

SUSTAINABLE DEVELOPMENT: ENERGY, JUSTICE, AND WOMEN

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ABSTRACT¹

This article will first offer a functional synopsis relevant to its remit, of the concept of sustainable development (SD) embodied in international law and policy that reflects a tension between economic and social claims as contrasted with environmental protection. While the dominant place acquired by the economic and social dimensions of SD will be recognized, it will argue consistent with the predicate of justice discussed in the article, that the protection of the human environment encompasses the plight of the energy poor and their women and children. Second, the article will delineate the contours of one of the great developmental problems of our time: lack of access to energy. Lack of access to safe energy affects the poorest peoples of the world (the energy poor (EP)), located largely in sub-Saharan Africa, and parts of Asia. This part will demonstrate how the burdens caused by lack of access to energy inordinately and most painfully, impact women and children. Finally, the

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¹ This article relies on and sometimes reproduces the previous and pending work of the author. Such reliance will be attributed, and noted.

article will argue that the social, economic, and environmental dimensions of SD are all premised on a major unarticulated concept of justice, and that SD should be prioritized to redress the problems faced by women.

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SUSTAINABLE DEVELOPMENT: A FUNCTIONAL SYNOPSIS²

This Part aims to locate energy poverty within the broader framework of Sustainable Development (SD). It will focus on how economic and social development came to be recognized in policy and law as an inextricable component of SD. The major conferences on environment and development during the last half century, and the political and legal documents resulting from them, demonstrate how this happened. Although the two competing and component attributes of SD—economic development and environmental protection—began jostling for ascendancy at the 1972 Stockholm Conference on the Human Environment (Stockholm), the term “SD” had not yet come into use. Whatever the relative tension among the three dimensions of economic and social development and environmental protection, there is little doubt that the energy poor and particularly the predicament of women and children are the concern of all three dimensions of SD. While it is perhaps more obvious that social and economic development are directly applicable to the EP, the definition of environment to include the human environment as accepted at Stockholm, clearly extends environmental protection to energy poverty. The 1972 Stockholm Conference and its Declaration laid the foundations for forging the then unarticulated concept of SD.

A. 1972 STOCKHOLM CONFERENCE ON THE HUMAN ENVIRONMENT

Despite the fact that it had not been named as such, the 1972 Stockholm Conference on the Human Environment³ (Stockholm) may well have been the chrysalis from which SD emerged as an international concept. Stockholm was primarily conceived as a conference about the environment. Policy makers and influential segments of the intelligentsia within industrialized countries began painting an apocalyptic picture of the growth of population, pollution, and the exhaustion of natural resources, leading to a breakdown of the carrying capacity of the earth. Along with a growing awareness of environmental phenomena, such as

² This Part relies generally upon the author’s following works: INTERNATIONAL ENERGY & POVERTY: THE EMERGING CONTOURS (Lakshman Guruswamy ed., 2016); LAKSHMAN GURUSWAMY, GLOBAL ENERGY JUSTICE: LAW AND POLICY (2016); LAKSHMAN GURUSWAMY, INTERNATIONAL ENVIRONMENTAL LAW (5th ed. 2017).

³ U.N. Conference on the Human Environment, *Report of the United Nations Conference on the Human Environment*, U.N. Doc. A/CONF.48/14/Rev.1 (June 5–16, 1972).

acid rain and the poisoning of Japanese fisherman in Minamata Bay, a cross section of common people, influential elites, and decision makers in the industrial world became fearful and apprehensive of the frailty of the planet earth.⁴ In the face of these concerns, the United Nations (UN) moved to convene a special international environmental conference to discuss the human environment in 1972.

While concern about the environment motivated many rich, industrialized countries, the poor, developing countries did not share the view that environmental degradation was the biggest threat facing the planet. For developing countries, poverty and the alleviation of misery remained a more poignant and real problem. Developing countries believed that greater development leading to material prosperity far outweighed any damage that might be caused by resource use and pollution. They were dismissive of the claim that industrialized countries were genuinely trying to steer them away from pitfalls into which the industrialized countries had already fallen. Developing countries also expressed resentment over the fact that industrialized countries—whose drive toward wealth had already consumed a great part of the earth's resources and led to devastating pollution—were now asking the developing countries to remain poor, and more gallingly, to pay for the cleanup, restoration, and conservation of the earth. Moreover, many developing countries feared that new environmental standards adopted by industrialized countries would effectively bar the entry of their goods into industrial markets.⁵

This ideological impasse presented a formidable challenge to international environmental diplomacy. The question was resolved, as best it might be, by way of a compromise. The essence of that understanding was summed up in the Preamble to the Stockholm Declaration of the UN Conference on the Human Environment (Stockholm Declaration). It stated “[i]n the developing countries most of the environmental problems are caused by under-development” and that industrialized countries must “direct their efforts to development, bearing in mind their priorities and the need to safeguard and improve the environment.”⁶ Similarly, the industrialized countries were exhorted to

⁴ BARBARA WARD & RENÉ DUBOS, *ONLY ONE EARTH: THE CARE AND MAINTENANCE OF A SMALL PLANET* (1st ed. 1972).

⁵ *Report of the U.N.*, *supra* note 3, ¶ 47.

⁶ *Id.* at ch. I ¶ 4.

make efforts to reduce the developmental gap between themselves and the developing countries.

B. 1982 UNITED NATIONS CONVENTION ON THE LAW OF THE SEA (UNCLOS)

Negotiations about the law of the sea had commenced even before the Stockholm Conference. Those negotiations lasted until 1982, when the UN Convention on the Law of the Sea (UNCLOS) was opened for signature. UNCLOS finally came into force on November 16, 1994.⁷ It is the strongest comprehensive environmental treaty now in existence or likely to emerge for quite some time.⁸

While UNCLOS does not use the term “sustainable development,” the two elements of SD (as then conceived) dealing with economic development, and environmental protection or conservation, are embodied in it. Within their 200-mile exclusive economic zone (EEZ), UNCLOS confers both rights and duties on states to explore, economically exploit, conserve and manage the natural resources.⁹ In the high seas beyond national jurisdiction states are required to maintain or restore harvested species at levels that can produce maximum yield.¹⁰ Moreover, part XI on the Protection and Preservation of the Marine Environment deal with the various ways in which states are obliged to protect and preserve the marine environment.¹¹ In sum, UNCLOS attempted to balance economic development and environmental protection, and in doing so established the importance of SD as embracing not only the atmosphere and land but also the oceans.

C. 1983 WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT (BRUNDTLAND COMMISSION)

Despite the uneasy truce reflected in the Stockholm Declaration, the persistent clash of two world views, one asserting environmental protection and the other economic development, continued to impede the

⁷ United Nations Convention on the Law of the Sea art. 308, ¶ 1, *opened for signature* Dec. 10, 1982, 1833 U.N.T.S. 397 (entered into force Nov. 16, 1994).

⁸ *Letter of Transmittal from the President of the United States to the United States Senate*, 7 GEO. INT'L ENVTL. L. REV. 77, 120 (1994).

⁹ *Id.* at 111–12.

¹⁰ *Id.* at 133.

