 1, 2016).

93. MINING COMMUNITY DEVELOPMENT, *supra* note 5, at 17.

94. *Id.*

95. *See* INT'L. FIN. CORP., IFC PERFORMANCE STANDARDS ON ENVIRONMENTAL AND SOCIAL SUSTAINABILITY (Jan. 1, 2012).

96. *Id.* at 13-14.

97. *See* MINING COMMUNITY DEVELOPMENT, *supra* note 5, at 8.

98. *Id.*

who may speak a different language, have no means to travel, lack literacy, be exposed to risk from engaging with mining companies, or have a significantly different cultures.[99]

Also critically important is the *negotiation process*—if CDA is merely a "boiler plate" agreement in which a community member who does not necessarily represent the interests of the community provides his or her signature, it is not truly a negotiated agreement and is likely to fail.[100] The community process of selecting trustworthy representatives who represent the interests of the community, with capacity to negotiate, and who engage in a legitimate negotiation, is instrumental to the success of the agreement.[101] Ongoing stakeholder engagement, evaluation, reporting, and review are also of great importance to the process.[102]

C. *CDA Content*

Traditionally, CDAs focused primarily on sharing of financial benefits, but modern CDAs are much more comprehensive, covering not only financial benefits, but also topics such as:[103]

- Capacity building;
- Community participation in decision-making processes;
- Information sharing requirements and procedures;
- Local community development objectives and programs to meet those objectives;
- Local business development plans;
- Employment and training;
- Management and monitoring of community development programs and related funds;
- Dispute resolution and grievance mechanisms;
- Addressing environmental, social and economic conditions during and after mine closure, and the transition to a post-mining economy.

As noted above, the content of the CDA is a subject matter to be negotiated. National or subnational legislation, or the mine development agreement negotiated between the company and the host government may provide a list of broad areas to be covered in the CDA, but there should always be room for legitimate negotiations between the company and community that can address the unique interests and circumstances of particular communities. Parties may also conclude

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99. *See* Joseph Foti & Lalanath de Silva, *A Seat at the Table: Including the Poor in Decisions for Development and Environment*, WORLD RES. INST.,3 (2010), http://www.wri.org/publication/seat-table.

100. *See Model Mining Development Agreement Project*, *supra* note 54, at V.

101. MINING COMMUNITY DEVELOPMENT, *supra* note 5, at 47.

102. *Id.* at 12-13.

103. For a more comprehensive list of CDA topics, *see Model Mining Development Agreement Project*, *supra* note 52, at Annex B, (describing community development agreement objectives).

multiple agreements related to the same project—one covering the objectives, management structure, and transparency of a community development fund, another regarding a local business development plan, etc.[104]

Whatever benefits the CDA aims to provide, the agreement must include a process for fair distribution of benefits. Actual or perceived unequal distribution of benefits may lead to conflict among community members or between communities, impacting implementation of the CDA or even the mining project.[105] Including a role for the government is also important, particularly to ensure that the company does not duplicate or take on the role of government, and that there is a transition plan in place to sustain benefits during and after mine closure.[106]

VI. CONCLUSION

The relationship between companies and communities is of increasing importance to the success or failure of mining projects. Inability to obtain or maintain a social license to operate can be costly or even stop a mining project from going forward. Lawyers and other professionals who provide advice to stakeholders involved in mining projects should be aware that such projects are not only about the immediate impacts and benefits, but also impact prospects for long-term sustainable development.

The expectations of mine impacted communities and major international policy frameworks now require much more than a one-off consultation with communities prior to mine development, but ongoing consultations and community engagement throughout the life of the mining project. One way to implement ongoing community engagement, manage complex impacts, and promote sustainable benefits related to a mining project is through use of CDAs. While national and subnational legislation increasingly require CDAs, companies and communities that understand the extraordinary benefits such agreements can offer often voluntarily negotiate CDAs. As more CDAs become publicly accessible, legal professionals and other academics and stakeholders will have opportunities to learn more about good practice in negotiating and implementing such agreements in mining and other natural resource sectors.

104. MINING COMMUNITY DEVELOPMENT, *supra* note 5, at 46.
105. *Id.* at 18.
106. *Id.* at 26.

THE SPAGHETTI BOWL OF PREFERENTIAL TRADE AGREEMENTS AND THE DECLINING RELEVANCE OF THE WTO

*Brad Kloewer**

I. INTRODUCTION

The renowned economist and prolific scholar Jagdish Bhagwati once famously referred to the variety of preferential trade agreements ("PTAs") in the world as a "spaghetti bowl" phenomenon, wherein the diversity of trade arrangements between nations and regions makes for a confusing and convoluted mess.[1] The metaphor is apt, he argued, because the increasingly fragmented nature of these varying accords means each transaction must be traced from its origin through a twisting maze of diverse regimes before ever arriving at its destination.[2] These arrangements are difficult for even seasoned practitioners to untangle, and doubly so for the lay observer.

