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# The Climate Change-Sustainable Development Nexus: A Proposal for Convergence

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Pace University School of Law

# **The Climate Change- Sustainable Development Nexus: A Proposal for Convergence**

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November 6, 2013

*This thesis was written under the guidance of Dean Emeritus Richard L. Ottinger and submitted in partial fulfillment of the requirements for the Master of Laws degree in Environmental Law at Pace University School of Law. The author may be contacted at [aleong@law.pace.edu](mailto:aleong@law.pace.edu).*

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## **Abstract**

This thesis is founded on the proposition that climate change and sustainable development are inextricably linked with each other and form a “nexus” that should be understood in a pragmatic and holistic way. Accordingly, the climate change “problem” cannot be adequately addressed in “silos” or by traditional output control techniques but instead should be viewed as a multidimensional challenge that calls for transformative change in the world energy sector in light of the wider contexts of sustainability and social equity. This thesis observes that with the emergence of a post-2015 development agenda and Sustainable Development Goals (SDGs) at the United Nations, the world is at or is fast approaching an inflection point in global development. While efforts to improve the United Nations Framework Convention on Climate Change (UNFCCC) process are laudable, this thesis argues for a transformative approach to converge international collective action on climate change with the broader frameworks of global sustainable development processes. This thesis makes a proposal for the convergence and integration of the UNFCCC and sustainable development work streams, and suggests that China consider taking a leadership role under the broad aspirational goal of building “eco-civilization.”

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## 1. Introduction

The central organizing principle of this thesis is that climate change and sustainable development are inextricably linked with each other and form a “nexus” that should be understood in a pragmatic and holistic way. From this foundation, this thesis proposes the convergence and integration of the international processes currently being undertaken on climate change and sustainable development.

The syllogisms underlying this nexus are relatively simple. Climate change presents serious and dangerous risks to humanity.<sup>1</sup> Much of human-generated climate change is caused by greenhouse gas emissions from the combustion of fossil fuels,<sup>2</sup> principally to supply energy for electricity, heating/cooling and transport needs. Thus, a significant way to mitigate climate change would be to “decarbonize” the world energy systems. However, it should be recognized that much of the world’s population lives in poverty, and that there are moral imperatives to eradicate poverty, hunger, illiteracy and preventable childhood deaths. These imperatives call for resources that are generated by economic development. Economic development requires energy that if generated from fossil fuel resources would exacerbate the climate crisis. However, energy generated from renewable resources does not usually cause emissions of significant quantities of greenhouse gases. Thus, a critical path for so-called “sustainable development” is to install decarbonized energy systems using renewable energy resources in large enough scale to support the objectives of economic development and stabilizing greenhouse gas concentrations. In nexus thinking, climate change and development are interlinked;

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<sup>1</sup> See Working Group I Contribution to the IPCC Fifth Assessment Report, *Climate Change 2013: The Physical Science Basis*, Summary for Policymakers (September 27, 2013), available at [http://www.climatechange2013.org/images/uploads/WGIAR5-SPM\\_Approved27Sep2013.pdf](http://www.climatechange2013.org/images/uploads/WGIAR5-SPM_Approved27Sep2013.pdf).

<sup>2</sup> *Id.*

development is not possible without energy; and sustainable development is not possible without sustainable energy. Therefore, the twin imperatives of climate change and poverty eradication drive the need to develop sustainable energy for all.

This nexus perspective should broaden and deepen one's understanding of the nature of the "problem." For example, there are about 1.5 billion people without access to electricity.<sup>3</sup> Is energy poverty – the lack of access of the world's poor to electricity – a climate change problem? It is clearly a human development problem, and renewable energy could at least be part of the solution, subject to technology, cost and financing considerations. Under nexus thinking, energy poverty would indeed be part of the climate change "problem." This is because to eradicate energy poverty using fossil fuels would be untenable given the climate crisis, but to leave 1.5 billion people literally "in the dark" is not acceptable from a moral perspective given its severe adverse impacts on health, education and livelihoods. As such, nexus thinking would include the issue of energy poverty in the climate change dialogue.

To further contextualize the nexus, consider that there are about one billion people living in extreme poverty, about 870 million people are undernourished, and malnutrition is the underlying cause of the deaths of about 7,000 children under five every day.<sup>4</sup> Are these issues part of the climate change problem? They are if we frame the "problem" as: *the world needs to reduce poverty and hunger while at the same time reducing greenhouse gas emissions*, and if we recognize that climate change is a multiplier of hunger and malnutrition. Access to modern energy services is a necessary

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<sup>3</sup> See Sustainable Energy for All, About Us, <http://www.sustainableenergyforall.org/about-us> (last visited Nov. 6, 2013).