¹¹ *Id.* at arts. 192–237.

progress of SD. In order to resolve this problem, the World Commission on Environment and Development (also called the Brundtland Commission) was created by the General Assembly of the UN in 1983 and charged with proposing long-term environmental strategies for (SD). That elusive term was not defined by the UN. After four years of deliberation and worldwide consultation, the Brundtland Report, *Our Common Future*, articulated the paradigm on which the Earth Summit, and indeed SD, has since been based.¹² In essence, it rejected the despairing thesis that environmental problems were past repair, spiraling out of control, and could only be averted by arresting development and economic growth resulting in a policy of no growth. Instead, it argued that economic growth was both desirable and possible within a context of SD.¹³ In order to draw up a global plan for SD, the Brundtland Commission called for an international conference to act as the successor to the Stockholm Conference and carry forward its legacy. The UN General Assembly complied by convening the 1992 Earth Summit and directing it to further develop SD.¹⁴

D. 1992 UNITED NATIONS CONFERENCE ON ENVIRONMENT & DEVELOPMENT

The Earth Summit, held in Rio de Janeiro, Brazil, in June 1992, was attended by over 180 countries and 100 heads of state, and heralded as the greatest summit level conference in history. It departed somewhat from its original agenda, but resulted in five international instruments, predicated on SD: (1) the Rio Declaration on Environment and Development,¹⁵ (2) Agenda 21,¹⁶ (3) the Global Consensus on Sustainable Development of Forests (Forestry Declaration),¹⁷ (4) United

¹² World Comm'n On Env't & Dev., *Our Common Future*, U.N. Doc. A/CONF.42/427, annex I (June 16, 1987), <http://www.un-documents.net/our-common-future.pdf>.

¹³ *Id.* at ¶ 3.

¹⁴ G.A. Res. 43/196, United Nations Conference on Environment and Development (Dec. 20, 1988).

¹⁵ Rio Declaration on Environment and Development, June 14, 1992, U.N. Doc. A/CONF.151/26/Rev.1, reprinted in 31 I.L.M. 874 (1992).

¹⁶ United Nations Conference on Environment and Development, *United Nations Framework Convention on Climate Change*, May 9, 1992, U.N. Doc. A/AC.237/18, reprinted in 31 I.L.M. 849 (1992) [hereinafter *UNFCCC*].

¹⁷ Report of the United Nations Conference on Environment and Development, *Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests*, U.N. Doc. A/CONF.151/26 (Vol. 3), annex III (August 14, 1992).

Nations Convention on Climate Change (UNFCCC),¹⁸ and (5) the Convention on Biological Diversity (CBD).¹⁹

We very briefly advance some conclusions about the environmental dimensions of the 1992 Earth Summit, dealing first with the legally binding treaties and then moving on to the non-legally binding instruments. To begin, it is worth emphasizing a premise reiterated and reaffirmed in all the documents (legal and otherwise) emerging from the Earth Summit. It is that the right of developing countries to economic advancement cannot be divorced from the pursuit of environmentalism and climate change.

We start with the UNFCCC, which is the most important treaty dealing with climate change because it is a treaty to which all nations of the world including the United States is a party. The objective of the UNFCCC is to “prevent dangerous anthropogenic interference with the climate system.”²⁰ The parties make commitments to mitigate climate change by addressing anthropogenic emissions and adapting to the impacts of climate change.²¹ It is important to understand the rationale behind this objective.

The mitigation (cutting down or reduction) of carbon dioxide emissions addresses the environmental problems arising from the atmospheric accumulation of carbon dioxide resulting in a global greenhouse effect (GHG). A GHG effect occurs when some of the heat which reaches the earth is trapped in it and cannot get out back into the atmosphere.²² The result is a GHG effect causing global climate change that can lead to the catastrophic melting of ice packs in Greenland, a global rise of sea levels, and alteration in weather patterns.²³

The UNFCCC is a treaty addressing climate change and lays the foundation for climate action within the framework of SD. Commencing with its Preamble, UNFCCC makes abundantly clear that responses to climate change should be coordinated with social and economic development “taking into full account the legitimate priority needs of developing countries for the achievement of sustained economic growth

¹⁸ UNFCCC, *supra* note 16.

¹⁹ United Nations Conference on Environment and Development, *Convention on Biological Diversity*, June 5, 1992, U.N. Doc. A/AC.237/18, reprinted in 31 I.L.M. 818 (1992).

²⁰ UNFCCC, *supra* note 16, at art. 2.

²¹ *Id.* at art. 4 (1) (b) & (e).

²² LAKSHMAN GURUSWAMY, INTERNATIONAL ENVIRONMENTAL LAW 243–44 (5th ed. 2017).

²³ *Id.* at 253–56.

and the eradication of poverty.”²⁴ Moreover, the UNFCCC stipulates that the parties have a right to and should promote SD policies, taking into account that economic development is an essential component of action against climate change.²⁵

Furthermore, as we have noted, the UNFCCC coalesced with the other widely accepted treaty adopted at the Earth Summit: The Convention on Biological Diversity (CBD),²⁶ by forcefully and unequivocally expressing the developmental priority of SD. Article 4(7) of the UNFCCC, and Article 20(4) of the CBD, reaffirm 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.”

The importance of economic development and the eradication of poverty are also affirmed in the nonbinding agreements or declarations embodying “soft law”²⁷ norms. Treaties and custom generally create binding obligations on nations, while soft law sources are largely aspirational. The Rio Declaration on Environment and Development (the Rio Declaration) continues to emphasize the importance of economic development while pursuing environmental protection. For example, the nascent right to a wholesome environment, embodied in the Stockholm Declaration, was replaced by a right to development.²⁸ The Rio Declaration refers to “developmental and environmental needs of present and future generations.”²⁹ This re-formulation impliedly negates or weakens the obligation to conserve expressed in the Stockholm Declaration. In a similar vein, the obligation to *conserve*, implied by the duty to protect the environment for the benefit of future generations, found in the Stockholm Declaration, is displaced in the Rio Declaration by a right to *consume* or *develop*.³⁰ Furthermore, the obligation not to cause transboundary damage, contained in Principle 21 of the Stockholm Declaration, was weakened in the Rio Declaration by the addition of

²⁴ UNFCCC, *supra* note 16, at preamble.

²⁵ *Id.* at art. 3 ¶ 4.

²⁶ *Convention on Biological Diversity*, *supra* note 19, at art. 20 ¶ 4.

²⁷ Soft law is found in political instruments such as declarations, codes, guidelines and recommendations, and is to be contrasted to hard law found in legal instruments such as treaties. These political instruments are called soft law because they have the potential to generate state practice and *opinion juris* over time, and become hard law either as custom or by incorporation or adoption by a subsequent treaty. *International Environmental Law*, *supra* note 2, at 26–32.

²⁸ *Rio Declaration on Environment and Development*, *supra* note 15, at princ. 2.

²⁹ *Id.* at princ. 3.

³⁰ *Id.* at princ. 2.

crucial language authorizing States “to exploit their own resources pursuant to their own environmental and *developmental* policies.”³¹

Agenda 21 was a second institutional result of the Earth Summit.³² The Rio Declaration incorporated several allowances for nations’ developmental needs, perhaps at the expense of more environmentally protective provisions found in the Stockholm Declaration.

In examining the individual strands that together comprise the braided rope of SD in 1992, it is important to understand the conceptual evolution of these strands. The present concept of SD that has evolved over the years now possesses three elements: economic development, social development and environmental protection. In 1992, SD remained a syncoated concept consisting of economic development and environmental protection.