The confusion these agreements provoke is no surprise, especially when one considers that this multiplicity of norms was precisely what the World Trade Organization ("WTO") was ostensibly designed to avert. Of course the WTO is an extremely complicated institution, but the order it espouses is fundamentally premised on two basic principles: National Treatment and Most Favored Nation.[3] The principle of national treatment is essentially a requirement that imports be treated the same as domestically produced goods, whereas the most favored nation principle requires that all trade benefits offered from one nation to another must be similarly extended to all other nations.[4] These principles, in turn, are premised on the widely accepted belief that liberalizing trade and reducing barriers such as tariffs leads to benefits for everyone involved.[5] Preferential trade agreements

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1. *CFR's Jagdish Bhagwati Argues Against Preferential Trade Agreements in New Book; Recommends Completion of Multilateral Doha Round*, COUNCIL ON FOREIGN RELATIONS (July 16, 2008), http://www.cfr.org/world/cfrs-jagdish-bhagwati-argues-against-preferential-trade-agreements-new-book-recommends-completion-multilateral-doha-round/p16798.

2. Jagdish Bhagwati, *US Trade Policy: The Infatuations with FTAs*, *in* THE DANGEROUS OBSESSION WITH FREE TRADE AREAS (Claude Barfielde ed., 1995).

3. Warren H. Maruyama, *Preferential Trade Arrangements and the Erosion of the WTO's MFN Principle*, 46 STAN. J. INT'L L. 177, 179 (2010).

4. *Id.*

5. *Why Trade is Good for You*, THE ECONOMIST, Oct. 1, 1998,

("PTAs"), however, obviously confer additional benefits: benefits that exceed those offered to every other "most favored nation." As a result, these agreements essentially amount to more-than-most or even most-most favored treatment.

The Marrakech Agreement,[6] which created the WTO in 1995 and subsumed the General Agreement on Tariffs and Trade ("GATT")[7] as well as the General Agreement on Trade in Services ("GATS"),[8] allows for the creation of PTAs given that certain conditions are met. These provisions are intended to prevent an unwieldy diversity of international trade norms, but, as will be more thoroughly discussed below, scholars from around the world have seriously questioned their effectiveness. In fact, an incredible and unprecedented proliferation of PTAs has been proceeding almost unabated since the inception of the WTO, leading to a substantial number of these agreements having been reported to the WTO by 2014.[9]

In his often-cited commentary of the subject from nearly two decades ago, Professor Bhagwati warned that if the proliferation of PTAs continued, "it is likely that the dilution of the multilateral trading regime by the spaghetti bowl of preferential trade agreements will be our fate."[10] With the benefit of nearly twenty years of hindsight, can we yet determine if he was right? This paper will contend not only that Professor Bhagwati's prescience was well-founded, but moreover that the proliferation of PTAs was an inevitable course of action for a world not yet willing or able to accept a global system of homogenous norms.

Part Two will establish some context by looking at the requirements of Article XXIV of the GATT, the Enabling Clause, and the surprising but telling paucity of WTO Appellate Body jurisprudence on the topic. Part Three will highlight and address some of the most prominent factors that may lead a country or region to engage in PTAs despite the WTO's more comprehensive umbrella. Part Four will look at specific examples of global realities in existence today and explain how these circumstances are demonstrative of a world order that isn't ready or able to submit to a trade regime governed by the standards of the WTO.

II. GATT AND PTAS

Despite their undeniable departure from the Most Favored Nation principle, and the trade distorting effects that result, different provisions of the GATT do in

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http://www.economist.com/node/6051 44.

6. Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154 [hereinafter Marrakesh Agreement]; *see generally* General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, art. XXIV, 1867 U.N.T.S. 187, 33 I.L.M. 1153.

7. General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, 1867 U.N.T.S. 187, 33 I.L.M. 1153 [hereinafter GATT 1994].

8. General Agreement on Trade in Services, April 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1B, 33 I.L.M. 1167, art. XIV [hereinafter GATS].

9. *See generally, List of PTAs*, WORLD TRADE ORG., http://ptadb.wto.org/ptaList.aspx (last visited Mar. 4, 2016). *See also Regional Trade Agreements*, WORLD TRADE ORG., http://www.wto.org/english/tratop_e/ region_e/region_e.htm (last visited Dec. 4, 2014).

10. Bhagwati, *supra* note 2, at 20.

fact permit the formation of PTAs. The Enabling Clause, for example, allows for deviations from the Most Favored Nation principle for "[r]egional or global arrangements entered into amongst less-developed contracting parties for the mutual reduction or elimination of tariffs."[11] This provision obviously applies only to agreements between developing countries, however, so the far more common mechanism under which these arrangements are allowed is Article XXIV, which lays out the criteria for three different allowable types of PTAs: customs unions, free trade agreements ("FTAs"), and interim agreements.[12]

A. Article XXIV

The substantive portions of Article XXIV are found in paragraphs 5 through 9. As a preliminary matter, Paragraph 5 emphasizes that while GATT rules do not prevent the creation of PTAs, they do limit the manner in which they can function.[13] More specifically, the formation of a PTA cannot justify an increase in any sort of barriers to trade—notably tariffs—to states not party to the PTA.[14] That is, PTAs can only function to reduce barriers to trade between the states that engage in them. They cannot act as a wall to shut out the rest of the world. Paragraph 6 requires that if a state does embark on a PTA that leads to duties or tariffs increasing for any bound tariff item, that state must formulate some means of compensation in line with the requirements of GATT Article XXVIII.[15] Paragraph 7 requires WTO members to notify the WTO whenever they intend to join a PTA, and further stipulates that those agreements must be reviewed to ensure that they do not violate other provisions of the GATT.[16]

Paragraph 8 is especially important because it explains the different types of PTAs and establishes rules for their implementation. Paragraph 8(a) deals with customs unions and requires that within a custom union, barriers to trade must be eliminated for "substantially all trade" taking place between its members.[17] For trade taking place outside a custom union, however, members must maintain "substantially" uniform regulations with respect to all third parties.[18] A custom union also must not result in higher tariffs for the group than existed before.[19] Equally relevant to this discussion is paragraph 8(b), which address FTAs.[20] Here the requirements are very similar. Within the FTA, barriers to trade must be eliminated for "substantially all trade" between members, and the FTA must not

11. World Trade Organization, *Different and More Favourable Treatment Reciprocity and Fuller Participation of Developing Countries*, ¶ 2(c), WTO Doc. No. L/4903 (Nov. 28, 1979), https://www.wto.org/english/docs_e/legal_e/tokyo_enabling_e.pdf [hereinafter Enabling Clause].

