2016

Introduction to Model Laws on Lighting

Lakshman Guruswamy
University of Colorado Law School

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]

---

*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

---

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

---

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

---

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*

---

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.

---

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"),

---

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

---

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.