E. 2000 MILLENNIUM SUMMIT AND THE MILLENNIUM DEVELOPMENT GOALS (MDGs)

The Millennium Summit held in 2000 upstaged the Earth Summit of 1992 by hosting the largest gathering of world leaders in history as of that date.³³ The Millennium Summit adopted the UN Millennium Declaration, committing nations to a new global partnership to reduce extreme poverty and setting out a series of time-bound targets, with a deadline of 2015, which became known as the Millennium Development Goals (MDGs).³⁴

The MDGs distilled the results of a wide array of global processes involving diverse actors over several years. Apart from conferences on SD and the environment, many international goals and targets were established through a series of other major subject-specific conferences in the 1990s. The agendas spanned education (Jomtien

³¹ *Id.* (emphasis added).

³² United Nations Conference on Environment and Development, *Agenda 21*, June 13, 1992, U.N. Doc. A/CONF.151/26/Rev.1 (vols. I-III) (1992).

³³ *UN summit agenda: The largest gathering of world leaders in history meets in New York to discuss the role of the United Nations in the 21st century*, BBC NEWS (Sept. 7, 2000), <http://news.bbc.co.uk/2/hi/904903.stm>.

³⁴ *We Can End Poverty: Millennium Development Goals and Beyond 2015*, UNITED NATIONS, <http://www.un.org/millenniumgoals/bkgd.shtml> (last visited Feb. 5, 2018) [hereinafter *Millennium Development*].

1990),³⁵ children (New York 1990),³⁶ population (Cairo 1994), social development (Copenhagen 1995),³⁷ and the status of women (Beijing 1995).³⁸ In 1995 and 1996, the OECD Development Assistance Committee “set out to summarize the disparate agreements into a shorthand set of international development goals (IDGs) that could help motivate donors.”³⁹

The MDGs were time-bound and quantified targets for addressing extreme poverty in its many dimensions, including income poverty, hunger, disease, and lack of adequate shelter, while promoting gender equality, education, and environmental sustainability.⁴⁰ They are expressed as individual benefits, granting each person on the planet the right to health, education, shelter, and security.

All 189 United Nations member states at the time (there are 193 currently), and at least 23 international organizations, committed to help achieve the following MDGs by 2015:

1. To eradicate extreme poverty and hunger
2. To achieve universal primary education
3. To promote gender equality
4. To reduce child mortality
5. To improve maternal health
6. To combat HIV/AIDS, malaria, and other diseases
7. To ensure environmental sustainability
8. To develop a global partnership for sustainable development by 2015.⁴¹

An important inter-agency UN evaluation of the MDGs in 2015⁴² demonstrates what the MDGs have achieved or failed to deliver.⁴³ The

³⁵ *Outcomes on Education*, UNITED NATIONS, <http://www.un.org/en/development/devagenda/education.shtml> (last visited Feb. 4, 2018).

³⁶ *World Summit for Children (1990)*, UNITED NATIONS, <http://www.un.org/geninfo/bp/child.html> (last visited Feb. 5, 2018).

³⁷ *World Summit for Social Development 1995*, UNITED NATIONS, <https://www.un.org/development/desa/dspd/world-summit-for-social-development-1995.html> (last visited Feb. 5, 2018).

³⁸ Fourth World Conference on Women, UNITED NATIONS, <http://www.un.org/womenwatch/daw/beijing/fwcwn.html> (last visited Feb. 5, 2018).

³⁹ John W. McArthur, *The Origins of the Millennium Development Goals*, 34 SAIS REV. OF INT’L AFF. 5, 6 (2014).

⁴⁰ *Millennium Development*, *supra* note 38.

⁴¹ *Id.*

⁴² U.N. Dep’t of Economic & Social Affairs, *Millennium Development Goals Report (2015)*, [http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20\(July%201\).pdf](http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf).

progress appears remarkable, and demonstrates the extent to which explicit economic and social goals had become an integral part of SD.

The fact that the MDGs obtained a large increase in ODA to meet the additional funds required is particularly significant. The ODA is an international fund set up under the auspices of the OECD to provide the aid necessary to meet the MDGs.⁴⁴ It is important in this context to point out that many of the poverty reduction goals are being pursued by civil society entities. They include nongovernmental organizations (NGOs), like the Gates Foundation,⁴⁵ and many other nonprofit associations operating independently of government, working toward social or political objectives, like the International Committee of the Red Cross,⁴⁶ Oxfam,⁴⁷ and CARE,⁴⁸ or engage in environmental analysis and advocacy like Greenpeace,⁴⁹ World Wildlife Fund (WWF),⁵⁰ and the World Conservation Union (IUCN).⁵¹ They may be financed by private donations, international organizations, governments, or a combination of these. Some, like the Gates Foundation, are privately endowed while others, such as Greenpeace or WWF, depend on grass roots member support.⁵²

Churches and religious organizations (faith groups) play a major part in philanthropy, and are part of civil society. A recent report revealed that religiously affiliated people not only give generously to their religious congregations but are more prone to give to charities of any kind.⁵³ It has been found that religious leaders and institutions are

⁴³ A more detailed assessment of the results of the MDGs is found in the author's works listed in note 2.

⁴⁴ Official development assistance (ODA) is a term coined by the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD) to measure aid. See *DAC Members*, OECD, <http://www.oecd.org/dac/dacmembers.htm> (last visited Feb. 5, 2018).

⁴⁵ *HIV Strategy Overview*, GATES FOUNDATION, <http://www.gatesfoundation.org/What-We-Do/Global-Health/HIV> (last visited Feb. 5, 2019).

⁴⁶ INTERNATIONAL COMMITTEE OF THE RED CROSS, <https://www.icrc.org/> (last visited Feb. 6, 2019).

⁴⁷ OXFAM, <https://www.oxfam.org/> (last visited Feb. 6, 2019).

⁴⁸ CARE, <https://www.care.org> (last visited Feb. 6, 2019).

⁴⁹ GREEN PEACE, <http://www.greenpeace.org/> (last visited Feb. 6, 2019).

⁵⁰ WILDLIFE CONSERVATION SOCIETY, <http://www.wcs.org/> (last visited Feb. 6, 2019).

⁵¹ INTERNATIONAL UNION FOR CONSERVATION OF NATURE, <http://www.iucn.org/about> (last visited Feb. 5, 2019).

⁵² GREENPEACE, <http://www.greenpeace.org/> (last visited Nov. 15, 2018); WORLD WILDLIFE FUND, <https://www.worldwildlife.org/about> (last visited Feb. 5, 2019).

⁵³ GIVING USA SPECIAL REPORT ON GIVING TO RELIGION (2017), <https://givingusa.org/just-released-giving-usa-special-report-on-giving-to-religion/>.

often the most trusted institutions in developing countries.⁵⁴ They are often the first groups that people turn to in times of need and contribute to in times of plenty.⁵⁵

Partnerships are another kind of civil society entity. Partnerships consist of voluntary multi-stakeholder or multi-institutional initiatives and are organized around a common purpose.⁵⁶ Partnerships are also administered as their own entity, distinct from their constituent partners.⁵⁷ Private for-profit corporations embracing manufacturers, agribusinesses, mining, banks, hotels, and others have increased their role in international development.⁵⁸ It is claimed that the private sector in industrialized and developing countries has become a key partner in international development.⁵⁹

I. ENERGY POVERTY

The phenomenon of energy poverty, while found among the poorest people in the world, more profoundly and disproportionately affects women and children. Principles of law and justice, that provide the jurisprudential foundations of SD, call on governments and civil society to address this phenomenon. This Part first discusses the importance of energy to development. It then examines specific dimensions of energy poverty and its inordinate impacts on women.