12. *See* GATT 1994, *supra* note 7, at art. XXIV. For the purposes of this article, the umbrella term "PTA" is intended to encompass all three of these arrangements.

13. GATT 1994, *supra* note 7, at art. XXIV, ¶ 5.

14. *Id.*

15. *Id.* at art. XXIV, ¶ 6.

16. *Id.* at art. XXIV, ¶ 7.

17. *Id.* at art. XXIV, ¶ 8(a).

18. *Id.* at art. XXIV, ¶ 8(b).

19. Maruyama, *supra* note 3, at 181.

20. GATT 1994, *supra* note 7, at art. XXIV, ¶ 8(b).

result in an increase in barriers to third parties.[21]

B. WTO Jurisprudence on Article XXIV

The dizzying proliferation of PTAs has continued unabated for over two decades. In 1990, the GATT had only received notification of forty regional trade agreements ("RTAs") then in existence.[22] By June of 2014, however, that number had skyrocketed to 585.[23] In addition, bilateral investment treaties, which typically grant preferential treatment between only two states, have similarly seen an unprecedented growth in popularity, with more than 2,265 having been signed since 1989.[24] FTAs too have become increasingly common in recent years, with every WTO member (with the exception of Mongolia) being party to at least one FTA, and with the average WTO member being party to thirteen such agreements.[25]

With all this expansion, one would expect the WTO Dispute Settlement Body to have produced volumes of commentary on the proper interpretation of Article XXIV. In reality, the Appellate Body has had remarkably little to say on the topic. Despite the explosion of PTA formation around the world, the Appellate Body has never directly interpreted one of the most fundamental elements of Article XXIV—the meaning of the "substantially all" requirement[26]—nor has there ever been consensus as to whether this term should be understood as a percentage or as something else.[27]

The leading case dealing with Article XXIV at the WTO is *Turkey – Textiles*, wherein Turkey sought to impose a quota on imports of Indian textiles in order to join a customs union with the European Communities.[28] Turkey had ostensibly imposed the quotas in order to prevent Indian textiles that had been imported into Turkey from then being immediately shipped onward into Europe, which would violate the European Communities' more restrictive quotas on Indian imports.[29] Without addressing the more pressing questions regarding the ways in which Custom Unions themselves violate the Most Favored Nation principle and thereby potentially undermine the WTO regime itself, the Appellate Body ruled simply that Article XXIV can be used as a valid defense to trade distorting practices only if it meets two conditions.[30] "First, the party claiming the benefit of this defence must

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21. *Id.*

22. Mohammad F.A. Nsour, Abdullah Dmour, & Lana Nimri, *Trends in Free Trade: Legal and Policy Perspectives on Jordan's Regional Trade Arrangements*, 24 IND. INT'L & COMP. L. REV. 313, 313 (2014).

23. Bhagwati, *supra* note 2.

24. Chris Brummer, *The Ties that Bind? Regionalism, Commercial Treaties, and the Future of Global Economic Integration*, 60 VAND. L. REV. 1349, 1363 (2007).

25. Maruyama, *supra* note 3, at 193.

26. *Id.*

27. *Id.* at 184.

28. ANDREW T. GUZMAN & JOOST H.B. PAUWELYN, INTERNATIONAL TRADE LAW 338, 338-42 (WOLTERS KLUWER, 2D ED. 2012).

29. *Id.*

30. Appellate Body Report, *Turkey – Restrictions on Imports of Textile and Clothing Products*, ¶

demonstrate that the measure at issue is introduced upon the formation of a customs union that fully meets the requirements of sub-paragraphs 8(a) and 5(a) of Article XXIV."[31] Second, "that party must demonstrate that the formation of that customs union would be prevented if it were not allowed to introduce the measure at issue."[32] The Appellate Body ruled that, because Turkey and the European Communities could have introduced a rule of origin regime to determine the origin of those textiles, then the import quota could not be justified. This determination did little—if anything—to address the larger and more pressing issues.

Perhaps even more surprising than the lack of guidance on how countries should go about avoiding the trade distorting effects of PTAs is the almost total silence on whether and when notified PTAs meet the requirements of Article XXIV. As already mentioned, paragraph 7 of Article XXIV requires that states notify the WTO of any such agreements so that they may be reviewed for compliance.[33] In acknowledgement of the increasing demand for such assessments, the WTO established the Regional Trade Agreements Committee ("RTAC") in February of 1996.[34] However, in nearly twenty years of operation, the RTAC has only reached consensus on one such agreement, that between the Czech Republic and Slovakia after the breakup of Czechoslovakia in 1993.[35]

III. WHY FORM A PTA?

But why would anyone want to undermine a system that economists laud by violating the very principles on which that system is based? If the models are correct, then a global economy wherein every state has equal trading benefits with every other would promise to improve everyone's lot; after all, "a rising tide lifts all boats."[36] It turns out that there are many reasons why a state might prefer regional or bilateral arrangements over the global norms proffered by the WTO. A handful of the most prevalent will be discussed below.