<sup>4</sup> See Hunger-Nutrition-Climate Justice 2013 Conference Report, *A New Dialogue: Putting People at the Heart of Global Development* (April 15-16, 2013, Dublin, Ireland), available at <http://www.dci.gov.ie/media/irishaid/allwebsitemedia/30whatwedo/hncj-post-conference-report.pdf>.

precondition to poverty reduction. Sustainable energy then becomes the “bridge” connecting these issues. Nexus thinking recognizes these interconnections and maintains that these challenges cannot be addressed in “silos.”

The current implementation of global climate policy under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC) has been predominantly focused on reaching international agreement on reducing the concentration of greenhouse gases using an “output” approach, i.e., emissions targets. Such an approach implicates deep ethical and equity issues, including with respect to historical responsibility and the right to development, and tends to skew the thinking towards a “zero-sum game,” i.e., who should be entitled to emit and “use up” an assumed “carbon budget” or “carbon space.” Nexus thinking would instead call for a multidimensional approach, focusing attention on “input” targets, such as sustainable energy targets and indicators, within a sustainable development framework that aspires towards transformational change. This “input” approach would frame climate negotiations in the wider contexts of sustainability and social equity, and would have the benefits of being pragmatic, morally justifiable and potentially politically feasible. Global climate policy should be pragmatic – if some combination of output and input approaches could be workable, the international community should be open to pursuing such creative permutations.

Part 2 discusses climate change, specifically the work of Sir Nicholas Stern, the recent International Energy Agency report, and the “Hartwell” analysis of the global climate policy crisis. Part 3 discusses the current global framework for sustainable development, as enunciated by the United Nations’ Millennium Development Goals

(MDGs), the Rio+20 Sustainable Development Conference conclusions, the post-2015 development agenda, and the Sustainable Development Goals (SDGs). Part 4 makes a proposal for the convergence and integration of the UNFCCC processes with global sustainable development processes.

## **2. Climate Change**

### *2.1 The Stern Analysis and the IEA Report*

The agreements reached at the United Nations Climate Change Conference held under the auspices of the UNFCCC in Cancun, Mexico in December 2010 (the Cancun Agreements) established objectives for reducing human-generated greenhouse gas emissions over time to keep the global average temperature rise to a maximum of 2°C above pre-industrial levels.<sup>5</sup> In a policy paper published in 2012, Nicholas Stern and his co-authors warned that the overall pace of change is “recklessly slow.”<sup>6</sup> They point out that global emissions are now over 50 billion metric tons of CO<sub>2</sub>e<sup>7</sup> per annum and are continuing to rise<sup>8</sup> and that the levels of emissions based on policies currently in place are grossly inconsistent with a 2°C path.<sup>9</sup>

Stern has noted that even though climate change resembles traditional pollution in that it involves an externality where the emission of greenhouse gases causes damage to

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<sup>5</sup> UNFCCC, The Cancun Agreements, <http://cancun.unfccc.int/cancun-agreements/main-objectives-of-the-agreements/#c33> (last visited Nov. 6, 2013).

<sup>6</sup> Mattia Romani, James Rydge and Nicholas Stern, *Recklessly slow or a rapid transition to a low-carbon economy? Time to decide*, a joint paper of the Center for Climate Change Economics and Policy and the Grantham Research Institute on Climate Change and the Environment (December 2012), available at <http://www.lse.ac.uk/GranthamInstitute/publications/Policy/docs/transition-low-carbon-economy.pdf>.

<sup>7</sup> Equivalent carbon dioxide (CO<sub>2</sub>e) is a related but distinct measure for describing how much global warming a given type and amount of greenhouse gas may cause, using the functionally equivalent amount or concentration of carbon dioxide (CO<sub>2</sub>) as the reference. Wikipedia, Carbon dioxide equivalent, [http://en.wikipedia.org/wiki/Carbon\\_dioxide\\_equivalent](http://en.wikipedia.org/wiki/Carbon_dioxide_equivalent) (last visited Nov. 6, 2013).

<sup>8</sup> Romani et al., *supra* note 6, at 5.

<sup>9</sup> Romani et al., *supra* note 6, at 6.



the public that is not reflected in the price of the products involved,<sup>10</sup> climate change in actuality presents a deeper and more complex economic policy problem than traditional pollution. This is because climate change involves many jurisdictions, weak representation of those most affected (particularly future generations), long-term horizons, a global scale, major uncertainties, and important interactions with other market failures.<sup>11</sup> Others have called climate change a “wicked” problem, which will be described in Section 2.2 below. One obvious solution to the failure to reflect these externalities is the imposition of a carbon tax to reflect them, but this solution has so far eluded international agreement and implementation in most countries.