⁵⁴ DEP'T FOR INT'L DEV., UKAID, FAITH PARTNERSHIP PRINCIPLES: WORKING EFFECTIVELY WITH FAITH GROUPS TO FIGHT GLOBAL POVERTY 3 (2012), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/67352/faith-partnership-principles.pdf.

⁵⁵ *Id.* at 1.

⁵⁶ UNITED NATIONS DEP'T OF ECON. & SOC. AFF./DIV. FOR SUSTAINABLE DEV., MULTI-STAKEHOLDER PARTNERSHIPS IN THE POST-2015 DEVELOPMENT ERA: SHARING KNOWLEDGE AND EXPERTISE TO SUPPORT THE ACHIEVEMENT OF THE SUSTAINABLE DEVELOPMENT GOALS 5 (June 16, 2015), https://sustainabledevelopment.un.org/content/documents/7366Partnerships_Knowledge_BackgroundPaper_final.pdf.

⁵⁷ *Id.* at 5.

⁵⁸ BRADFORD STRICKLAND, CREATIVE ASSOCS. INT'L, TRENDS IN GLOBAL DEVELOPMENT: SURVEY OF TRENDS IN PRIVATE SECTOR PARTNERSHIPS FOR INTERNATIONAL DEVELOPMENT AND MODALITIES FOR ENGAGEMENT, 2 (June 6, 2015), http://www.creativeassociatesinternational.com/wpcontent/uploads/2014/08/Survey_Of_Trends.pdf.

⁵⁹ *Id.* at 3.

A. THE IMPORTANCE OF ENERGY

The presence and impact of energy in the human and social world is essentially ubiquitous.⁶⁰ Energy is a fundamental human need and a driving determinant of human progress.⁶¹ Humans must constantly engage in energy conversions—processes that transform one form of energy into another more useful form.⁶² Moreover, as noted below, the inability to access energy can both cause and perpetuate poverty.

A rich seam of writers and thinkers considered below, spanning the life sciences, mathematics, sociology, anthropology, engineering, and philosophy have explained the central role played by energy in the development of society. They have shown how humans are endlessly engaged in transforming or converting energy found in the environment into energy useful for human purposes. Such energy can be classified as either endosomatic or exosomatic. Transforming food energy into muscular power is endosomatic (or metabolic) energy. Transforming energy outside the human body into useful energy is exosomatic energy. Exosomatic energy is an essential element of societal development.⁶³ They have further illustrated how societies have used energy and have elucidated the interface between the physical or natural phenomena of exosomatic energy, and how technology was used to convert natural resources to energy, as well as the impact of energy on human social systems.

Herbert Spencer (1820–1903) was the first to articulate that a society's ability to harness energy defines what it can produce and thus, that the ability to control and use energy is the basis of both social progress and disparities among societies.⁶⁴ According to Spencer, "human progress . . . is measured by the degree to which simple acquisition is replaced by production—achieved first by manual power, then by animal power, and finally by machine power."⁶⁵ Even though he did not pursue the fuller implications of using resources such as fossil

⁶⁰ Eugene A. Rosa et al., *Energy and Society*, 14 ANN. REV. SOC. 149 (1988) (construing LAKSHMAN GURUSWAMY, *Global Energy Justice: Law and Policy*, ch. 1, § 4 (West, 2017)).

⁶¹ LESLIE A. WHITE, *THE EVOLUTION OF CULTURE: THE DEVELOPMENT OF CIVILIZATION TO THE FALL OF ROME* 33–57 (1959).

⁶² TEACH ENGINEERING, *Energy Forms, States and Conversions*, https://www.teachengineering.org/lessons/view/cla_lesson4_forms_states_conversions (last visited Feb. 6, 2018).

⁶³ MARIO GIAMPIETRO ET AL., *ENERGY ANALYSIS FOR A SUSTAINABLE FUTURE* 27 (1st ed. 2013).

⁶⁴ 3 HERBERT SPENCER, *THE PRINCIPLES OF SOCIOLOGY* 356 (D. Appleton & Co. 1898).

⁶⁵ *Id.* at 362.

fuels as energy, his thesis that energy was a central component of social organization set the stage for a fuller understanding of the role of energy in society.⁶⁶

In the 1950s, the anthropologist Leslie White refined Spencer's ideas by conceptualizing cultural evolution as movement along a continuum, where progress is defined in terms of a linear path from "poor" to "advanced" energy use.⁶⁷ White posited that societies' ability to exploit new, better forms of energy drives development and that access to energy dictates the progress of peoples: "[c]ulture advances as the amount of energy harnessed per capita per year is increased, or as the efficiency of the instrumental means, or the efficiency of conversions which put the energy to work, is improved."⁶⁸ He concluded there was little cultural growth until the nineteenth century and the discovery of fossil fuels, and he argued that the invention of fuel-powered engines inaugurated a new era in culture history,⁶⁹ tremendously increasing the amount of energy under man's control and at his disposal for culture-building.⁷⁰ White further believed that energy is inextricably linked with development based on who has access to energy and control over its production.⁷¹

The sociologist Fred Cottrell further developed and built upon the theories of Spencer and White by considering energy as a limiting factor. According to him, the ability (or inability) to harness energy equates to human capacity for growth.⁷² But unlike White, he recognized that the natural world places a limit, articulated in the second law of thermodynamics, on the amount of energy that can ultimately be harnessed for human use.⁷³

More recently, the economists Nicholas Georgescu-Roegen⁷⁴ and Herman Daly,⁷⁵ advanced this theme and challenged economic orthodoxy

⁶⁶ Andrew M. McKinnon, *Energy and Society: Herbert Spencer's Energetic Sociology of Social Evolution and Beyond*, 10 J. CLASSICAL SOC. 439, 439–40 (2010).

⁶⁷ WHITE, *supra* note 61, at 33–57.

⁶⁸ *Id.* at 56

⁶⁹ Leslie White, *Energy and the Evolution of Culture*, 45 AM. ANTHROPOLOGIST 335, 345 (1943).

⁷⁰ *Id.* at 347

⁷¹ WHITE, *supra* note 61, at 254, 260.

⁷² ED COTTRELL, *ENERGY AND SOCIETY: THE RELATION BETWEEN ENERGY, SOCIAL CHANGE, AND ECONOMIC DEVELOPMENT* 7 (AuthorHouse rev. ed. 2009).

⁷³ Rosa, *supra* note 60, at 153.

⁷⁴ NICHOLAS GEORGESCU-ROEGEN, *THE ENTROPY LAW AND THE ECONOMIC PROCESS* (iUniverse 1999).

by emphasizing that the second law of thermodynamics dictates limits to economic growth.⁷⁶ The physicist Amory Lovins has suggested that this necessitates shifting to a “soft energy path” emphasizing energy efficiency and renewable energy resources.⁷⁷ Moreover, modern empirical studies have demonstrated that the relationship between energy consumption and wellbeing is not, as White postulated, entirely linear.⁷⁸ Rather, “while a threshold level of high energy consumption is probably necessary for a society to achieve industrialization and modernity, once achieved, there is wide latitude in the amount of energy needed to sustain a high standard of living.”⁷⁹

Applying these insights within a modern milieu reveals that access to energy is essential to development and that the inability to access energy can both cause and perpetuate poverty. This occurs where those without access to modern forms of energy are forced to rely on the inefficient conversion of biomass and human muscle power to complete the daily tasks necessary for their well-being.