Before delving into those, it may help to ground our considerations in a study from a slightly different branch of economics that professors from the University of Miami and the Harvard School of Public Health conducted nearly two decades ago.[37] Researchers there asked subjects a simple question: Assuming that prices remained at their current levels and that the purchasing power of money did not change, would they rather have a yearly income of $50,000 in a society where

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10, WTO Doc. WT/DS34/AB/R (adopted Nov. 19, 1999).

31. *Id.* ¶ 58.

32. *Id.*

33. GATT 1994, *supra* note 7, at art. XXIV, ¶ 7.

34. *Rules: Regional Agreements, Building Blocks or Stumbling Blocks?*, WORLD TRADE ORG., http://www.wto.org/english/thewto_e/minist_e/min05_e/brief_e/brief09_e.htm (last visited Dec. 4, 2014).

35. *Id.*

36. *See* TED SORENSEN, COUNSELOR: A LIFE AT THE EDGE OF HISTORY 227 (2008) (explaining the phrase "A rising tide lifts all the boats" came from an New England Council regional chamber of commerce).

37. Sara J. Solnick & David Hemenway, *Is more always better?: A Survey on Positional Concerns*, 37 J. OF ECON. BEHAV. & ORG. 373 (1998).

others make only $25,000, or would they prefer to make $100,000 in a society where others make $200,000?[38] Shockingly for economists, 50% of respondents preferred to live in the former society rather than the latter.[39]

This example is intended to highlight what economists so often prefer to overlook: the real world does not function as cleanly or as rationally as theory would suggest. Put simply, different people find different things to be more valuable than money, and material comfort is only one of various considerations that can affect the decision making process. To state the premise a bit more bluntly as it pertains to world trade, for many, global welfare means little when compared to national welfare, especially when considerations such as power and influence come into play. As the numbers above suggest, many people are willing to sacrifice greater comfort for both themselves and others if it means that they can secure a position of influence or power.

A. Foreign Policy

All countries have political aspirations. Large, powerful countries seek to expand and solidify the power they can wield over others while small, relatively powerless countries seek to improve on their positions relative not only to more powerful countries, but also in relation to their peers. Here, too, "better" is often understood not in comparison to a former version of self, but rather in comparison to a current version of others.

With this in mind, the vast expansion of PTAs throughout the world should come as no surprise. Not only are poor, developing countries signing on to PTAs with their similarly situated neighbors and more distant nations alike, but so too are the most powerful nations in the world expanding their base of trade agreements.[40] In fact, the United States is one of the leaders of this global trend, having signed free trade agreements with twenty different countries, and plans for more on the way.[41]

Trade agreements strengthen ties between countries.[42] They can lead not only to a deepening of economic codependence, but also to greater political cooperation, as clearly demonstrated by the European Union ("EU").[43] They can establish relationships that can later be utilized to expand cooperation on matters of national security or more overtly political machinations at institutions like the

38. *Id.* at 377.

39. *Id.* at 378.

40. *See* generally, Leonardo Baccini & Johannes Urpelainen, *Preferential Trading Agreements: Helping Economic Reform in Developing Countries,* VOX, http://www.voxeu.org/article/preferential-trading-agreements-helping-economic-reform-developing-countries, (last visited Mar. 4, 2016).

41. *See generally*, *Free Trade Agreements*, INTER'L TRADE ADMIN., http://trade.gov/fta/ (last visited Dec. 4, 2014).

42. Bhagwati, *supra* note 2.

43. *See* John McCormick, *Ten Reasons Why the European Union is a Good Idea*, JOHN MCCORMICK ABOUT EUR. AND THE EUR. UNION, http://johnmccormick.eu/2013/09/ten-reasons-why-the-european-union-is-a-good-idea/ (last visited Mar. 4, 2016).

U.N.[44] They can even buy leverage to discourage sanctions for unpopular behavior, as is readily demonstrated by European reluctance to jeopardize the flow of Russian oil over the crisis in Ukraine.[45]

PTAs between a select number of nations can also serve another useful political purpose by pitting regions against one another in ideological battles. Venezuela's decision to leave the Andean Community in favor of Mercosur,[46] or Russia's ongoing efforts to establish a customs union with Kazakhstan and Belarus[47] are fitting examples of this trend.

B. Deficiencies in the WTO

Many countries prefer to establish PTAs on a regional or bilateral basis because those agreements feature elements that are lacking or inefficient at the WTO. The most obvious example of this sort of shortcoming is the incredible amount of time required to arrive at a consensus in the WTO.[48] The Doha Round of trade negotiations began thirteen years ago, and prospects remain bleak for any near-term resolution of its most contentious issues.[49] PTAs, on the other hand, can be negotiated much more quickly, and with far fewer voices clamoring to be heard.[50]

Another glaring omission pertains to the WTO's Dispute Settlement Body, which is only empowered to hear complaints from states.[51] This leaves investment disputes between private parties, or between private parties and states, completely unattended to.[52] An international trade regime that does not provide a mechanism for settling disputes with private parties is practically begging for alternative

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44. Richard Feinberg, *The Political Economy of United States' Free Trade Arrangements*, 26 WORLD ECONOMY 1019, 1038 (2003).