In a 2012 working paper on ethics, equity and the economics of climate change, Stern presents the difficult issues that the climate change math raises.<sup>12</sup> He indicates that in order to achieve a 50-50 chance of holding to a 2°C increase, global emissions have to be cut from near 50 billion metric tons per annum to below 35 billion metric tons per annum in 2030 and to below 20 billion metric tons per annum in 2050.<sup>13</sup> Thinking in terms of a “carbon budget” or “carbon space” illustrates the near-impossible task for international climate negotiators. The advanced economies became rich on high-carbon growth and are responsible for around 75% of CO<sub>2</sub> emissions since the mid-19th century.<sup>14</sup> As Stern asks, “Should those who have consumed more of the ‘carbon space’

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<sup>10</sup> Nicholas Stern, *What is the Economics of Climate Change?*, WORLD ECONOMICS, Vol. 7, No. 2 (April-June 2006), available at [http://www.bioenergy-world.com/americas/2006/IMG/pdf/stern\\_summary\\_what\\_is\\_the\\_economics\\_of\\_climate\\_change.pdf](http://www.bioenergy-world.com/americas/2006/IMG/pdf/stern_summary_what_is_the_economics_of_climate_change.pdf).

<sup>11</sup> *Id.*

<sup>12</sup> Nicholas Stern, *Ethics, equity and the economics of climate change*, a joint working paper of the Centre for Climate Change Economics and Policy (Working Paper No. 97) and the Grantham Research Institute (Working Paper No. 84) (August 2012), available at <http://www.cccep.ac.uk/Publications/Working-papers/Papers/90-99/WP97-ethics-equity-economics-of-climate-change.pdf>.

<sup>13</sup> Stern, *supra* note 12, at 19.

<sup>14</sup> *Id.*

in the past have less right to consume later?”<sup>15</sup> Conversely, do those who have consumed less in the past (and are poorer for it) have the right to consume more now and into the future? Also, to complicate matters, countries with different national circumstances and capacities have divergent per capita emissions. Regardless of the different carbon math numbers and methodologies that different analysts may use,<sup>16</sup> carbon budgeting generally tends toward “zero sum” thinking and, as has been demonstrated by the lengthy unproductive negotiations so far, is likely to lead to an impasse if used as the conceptual underpinning for international climate talks. Indeed, an emissions “output” approach based on an assumed “carbon ceiling” implicates very difficult ethical and equity issues.

Stern believes that policies for sustainable development and overcoming poverty require *breaking the link between production and consumption activities on the one hand and emissions on the other hand*, and as such requires a new “*energy-industrial revolution*.”<sup>17</sup> This approach could potentially transcend the ethical and equity challenges inherent in an output control approach, through transformational change in the world energy sector that de-links economic growth from greenhouse gas emissions. Such transformational change could be manifested by energy innovation that enables and drives the changing of fossil fuel-based energy systems to renewable and other non-carbon based energy systems.

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<sup>15</sup> Stern, *supra* note 12, at 20.

<sup>16</sup> The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) has indicated that to limit the warming caused by anthropogenic CO<sub>2</sub> emissions to less than 2°C since the pre-industrial period (with a probability of >66%) will require cumulative CO<sub>2</sub> emissions from all anthropogenic sources to be limited to about 1000 GtC since that period. *See* Working Group I Contribution to the IPCC Fifth Assessment Report, *supra* note 1, at SPM-20. An amount of about 531 GtC has already been emitted by 2011. *Id.* As a result, this would mean a world “carbon budget” of about 469 GtC.

<sup>17</sup> Stern, *supra* note 12, at 113.

A June 2013 World Energy Outlook Special Report by the International Energy Agency (the “*IEA Report*”) maps out, among other things, the current status and expectations of global climate and energy policy.<sup>18</sup> The IEA Report takes the position that a 2°C target is still technically feasible but extremely challenging and that action is required before 2020, which is the date by which a new international climate agreement is due to come into force.<sup>19</sup> The IEA Report states that there is broad international acceptance that stabilizing the atmospheric concentration of greenhouse gases at below 450 parts per million (ppm) of CO<sub>2</sub>e is consistent with an about 50% chance of achieving the 2°C target.<sup>20</sup> The IEA Report stated that in May 2013 concentrations exceeded 400 ppm.<sup>21</sup>

The IEA Report reminds us that energy is central to this challenge given that the energy sector accounts for about two-thirds of greenhouse-gas emissions and that more than 80% of global energy consumption is based on fossil fuels.<sup>22</sup> The IEA Report trenchantly presents the issue as:

“It is, accordingly, evident that if the energy sector is to play an important part in attaining the internationally adopted target to limit average global temperature increase, a transformation will be required in the relationship between economic development, energy consumption and greenhouse-gas emissions. Is such a transition feasible? Analyses conclude that, though extremely challenging, it is feasible.”<sup>23</sup>

A “transformation” in the “relationship between economic development, energy consumption and greenhouse-gas emissions” is similar to Stern’s formulation of

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<sup>18</sup> *Redrawing the Energy-Climate Map*, World Energy Outlook Special Report, International Energy Agency (June 10, 2013), available at <http://www.worldenergyoutlook.org/media/weowebiste/2013/energyclimatemap/RedrawingEnergyClimateMap.pdf> [hereinafter referred to as the “IEA Report”].