B. ENERGY POVERTY AND ITS INORDINATE IMPACTS ON WOMEN⁸⁰

A general lack of access to beneficial energy plays an enormous role in both creating and promulgating the condition of the Least Developed Countries (“LDCs”), perpetuating the phenomenon of energy poverty. Globally, between 1 to 3 billion people (the “Other Third” or “Energy Poor”) have little or no access to beneficial energy to meet their basic needs.⁸¹ More than 95 percent of the Energy Poor (EP) live either in sub-Saharan Africa or developing Asia, predominantly 84 percent in rural areas.⁸² The burdens arising from absence of energy fall

⁷⁵ HERMAN E. DALY, *BEYOND GROWTH: THE ECONOMICS OF SUSTAINABLE DEVELOPMENT* 29–30 (1997).

⁷⁶ *Id.*; GEORGESCU-ROEGEN, *supra* note 74, at 3, 5-6.

⁷⁷ Rosa, *supra* note 47, at 153 (citing A.B. LOVINS, *SOFT ENERGY PATHS: TOWARD A DURABLE PEACE* (London: Penguin Books 1977)).

⁷⁸ Rosa, *supra* note 47, at 153

⁷⁹ *Id.* at 159.

⁸⁰ Most of this Part is taken from Lakshman Guruswamy, *Energy Poverty*, 36 ANN. REV. ENV'T & RES. 139, 140, 147–152 (2011).

⁸¹ United Nations. Sustainable Development Goals, Goal 7 Affordable and Clean Energy (2015), <https://www.un.org/sustainabledevelopment/energy/>.

⁸² STEPHEN KAREKEZI ET AL., *Energy, Poverty, and Development* 153-156, 166 in INT'L INST. FOR APPLIED SYS. ANALYSIS (IIASA), *GLOBAL ENERGY ASSESSMENT – TOWARD A SUSTAINABLE FUTURE* (2012), www.iiasa.ac.at/web/home/research/Flagship-Projects/Global-Energy-Assessment/GEA_Chapter2_development_hires.pdf.

predominantly on women. This Part explores four major areas in which energy poverty impacts the EP, generally, and the specific impacts on women: cooking, lighting, and drinking water and sanitation.

1. Cooking

a. Effects of Cooking with Biomass on the EP, Generally

A large swath of humanity, specifically 715 million people in the LDCs, is caught in a time warp, relying on biomass-generated fire as their principal source of energy.⁸³ These fires are made by burning animal dung, waste, crop residues, rotted wood, other forms of harmful biomass, or raw coal.⁸⁴ The lack of access to modern fuels and overwhelming reliance on biomass for cooking is greatly inefficient and presents adverse consequences for human health.

The EP who rely on biomass for their fuel generally cook over an open fire or with some other form of a traditional stove. This process is exceedingly inefficient, as only about 18 percent of the energy from the fire transfers to the pot,⁸⁵ and indoor air pollution can contain a variety of dangerous pollutants, such as carbon monoxide, nitrous oxides, sulfur oxides, formaldehyde, carcinogens (such as benzene), and small particulate matter.⁸⁶ According to the World Health Organization, exposure to high concentrations of indoor air pollution presents one of the most important threats to public health worldwide, resulting in diseases such as pneumonia, chronic pulmonary disease, lung cancer, asthma, and acute respiratory infections.⁸⁷

b. Effects of Cooking with Biomass on Women Among the EP

Energy poverty as it relates to energy access for cooking disproportionately affects women due to health risk exposure and time spent collecting fuel and cooking. Using biomass for cooking results in 3.5 million premature deaths per year (mortality) and the illness of many

⁸³ GWÉNAËLLE LEGROS ET AL., WORLD HEALTH ORG., UNITED NATIONS DEV. PROGRAMME, THE ENERGY ACCESS SITUATION IN DEVELOPING COUNTRIES: A REVIEW FOCUSING ON LEAST DEVELOPED COUNTRIES AND SUB-SAHARAN AFRICA 16 (Nov. 2009).

⁸⁴ *Id.* at 6.

⁸⁵ HUGH WARWICK & ALISON DOIG, SMOKE—THE KILLER IN THE KITCHEN (2004).

⁸⁶ WORLD HEALTH ORG., FUEL FOR LIFE: HOUSEHOLD ENERGY AND HEALTH 8 (2006).

⁸⁷ WORLD HEALTH ORG., INDOOR AIR POLLUTION TAKES HEAVY TOLL ON HEALTH (Apr. 30, 2017).

millions more (morbidity).⁸⁸ This mortality and morbidity primarily affects women and children. Women are disproportionately affected by the use of biomass for cooking because women are traditionally responsible for cooking and childcare in the home, and they spend more time inhaling the polluted air that is trapped indoors.⁸⁹ Thus, women and children have the highest exposure to indoor air pollution and suffer more than anyone from these negative health effects.⁹⁰ Specifically, women are about twice as likely to be afflicted with chronic pulmonary disease than men in homes using solid fuels.⁹¹ In Africa, where around 730 million people rely on bio-mass for cooking, women and girls are mainly responsible for procuring and using cooking fuels.⁹²

In conflict zones, the search for cooking fuels exposes women and girls to physical and sexual violence.⁹³ For example, in the refugee camps of Darfur, the work of women venturing to collect fuel presented increased risks of being raped.⁹⁴ This is equally the case in other refugee camps, such as those in Somalia.⁹⁵

Additionally, lack of access to cooking fuel forces women and children to spend many hours gathering fuel or spend significant household income purchasing fuel. Women provide 91 percent of households' total efforts in collecting fuel and water in the LDCs, and women have an average working day of 11-14 hours compared to 10 hours on average for men.⁹⁶ A reduction in time spent collecting fuel and cooking enables women to spend more time with their children, tend to other responsibilities, enhance existing economic opportunities; pursue

⁸⁸ IEA: *Biomass fuels linked to 3.5 million deaths annually*, BIOENERGY INSIGHT (July 18, 2016), https://www.bioenergy-news.com/display_news/10771/iea_biomass_fuels_linked_to_35_million_deaths_annually/.

⁸⁹ *Id.*

⁹⁰ GLOBAL ALLIANCE FOR CLEAN COOKSTOVES, CLEAN COOKSTOVES CAN SAVE LIVES AND EMPOWER WOMEN, <http://cleancookingalliance.org/binary-data/RESOURCE/file/000/000/278-1.pdf>.

⁹¹ LEGROS, *supra* note 83.

⁹² Sohna Aminatta Ngum, *Empowering women and girls in the quest for universal energy access for all*, AFR. DEV. BANK (Apr. 25, 2016), <https://www.afdb.org/en/blogs/investing-in-gender-equality-for-africa%E2%80%99s-transformation/post/empowering-women-and-girls-in-the-quest-for-universal-energy-access-for-all-15625/>.