45. Charlemagne, *Europe, Russia, and Sanctions: Limp wrist diplomacy?*, THE ECONOMIST (Mar. 21, 2014), http://www.economist.com/blogs/charlemagne/2014/03/europe-russia-and-sanctions.

46. Brummer, *supra* note 24, at 1380-90.

47. Boris N. Mamlyuk, *Regionalizing Multilateralism: The Effect of Russia's Accession to the WTO on Existing Regional Integration Schemes in the Former Soviet Space*, 18 UCLA J. INT'L L. & FOREIGN AFF. 207, 210 (2014).

48. ABC OF PREFERENTIAL TRADE AGREEMENTS: FREQUENTLY ASKED QUESTIONS, MONOGRAPHS ON GLOBALIZATION AND INDIA, MYTHS AND REALITIES, ¶14 (CUTS Centre for International Trade 2009).

49. Duncan Green, *Doha round has run its course but new trade realities demand solutions*, THE GUARDIAN (May 4, 2011), http://www.guardian.co.uk/global-development/poverty-matters/2011/may/04/doha-trade-realities-demand-solutions. ABC OF PREFERENTIAL TRADE AGREEMENTS: FREQUENTLY ASKED QUESTIONS, MONOGRAPHS ON GLOBALIZATION AND INDIA, MYTHS AND REALITIES, ¶14 (CUTS Centre for International Trade 2009).

50. Regional Trade Integration and Conflict Resolution (Shaheen R. Khan ed., 2009), http://samples.sainsburysebooks.co.uk/9781134023004_sample_509655.pdf (last visited Mar. 4, 2016).

51. *Understanding the WTO: Settling Disputes*, WORLD TRADE ORG., https://www.wto.org/english/thewto_e/whatis_e/tif_e/disp1_e.htm (last visited Feb. 5, 2016).

52. Alberto Alemanno, *Private parties and WTO Dispute Settlement System* (2004), Cornell Law School Inter-University Graduate Student Conference Papers. Paper 1, http://scholarship.law.cornell.edu/cgi/viewcontent.cgi?article=1000&context=lps_clacp (last visited Feb. 5, 2016).

institutions to step in. To fill this void, a variety of competing and often overlapping institutions have sprung up over the years, including the International Court of Justice ("ICJ"),[53] regional dispute settlement bodies such as the NAFTA tribunals,[54] investor-state arbitration mechanisms such as the International Centre for Settlement of Investment Disputes ("ICSID"),[55] and even municipal courts applying local laws and the principles of comity.[56] To be sure, this variety of dispute settlement mechanisms has caused numerous problems of its own, not least of which being duplication of hearings and often fragmentation of jurisdictions.[57]

Nonetheless, these mechanisms are often preferable because they can at least provide some sort of acceptable remedy for aggrieved parties. The WTO is only empowered to provide prospective rather than retrospective remedies, and it can only impose the burden for securing those remedies on states.[58] Most private investors seek damages when they bring a complaint to one of these tribunals, thereby rendering the DSB simply inadequate for the demands of many of the global economy's most significant players.[59]

C. Labor and the Environment

While it is true that the WTO does provide a number of exceptions under GATT Article XX that pertain to non-economic state objectives such as protection of public morals and public health concerns,[60] it is essentially silent on labor standards and decidedly unhelpful in regards to environmental protections.

Currently, WTO rules and disciplines do not even apply to labor standards.[61] This is remarkable when one considers the enormous role that labor conditions play in assessments of comparative advantage. More importantly, improvements in labor standards are one of the most consistent and fundamental demands posed by the electorates of many countries around the world, but especially those of developing countries.[62] An absence or diminution of labor standards in one

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53. Statute of the International Court of Justice, June 26, 1945, 59 Stat. 1055, 33 U.N.T.S. 933.

54. *See* North American Free Trade Agreement, U.S.-Can.-Mex., Dec, 17, 1992, 32 I.L.M. 289 (1993); *see also Overview of the Dispute Settlement Provisions*, NAFTA SECRETARIAT, https://www.nafta-sec-alena.org/Home/Dispute-Settlement/Overview-of-the-Dispute-Settlement-Provisions#Chapter11 (last visited Apr. 20, 2016).

55. *About ICSID*, INTERNATIONAL CENTRE FOR SETTLEMENT OF INVESTMENT DISPUTES, https://icsid.worldbank.org/apps/ICSIDWEB/about/Pages/default.aspx (last visited Apr. 20, 2016).

56. Andrea K. Bjorklund, *Private Rights and Public International Law: Why Competition Among International Economic Law Tribunals Is Not Working*, 59 HASTINGS L.J. 241, 246-56 (2007).

57. *Id.* at 258-61.

58. Thomas Sebastian, *World Trade Organization Remedies and the Assessment of Proportionality: Equivalence and Appropriateness*, 48 HARV. INT'L L. J. 337, 369 (2007).

59. Dan Sarooshi, *Investment Treaty Arbitration and the World Trade Organization: What Role for Systemic Values in the Resolution of International Economic Disputes?* 49 TEX. INT'L L.J. 445, 461 (2014).

60. GATT 1994, *supra* note 7, at art. XX.

61. World Trade Organization, Briefing Note, *Trade and Labour Standards: Subject of Intense Debate.*, http://www.wto.org/english/thewto_e/minist_e/min99_e/english/about_e/18lab_e.htm (last visited Feb. 5, 2016).

62. World Trade Organization, Briefing Note, *Trade and Labour Standards: A Difficult Issue for*

country can cause serious tension for the workers of another country when they are made to compete as though they were on an equal footing.[63] This issue inevitably poses political problems for the leaders of all WTO member states. The absence of guidance on this most basic concern is why many post-WTO PTAs feature agreements and the establishment of standards on this topic.[64] The side agreement to NAFTA, the North American Agreement on Labor Cooperation ("NAALC"), is an early example of the recognition that contracting parties to PTAs pay to this political necessity.[65] Just over a decade later, the passage of the Central American Free Trade Agreement ("CAFTA") expanded on this framework, including an entire chapter on labor standards.[66] The efficacy of these mechanisms is hotly debated,[67] but these examples demonstrate the naiveté that characterizes a trade regime that pretends it can overlook such a foundational economic concern. Trade agreements that omit this consideration are doomed to perceptions of inadequacy.

Another growing concern for the global economy is environmental standards.[68] These too play an enormous role in assessments of comparative advantage. A country that does not protect its environment is far more appealing for foreign investors than one that does, at least in many sectors such as mining, logging, or chemical engineering (to name a few).[69] Countries that have painstakingly developed environmental protections are understandably weary of being made to compete with countries that have not. As mentioned above, GATT Article XX does in fact provide some protections under subsection (b) for states to craft policy that is "necessary to protect human, animal or plant life"[70] or under subsection (g) for measures that are "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption."[71] While these inclusions are noteworthy, they hardly address the fundamental question of whether or not an absence of environmental protections constitutes an unfair distortion of trade. Moreover, a system in which countries can secure an advantage over others by carelessly pillaging their own environment is tantamount to a race to the bottom

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Many WTO Member Governments,
https://www.wto.org/english/thewto_e/minist_e/min01_e/brief_e/brief16_e.htm.

63. Drusilla K. Brown, *Labor Standards: Where Do They Belong on the International Trade Agenda?*, 15 J. ECON. PERSPECTIVES 89 (2001).

64. Samira Salem & Faina Rozental, *Labor Standards and Trade: A Review of Recent Empirical Evidence*, J. INT'L COM & ECON. 1 (2012).

65. Frank H. Bieszczat, *Labor Provisions in Trade Agreements: From the NAALC to Now*, 83 CHI.-KENT L. REV. 1387, 1388 (2008).

66. Central American-Dominican Republic-United States Free Trade Agreement, U.S.-Costa Rica-Dom. Rep.-El Sal.-Guat.-Hond.-Nicar., May 28, 2004, Chapter 16, 43 I.L.M. 51 [hereinafter CAFTA].

67. Kimberly A. Elliott, *Labor Standards, Development, and CAFTA*, THE PETERSON INST. FOR INT'L ECON. (2004), http://www.iie.com/publications/pb/pb04-2.pdf (last visited Feb. 5, 2016).

68. PATRICK F. J. MACRORY ET AL., THE WORLD TRADE ORGANIZATION: LEGAL, ECONOMIC AND POLITICAL ANALYSIS 145 (2005).

69. *Id.*

70. GATT 1994, *supra* note 7, at art. XX, ¶ b.

71. *Id.* at art. XX, ¶ g.

that many would prefer to avoid. For this reason, it is no surprise that more recent PTAs such as CAFTA include an entire chapter on environmental protections and a secretariat empowered to investigate state compliance.[72] These things do matter and they cannot be overlooked.

IV. THE WORLD TODAY

As already mentioned, the Doha Round of negotiations has been ongoing for more than a decade, and few if any expect breakthroughs any time soon.[73] Meanwhile, virtually every country in the world has gone about deepening its network of trade relations in forums removed from the auspices of the WTO.[74] This should come as no surprise, however, when one considers the stark contrasts between the world of today and that of 1995. In the interim, the economies of India, Brazil, and especially China, have grown at an incredible and unforeseeable rate.[75] World population has increased by over a billion. Left-leaning populists have been elected across South America and Russia has reassumed a frequently oppositional stance to Western initiatives. Global financial crises have shaken faith in Western institutions and the dawn of the internet has altered how people from around the world communicate and share information.[76] Climate change has progressed to the point of inevitably pending crises.[77] The crafters of the WTO seem to have anticipated none of the strains these developments would impose. Perhaps when Francis Fukuyama declared "The End of History" in 1992, they actually believed him.[78] In any case, the WTO in its current form is unequipped to act as the voice of authority that the world needs to resolve any of these pressing global economic concerns. The world simply is not ready or even interested in abiding by its norms.

A. The New Powers

When the Cold War ended, the United States assumed a position of unprecedented power.[79] No nation could effectively counter its influence, and

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72. CAFTA, *supra* note 66, Chapter 17.

73. Green, *supra* note 49.

74. Matthew Wilson, *Friend or Foe? Regional Trade Agreements and the WTO*, INT'L CTR. FOR TRADE AND SUSTAINABLE DEV. (Feb. 1, 2008) http://www.ictsd.org/bridges-news/bridges/news/friend-or-foe-regional-trade-agreements-and-the-wto.