⁹³ *Id.*

⁹⁴ *Cookstoves: Our Story*, BERKELEY LAB, <http://cookstoves.lbl.gov>.

⁹⁵ Lisa Shannon, *The Rape of Somalia's Women is Being Ignored*, GUARDIAN, Oct. 12, 2011, at 1–3.

⁹⁶ *Women and Gender*, GLOB. ALL. FOR CLEAN COOKSTOVES, <http://cleancookstoves.org/impact-areas/women-gender/index.html> (last visited Feb. 8, 2019).

income-generating, educational, and leisure activities; as well as rest—all of which contribute to poverty alleviation.

2. Lighting

a. Lighting-Related Effects on the EP, Generally

Lighting is essential to human progress, and without it, humans would be comparatively inactive for about half of their lifetimes.⁹⁷ The EP also lack access to modern energy solutions for lighting. This lack of access to modern energy solutions for lighting hinders productivity, causes health and physical hazards, and tremendous financial waste.

Many LDCs have extremely hot climates, and depend on agriculture for food. Unfortunately, the heat of the day hinders working during sunlight hours, and severely reduces agricultural productivity, while the absence of artificial light impedes working at night. Moreover, the lack of lighting also creates physical insecurity when venturing out in the darkness, and almost entirely prevents commercial activity after dark.⁹⁸

Almost 500 million of the EP rely on kerosene for illumination,⁹⁹ which has several associated risks. The hazards of kerosene, such as fires, explosions, and poisonings resulting from children ingesting it, are extensively documented.¹⁰⁰ There is evidence implicating kerosene in ailments including the impairment of lung function, asthma, cancer, and tuberculosis.¹⁰¹ The use of kerosene and candles is also costly. Households often spend 10 to 25 percent of their income on kerosene.¹⁰² Over \$36 billion is spent on kerosene annually, \$10 billion of which is spent in sub-Saharan Africa.¹⁰³

⁹⁷ M. LUCKIESH, *ARTIFICIAL LIGHT: ITS INFLUENCE UPON CIVILIZATION* 8 (1920).

⁹⁸ JENNIFER L. DOLEAC & NICHOLAS J. SANDERS, *Under the Cover of Darkness: Using Daylight Saving Time to Measure How Ambient Light Influences Criminal Behavior* (Stan. Inst. for Econ. Pol'y Res., Working Paper No. 12-004, Nov. 2012).

⁹⁹ Nicholas L. Lam, et al., *Kerosene: A Review of Household Uses and Their Hazards in Low and Middle Income Countries*, 15 *J. OF TOXICOLOGY & ENVTL. HEALTH*, 396, 396 (2012).

¹⁰⁰ *Id.* at 423.

¹⁰¹ *Id.* at 399–401, 412–23.

¹⁰² *Lighting the Way*, *ECONOMIST*, Sept. 1, 2012.

¹⁰³ *Id.*

b. Lighting-Related Effects on Women Among the EP

The lack of lighting has particularly adverse impacts on women and children. The lack of lighting at home leads to an inability to undertake homework or studies.¹⁰⁴ In the result, women undertaking unpaid domestic labor as wives or women in the home are unable to breakout of their predicament by educating themselves at night with a view to obtaining paid jobs or becoming entrepreneurs.¹⁰⁵ The absence of street lighting leads to molestation and rape of women and prevents them from venturing outside their homes.¹⁰⁶ Moreover, the expense of paying for kerosene might prevent them from purchasing food or other household necessities.¹⁰⁷ Finally, due to the disproportionate time spent indoors by women, women are often more prone to accidents caused by kerosene lamps.¹⁰⁸

3. *Drinking Water and Sanitation*

a. The Effects of Energy Poverty on Drinking Water and Sanitation Access

Lack of access to clean drinking water and sanitation are two interconnected, deadly issues facing the EP. Worldwide, approximately one in eight people—884 million in total—lack access to safe water supplies.¹⁰⁹ In preventing diseases such as diarrhea, tuberculosis, cholera, and other waterborne diseases, basic sanitation is just as important as fresh drinking water.¹¹⁰ Two and a half billion people lack access to improved sanitation, including 1.2 billion people who have no facilities at all.¹¹¹ As a result, 3.4 million people die from water-related disease

¹⁰⁴ This subsection relies on Lakshman Guruswamy, *Introduction to Model Laws on Lighting*, 44 DENV. J. OF INT'L L. & POL'Y, 323, 324 (2016).

¹⁰⁵ *Id.* at 324–25.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ WORLD HEALTH ORG. & UNICEF, PROGRESS ON DRINKING WATER AND SANITATION: SPECIAL FOCUS ON SANITATION 30 (2008), https://www.who.int/water_sanitation_health/monitoring/jmp2008/en/.

¹¹⁰ See generally, Office of the High Commissioner for Human Rights, *Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation* (2015), <http://ohchr.org/EN/Issues/WaterAndSanitation/SRWater/Pages/SRWaterIndex.aspx>.

¹¹¹ *Id.*

each year.¹¹² As with many other issues faced by the EP, children are intensely affected by lack of access to clean drinking water and sanitation facilities. Nearly one in five child deaths—about 1.5 million each year—is due to diarrhea, which is often caused by unclean drinking water and inadequate sanitation facilities.¹¹³ Other consequences of the lack of clean drinking water and basic sanitation include crop failure in irrigated fields, livestock death, and environmental damage.¹¹⁴ Energy is necessary to alleviate these problems through collecting, transporting, and distributing clean water, powering water treatment facilities, facilitating in-home water treatment (through boiling, for example), and constructing and powering sanitation facilities.¹¹⁵

b. The Effects of Unsafe Drinking Water and Sanitation on Women Among the EP

In most societies, women have primary responsibility for management of household water supply, sanitation, and health. Accordingly, they disproportionately experience the effects of insufficient safe drinking water, and vis-à-vis the expenditure of significant time collecting water, and the health, safety, educational, and professional effects of lack of access to basic sanitation falls inordinately on women.

Women and children among the EP have to walk many miles in the LDCs, such as the poorest parts of sub-Saharan Africa and semi desert regions of Asia, to obtain water. Research in sub-Saharan Africa suggests that women and girls in low-income countries spend 40 billion hours a year collecting water—the equivalent of a year's worth of labor by the entire work force in France.¹¹⁶ In a study of 25 countries in sub-Saharan Africa, UNICEF estimated that women there spent 16 million hours collecting water each day,¹¹⁷ while a study in Kenya reported

¹¹² Annette Prüss-Üstün et. al, World Health Org., *SAFER WATER, BETTER HEALTH: COSTS, BENEFITS, AND SUSTAINABILITY OF INTERVENTIONS TO PROTECT AND PROMOTE HEALTH* 21, tbl. 1 (2008).

¹¹³ *Id.* at 7.

¹¹⁴ *Id.* at 22.

¹¹⁵ International Energy Agency, *Water for Energy: Is Energy Becoming a Thirstier Resource?* 4 (2012), https://www.iea.org/media/publications/weo/WEO_2012_Water_Excerpt.pdf.

¹¹⁶ United Nations Dep't of Econ. & Social Affs., *Gender and Water* (2014), <http://un.org/waterforlifedecade/gender.shtml>.