75. Jerry Harris, *Emerging Third World Powers: China, India and Brazil*, 46 RACE & CLASS 7, 8 (2005), http://graduateinstitute.ch/files/live/sites/iheid/files/sites/mia/users/Rachelle_Cloutier/public/Drager%20Global%20Public%20Health/Harris%20Emerging%20third%20world%20powers%20China%20India%20Brazil.pdf.

76. Mindi Orth, *Technology & How We Communicate*, CHRON.COM, http://smallbusiness.chron.com/technology-communicate-27322.html (last visited Feb. 8, 2016).

77. Ben Brumfield, *Global warming is epic, long-term study says*, CNN (Mar. 8, 2013), http://www.cnn.com/2013/03/08/world/world-climate-change/.

78. *See generally*, FRANCIS FUKUYAMA, THE END OF HISTORY AND THE LAST MAN (1992)

79. *See generally*, Kylie Poulin, *Intervention from Above: The United States, Russia, and Power Transition in the Middle East*, IND. UNIV. DEP'T OF POL. SCI., http://polisci.indiana.edu/undergraduate/theses/Poulin.pdf.

given its ascent to global dominance, few dared to question the wisdom of its economic prescriptions.[80] Today, however, there are several nations that—while not yet finding themselves on exactly equal footing with the U.S.—have secured enough power and influence to resist and even counter the objectives of the United States. Foremost amongst these powers is China.[81] In 1995, China's GDP was roughly $727 billion.[82] Today, that number has skyrocketed to over $9 trillion.[83] China holds over $1.3 trillion in U.S. debt.[84] Along with India and Russia, it recently launched "The New Development Bank," which is intended to act as a rival institution to the World Bank.[85] Similar transformations are also happening in various other developing countries.[86]

These shifts have been very difficult to cope with for the Western powers that crafted the WTO. When they designed the system, as already mentioned, they likely did so under the impression that their power would somehow continue unrivaled. Many commentators have made note of the irony this situation presents. For example, it has been noted that "[t]he west, which has been the traditional defender of free trade – because free trade always favors the most powerful and advanced economies – is likely to run for cover and put up protectionist barriers, unable to cope with the political, social and economic implications of the rise of China."[87] Such a turn of events would clearly demonstrate that not even the U.S.

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80. David Pierce, *America in the Post War Period*, STUDENT PULSE, http://www.studentpulse.com/articles/2/americain-the-post-war-period?utm_expid=22625156 1.jO__KIIlQVuEPc9uLGsmiQ.0&utm_referrer=https%3A%2F%2Fwww.google.com (last visited Feb.10, 2016).

81. *See generally,* Andrew Soergel, *America's Days Are Numbered as the World's Top Economy*, U.S.NEWS (Dec. 28, 2015), http://www.usnews.com/news/articles/2015-12-28/americas-days-are-numbered-as-the-worlds-top-economy.

82. *See* Thitapha Wattanapruttipaisan, *The Topology of ASEAN FTAs, with Special Reference to IP-Related Provisions in* INTELLECTUAL PROPERTY AND FREE TRADE AGREEMENTS IN THE ASIA-PACIFIC REGION 109, 116, n.14 (Christoph Antons et al. eds., 2015) (stating China's GDP was $700.2 billion in 1995); World Heritage Encyclopedia, *Historical GDP of the People's Republic of China*, WORLD PUBLIC LIBRARY, http://www.worldlibrary.org/articles/Historical_GDP_of_the_People's_Republic_of_China (last visited Apr. 20, 2016) (providing "a list of China's historical domestic product (GDP) values").

83. *Statistical Communique of the People's Republic of China on the 2013 National Economic and Social Development*, NAT'L BUREAU OF STAT. OF CHINA (20 Jan. 2014) http://www.stats.gov.cn/english/PressRelease/ 201401/t20140120_502079.html.

84. Max Fisher, *This surprising chart shows which countries own the most US debt*, Wash. Post, Oct. 10, 2013, http://www.washingtonpost.com/blogs/worldviews/wp/ 2013/10/10/this-surprising-chart-shows-which-countries-own-the-most-u-s-debt/.

85. Damien Sharkov, *Russia, China, India to Launch Rival to World Bank*, NEWSWEEK (Jul. 9, 2014), http://www.newsweek.com/russia-china-india-ready-launch-rival-world-bank-258058.

86. *"Rise of South" Transforming Global Power Balance, Says 2013 Human Development Report*, UNITED NATIONS DEV. PROGRAMME (Mar 14, 2013), http://www.undp.org/content/undp/en/home/presscenter/pressreleases/2013/03/14/-rise-of-south-transforming-global-power-balance-says-2013-human-development-report.html.

87. Martin Jacques, *The Death of Doha Signals the Demise of Globalisation*, THE GUARDIAN (Jul. 13, 2006), http://www.theguardian.com/commentisfree/2006/jul/13/comment.globalisation.

has full faith in the wisdom of the "Washington Consensus."[88]

B. Climate Change

The overwhelming global scientific consensus is that human behavior is influencing climate change in a way that is dangerous for the health and wellbeing of our species.[89] This year is likely to be the hottest in known history.[90] The polar ice caps are melting at an incredible rate and threatening to raise sea levels worldwide, imperiling substantial portions of many of Earth's most densely populated metropolises.[91]

As stated above, the WTO has very little to say about environmental regulations, and even less power to enforce them.[92] For an institution that aspires to dictate global norms, this is unacceptable. A trade regime that does not recognize and prioritize the survival of our species and make enforceable demands in line with that mandate cannot expect to be deferred to in a future inevitably marked by environmental calamity. On the contrary, a regime which deems such pressing concerns unworthy of attention may well be understood in retrospect as being much of the problem. Regional, bilateral, and even non-governmental agreements will—as they have already been doing—be made to step in to fill the void and establish new means for imposing restrictions on the most harmful economic policies.

V. CONCLUSION

When Jagdish Bhagwati warned of the danger posed by an overwhelming multitude of PTAs,[93] he was correct in believing that these would dilute the multilateral system proffered by the WTO. As the failure of the Doha talks and the resultant deferral to PTAs in their wake has clearly demonstrated, that dilution has resoundingly occurred. More importantly though, that PTAs were occurring at the time of the WTO's formation, and that they have occurred with increasing frequency ever since, is ample demonstration that few if any ever really wanted or believed in the promise of the WTO in the first place.

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88. *See generally,* STEVEN ORTLEPP, A NEW LOOK AT THE PROPHECIES OF DANIEL 153 (2010)

89. Intergovernmental Panel on Climate Change, Climate Change 2014 Synthesis Report Contribution of Working Groups I, II and III to the Fifth Assessment Report of the IPCC (2014), https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full.pdf.

90. Carol J. Williams, *2014 set to be hottest year on record, U.N. climate agency reports*, L.A. Times, Dec. 3, 2014, http://www.latimes.com/world/europe/la-fg-world-climate-20141203-story.html (last visited Dec. 5, 2014).

91. Zoe Schlanger, *Antarctica Ice Sheet Sheds an Everest of Ice Every Two Years: Study*, NEWSWEEK (Dec. 5, 2014) http://www.newsweek.com/key-ice-sheet-antarctica-losing-everest-sized-volume-ice-every-two-years-study-289669.

92. *See generally,* Vandana Shiva, *WTO deemed unfit for environmental management*, UNIV. OF WOLLONGONG (Mar. 24, 1994), http://www.uow.edu.au/~sharonb/STS300/equity/economic/WTOnews/wtonews4.html.

93. Bhagwati, *supra* note 2.

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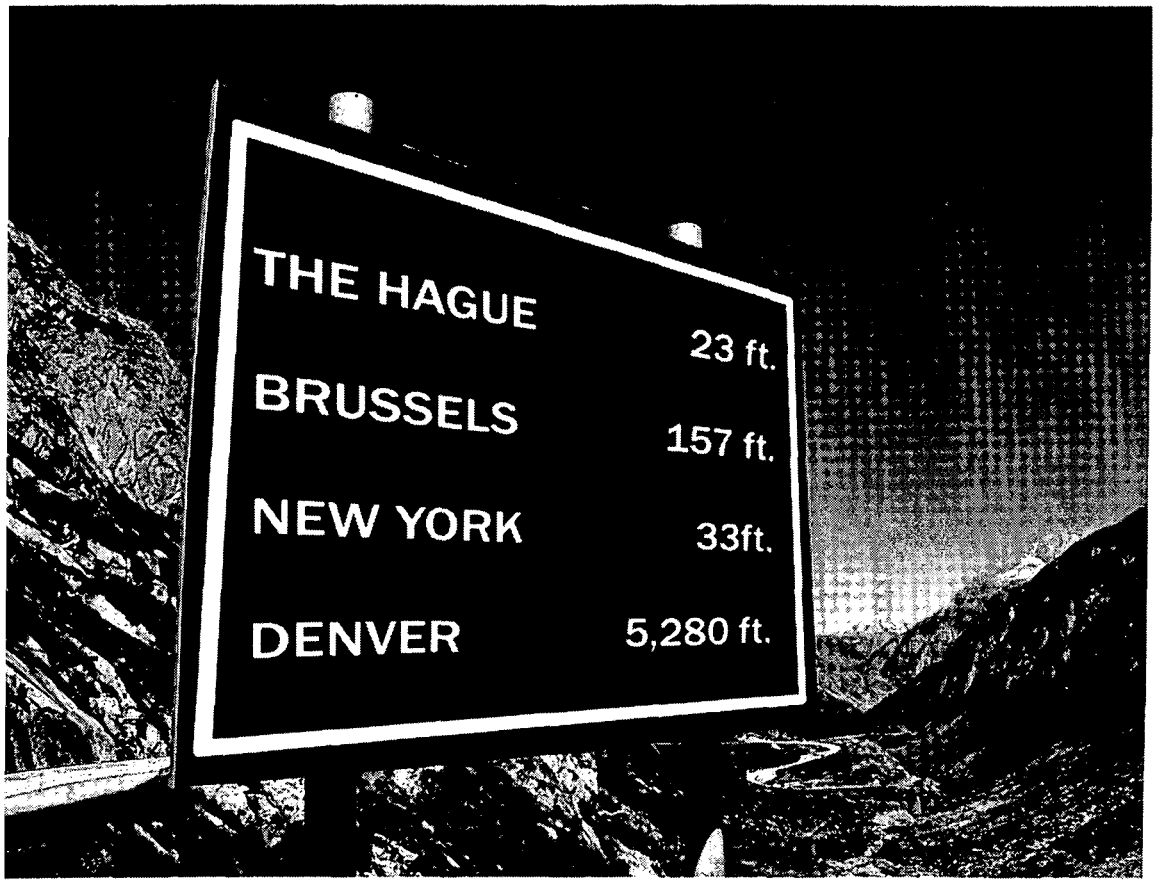

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