¹¹⁷ UNICEF, *Progress on Drinking Water and Sanitation 2012 Update: Gender and the Burden of Collecting Water*, <https://www.unicef.org/media/files/JMPreport2012.pdf>.

women spending an average of 4.5 hours fetching water per week, causing 77 percent to worry about their safety while fetching, and preventing 24 percent from caring for their children.¹¹⁸

Most women without access to basic sanitation, such as a latrine, must wait for nightfall and an empty field to defecate in private, a practice which has serious side effects for many women. Waiting so long to defecate leads to increased chances for urinary tract infections, chronic constipation, and psychological stress.¹¹⁹ Many women, who are going out alone at night are also at an increased risk of physical and sexual assault.¹²⁰ The symptoms of menstruation, pregnancy, and the postnatal period also become problematic if there are not adequate facilities to properly deal with them. Many girls are forced to leave school once they reach puberty and menstruate simply because there are no facilities or supplies accessible to them.¹²¹ Those who choose to stay often miss class during their menstrual cycle, making it harder for them to succeed in the classroom.¹²² Furthermore, adult female professionals without access to nearby facilities must choose between the indignity and health risks of caring for themselves in the open or leaving work.¹²³

4. Justice and Women¹²⁴

Law is globally and inextricably related to the concept of justice. Defining the concept of justice requires moral reasoning. That is to say, in a society without a differentiation between morality and immorality, there is no such thing as a just or unjust decision. This is vitally important in understanding the very real and apparent differences in which legal outcomes are considered just among varying jurisprudential theories. Thus, a consideration of justice in a global sense must also consider theories of morality. The importance of doing what is fair and right based on principles of justice is established by a variety of global

¹¹⁸ Bethany Caruso, *Women still carry most of the world's water*, QUARTZ (July 24, 2017), <https://qz.com/1033799/women-still-carry-most-of-the-worlds-water/>.

¹¹⁹ *Supra*, fn 120

¹²⁰ UN-Water & the Inter-agency Task Force on Gender and Water, *Gender, Water and Sanitation: A policy Brief* 2, 5 (June 2006).

¹²¹ *Id.* at 5.

¹²² *Id.*

¹²³ *Id.*

¹²⁴ Some parts of this Part rely on and reproduces parts of the author's GLOBAL ENERGY JUSTICE: LAW AND POLICY, *supra* note 2.

jurisprudential lineages emanating from Western, Islamic, Buddhist, and Confucian traditions.¹²⁵

In discussing law and justice, it is unfortunate that Western theorizing on global justice is found within political and moral philosophy and not what Steven Ratner calls the “thin justice” of international law or jurisprudence.¹²⁶ Moral philosophy and justice have been treated as falling outside the compass of law and generally ignored.¹²⁷ Contemporary international law needs to fill in the lacunae between law and justice. The present article is mindful of the enormity of this task, and does not presume to take more than an incremental step toward this objective. It will do so by reviewing salient concepts of justice propounded by John Rawls, and argue first, that his thinking, and other jurisprudential lineages of justice, constitute the unarticulated major premise of SD. Second, it will be argued that justice calls for SD to address the plight of women among the EP as a matter of the highest priority.

John Rawls’ theory of justice is predicated on what society “ought” to be. He makes the normative case for a society based on justice as fairness; a necessary corollary of his theory as explained below, is that laws must reflect justice, and they cannot just express the will of the sovereign or lawmaker.¹²⁸

In The Law of Peoples,¹²⁹ John Rawls lays the foundations for his concept of international justice based on a “realistic utopia” grounded in socio-political, institutional, and psychological reality.¹³⁰ Rawls expands on his “original position,” a thought experiment expounded in A Theory of Justice,¹³¹ and developed in numerous other works. In A Theory of Justice, Rawls envisioned a collection of negotiators from liberal democratic societies assembled behind a veil of ignorance, shorn of any knowledge that might be the basis of self-interested bias—such as knowledge of their gender, wealth, race, ethnicity, abilities, and general social circumstances.¹³² Rawls explains that the purpose of such a

¹²⁵ *Id.* at 31–41.

¹²⁶ STEVEN RATNER, THE THIN JUSTICE OF INTERNATIONAL LAW 1–2, 27–28 (2015).

¹²⁷ *Id.*

¹²⁸ JOHN RAWLS, A THEORY OF JUSTICE (1971); JOHN RAWLS, THE LAW OF PEOPLES 27 (Harvard University Press, rev. ed. 2001).

¹²⁹ THE LAW OF PEOPLES, *supra* note 128.

¹³⁰ *Id.* at 4, 6, 11, 126.

¹³¹ A THEORY OF JUSTICE, *supra* note 128, at 12.

¹³² *Id.*

negotiation was to arrive at legitimate principles of justice under fair conditions—hence “justice as fairness.”¹³³

In *The Law of Peoples*, Rawls addresses justice in the international context. In doing so, he extends his theories from liberal democratic states to “decent” peoples living in nondemocratic international societies. Rawls envisions such “well-ordered hierarchical societies” to be “non-liberal” societies whose basic institutions meet specified conditions of political right and justice (including the right of citizens to play a substantial role, such as participating in associations and groups making political decisions) and lead their citizens to honor a reasonably just law for the Society of Peoples.¹³⁴ Well-ordered societies must satisfy a number of criteria: they must eschew aggressive aims as a means of achieving their objectives, honor basic human rights dealing with life, liberty, and freedom, and possess a system of law imposing bona fide moral duties and obligations, as distinct from human rights.¹³⁵ Moreover, they must have law and judges to uphold common ideas of justice.¹³⁶

Rawls demonstrated how the law of peoples may be developed out of liberal ideas of justice similar to, but more general than, the idea of “justice as fairness” presented in *A Theory of Justice*.¹³⁷ Just as individuals in the first original position were shorn of knowledge about their attributes and placed behind a veil of ignorance to create principles for a just domestic society, the bargainers in the so-called second original position are representatives of peoples who are shorn of knowledge about their people’s resources, wealth, power, and the like. Behind the veil of ignorance, the representatives of peoples—not states, as states lack moral capacity to develop the principles of justice that will govern relations between them—will work out a “the law of peoples.”¹³⁸

Rawls seeks to determine the principles of cooperation for such “well-ordered peoples.” Rawls posits that non-ideal conditions cannot adequately be addressed unless principles of justice are determined for ideal conditions. Otherwise, it is impossible to know what kind of just society to aim to establish and the necessary means to do so.¹³⁹ A

¹³³ JOHN RAWLS, POLITICAL LIBERALISM xli, n. 7 (2005).

¹³⁴ A THEORY OF JUSTICE, *supra* note 128, at 4–6, 62–64.

¹³⁵ *Id.* at 3.

¹³⁶ See A THEORY OF JUSTICE, *supra* note 128, at 62–67.

¹³⁷ THE LAW OF PEOPLES, *supra* note 128, at 3–4.

¹³⁸ *Id.* at 62–67.

¹³⁹ *Id.*

“realistic utopia,”¹⁴⁰ as Rawls prefers to call his theory, is an aspiration that does not reflect the existing reality of international law and relations.

Rawls emphasizes the crucial importance of people rather than states because of a people’s capacity for “moral motives” that is lacking in the bureaucratic machinery of a state.¹⁴¹ Noah Feldman correctly observes that a “people” for Rawls is a philosophical construct.¹⁴² It is an abstract conception needed to work out principles of justice for a particular subject—in this case, relations among different, well-ordered liberal and “decent” societies.¹⁴³ While Rawls’ assumption that states lack moral motives is partially refuted by their acceptance of SD, he remains trenchant, as we shall see, when it comes to the application of SD. Rawls is not talking then about a people regarded as an ethnic or religious group (e.g. Slavs, Jews, Kurds) who are not members of the same society. Rather, a “people” consists of members of the same well-ordered society who are united under, and whose relations are governed by, a political constitution and basic structure. Comprised of members of a well-ordered society, a people is envisioned as having effective political control over a territory that its members govern and within which their basic social institutions take root. In contrast to a state, however, a people possesses a “moral nature” that stems from the effective sense of justice for its individual members. A people’s members may have “common sympathies” for any number of non-requisite reasons, including shared language, ethnic roots, or religion. The most basic reason for members’ common sympathies, however, lies in their shared history as members of the same society and consequent shared conception of justice and the common good.

II. SDGs & JUSTICE

The Sustainable Development Goals (SDGs) of 2015¹⁴⁴ include a cluster of SDGs dealing with the condition of women that should address the justice of their claim for access to energy. They include SDG 5 on gender equality,¹⁴⁵ SDG 7 dealing with access to energy,¹⁴⁶ and SDG 16 on Peace, Justice and Strong Institutions.¹⁴⁷

¹⁴⁰ *Id.* at 5–6, 11.

¹⁴¹ *Id.* at 23–30.

¹⁴² Noah Feldman, *Cosmopolitan Law?*, 116 YALE L.J. 1022, 1039 (2007).

¹⁴³ *Id.* at 1038.

¹⁴⁴ G.A. Res. 70/1 (Sep. 25, 2015).

¹⁴⁵ *Id.* at 14.

An examination of these SDGs reveals the extent to which access to energy for women has been overlooked or diminished not only in the SDGs themselves, but also their targets and indicators. Targets specify the goals and Indicators represent the metrics by which the world aims to track whether these Targets are achieved.¹⁴⁸ The UN has defined 9 *Targets* and 14 *Indicators* for SDG 5.¹⁴⁹ Despite overwhelming evidence, discussed above, that lack of energy adversely impacts women, there are no targets or indicators relating to harms caused to women by lack of access to energy. SDG 7 on Access to affordable, reliable, sustainable and modern energy for all has 5 targets and 6 indicators. SDG 7, similar to SDG 5,¹⁵⁰ overlooks or glosses over the dire plight of women. The targets and indicators are global or general, and there are no specific targets or goals relating to women.

Given the reality of the special hardships suffered by women, it was important for global targets and indicators in SDG 7, to have progressed from the hortatory realm of broad generality to specific realities. Consequently, it was reasonable to expect that targets actually enumerated priorities, and draw up an agenda for action, that acknowledged the importance of addressing the worst cases first. Instead, the first target in SDG 7 simply mirrors the generality of the objective of affordable and clean energy in SDG 7, by calling for universal access to affordable, reliable and modern energy services by 2030.¹⁵¹ The other targets and indicators are similarly shorn of specificity. It would have been far more meaningful, consequential, and constructive if the specific plight of women was identified, and targets were directed toward women as a high priority.

SDG 16 addresses peace, justice and strong institutions, and seeks to promote, just peaceful and inclusive societies. The UN has defined 12 Targets and 23 Indicators for SDG 16. Target 16.3¹⁵² that promotes the rule of law and ensures equal access to justice. According

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Gender Equality*, SDG TRACKER, <https://sdg-tracker.org/gender-equality> (last visited Feb. 9, 2019).

¹⁴⁹ *Sustainable Development Goal 5*, UNITED NATIONS, <https://sustainabledevelopment.un.org/sdg5> (last visited Feb. 9, 2019).

¹⁵⁰ *Id.*; *Sustainable Development Goal 7*, UNITED NATIONS, <https://sustainabledevelopment.un.org/sdg7> (last visited Feb. 9, 2019).

¹⁵¹ *Sustainable Development Goal 7*, *supra* note 136.

¹⁵² *Sustainable Development Goal 16*, UNITED NATIONS, <https://sustainabledevelopment.un.org/sdg16> (last visited Feb. 9, 2019).

to the UN, justice referred to in 16.3 should promote the rule of law at the national and international levels and ensure equal access to justice for all.¹⁵³ Pursuant to this interpretation, 16.3 has been applied to the reduction of violence, such as murders by avoiding conflict related deaths, and preventing physical, psychological and sexual violence against vulnerable children.¹⁵⁴ But, as we have seen, the concept of justice has a wider meaning. At its core, justice incorporates a social dimension based on fairness. Unfortunately, this essential social and humanitarian dimension of justice has been ignored or overlooked in SDG 16, and its targets. Consequently, the extent to which justice should also include the woeful condition of women and children with poor access to energy has been omitted.

III. CONCLUSIONS

The most important conclusion is that Rawls provides an unarticulated major premise of SD, applicable to economic and social development, as well as environmental protection. The most pertinent corollary that follows is that Rawls elucidates the duty of liberal democratic and decent hierarchical peoples to assist “burdened societies” to the point where burdened societies are enabled to join the “Society of Peoples.” Women, among the EP, fall within Rawls’ rubric of burdened peoples. The SDGs, as we have seen, do not give expression to a Rawlsian sense of justice, and it is important that concepts of justice should illuminate any discussion on sustainable development. Given that the SDGs have generally failed to do so, there are a number of compelling reasons for embedding SD within the vortex of justice.

First, the inability to access energy both causes poverty and disables impoverished people from developing. The connection between energy and poverty is fundamental to the discourse on sustainable development. Second, the plight of the EP cannot be remedied by relying solely on the states within which they reside. The energy-poor have been glossed over by their identification only as national problems falling within the sovereign jurisdiction of the developing countries within which they reside. They are treated as internal problems of developing countries, and not perceived as a call for international action, sometimes independent of those countries. It would be a great step forward if those

¹⁵³ *Id.*

¹⁵⁴ *Id.*

international intergovernmental and civil society organizations, that appear to be solely preoccupied with climate change, began to focus on the tragedy of the EP.

Second, allowing the EP to languish in their current state violates fundamental concepts of international justice and SD. Because Rawls' concepts of duty and distributive justice, are not explicitly articulated in the concept of SD, or in the SDGs, justice can only be achieved if they are interpreted according to Rawlsian principles or other similar principles of justice.

Third, access to energy through electricity remains the ultimate objective. Unfortunately, it is a cost-prohibitive and protracted remedy that will take decades to implement, and does not offer any interim solutions. During the long wait for electricity, large segments of the EP will remain energy-deprived for many decades unless they are offered intermediate solutions based on affordable/appropriate sustainable energy technologies (ASETs). Employing ASETs can begin the journey out of energy poverty.

Finally, despite the reservations expressed above, there is no doubt that the UN's recognition of the need for universal access to energy in SDG 7 is a significant step forward. SDG 7 acknowledges the connection between energy and poverty and charts a new path for SD. Though the targets and indicators do not refer specifically to women, recognition of universal access to energy offers a new space for formulating appropriate sustainable energy solutions. Such measures, based on Rawlsian principles of justice, could address the needs of energy-poor women by providing timely, sustainable, and affordable ways to satisfy their energy needs.