<sup>19</sup> *Id.*

<sup>20</sup> IEA Report, *supra* note 18, at 14.

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> IEA Report, *supra* note 18, at 16.

“breaking the link between production and consumption activities on the one hand and emissions on the other” and the need for a new “energy-industrial revolution.” The common facet is the need for transformation of the world energy sector to “decouple” the link between economic development and fossil fuel energy consumption. When we view the interlinked challenges of climate change and economic development with the wider lens of sustainability and social equity, we see that developing *sustainable energy for all* -- i.e., universal access to modern energy services based on sustainable technologies -- is a key pathway.

## 2.2 *The Hartwell Analysis*

In February 2010, the London School of Economics (LSE) convened a meeting to consider the implications of then recent developments in climate policy, and the outcome was a document called the “*Hartwell Paper*” which was co-published by the LSE and Oxford University.<sup>24</sup> The Hartwell meeting was a private meeting that included participants from various disciplines and with different backgrounds from Asia, Europe and North America.<sup>25</sup> The purpose of the Hartwell meeting was to take a “long view” of the crisis in global climate policy.<sup>26</sup>

The Hartwell Paper describes the UNFCCC and the Kyoto Protocol process for global climate policy as having “crashed” in late 2009 at the Copenhagen conference.<sup>27</sup>

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<sup>24</sup> *The Hartwell Paper: A new direction for climate policy after the crash of 2009*, a joint paper of the James Martin Institute for Science and Civilization, University of Oxford and the MacKinder Centre for the Study of Long-Wave Events, London School of Economics (May 2010), available at [http://eprints.lse.ac.uk/27939/1/HartwellPaper\\_English\\_version.pdf](http://eprints.lse.ac.uk/27939/1/HartwellPaper_English_version.pdf) [hereinafter referred to as the “Hartwell Paper”]. The co-authors are Professor Gwyn Prins, Isabel Galiana, Professor Christopher Green, Dr. Reiner Grundmann, Professor Mike Hulme, Professor Atte Korhola, Professor Frank Laird, Ted Nordhaus, Professor Roger Pielke Jnr, Professor Steve Rayner, Professor Daniel Sarewitz, Michael Shellenberger, Professor Nico Stehr and Hiroyuki Tezuka.

<sup>25</sup> Hartwell Paper, *supra* note 24, at 4.

<sup>26</sup> Hartwell Paper, *supra* note 24, at 5.

<sup>27</sup> *Id.*

It describes climate change as a “wicked” problem.<sup>28</sup> A “wicked” problem is one that comprises open, complex and imperfectly understood systems, in contrast to a “tame” problem, which may be complicated but has defined and achievable end-states.<sup>29</sup> The information needed to understand a “wicked” problem is dependent upon one’s idea for solving it, and a “wicked” problem lacks a stopping rule: we do not know whether we have sufficient understanding to stop searching for more understanding.<sup>30</sup> There is no end to causal chains in interacting open systems, such as the world’s climate, and thus every “wicked” problem is a symptom of another problem.

The Hartwell analysis asserts that climate policy had been subjected to a fundamental framing error, in that climate change was represented as a conventional environmental “problem” that is capable of being “solved.”<sup>31</sup> However, rather than being a discrete problem to be solved, climate change is better understood as a persistent condition that must be coped with and can only be partially managed more or less well.<sup>32</sup> It is not purely an “environmental” problem either, in that it is as much an energy problem, an economic development problem and a land-use problem.<sup>33</sup> This is, in essence, nexus thinking.

The Hartwell Paper advocates a radical reframing of approach: accepting that decarbonization will only be achieved as a contingent benefit of other goals that are more pragmatic and politically attractive.<sup>34</sup> It proposes reframing the climate issue around “human dignity” via three overarching goals:

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<sup>28</sup> Hartwell Paper, *supra* note 24, at 15.

<sup>29</sup> Hartwell Paper, *supra* note 24, at 16.

<sup>30</sup> *Id.*

<sup>31</sup> Hartwell Paper, *supra* note 24, at 15-16.

<sup>32</sup> Hartwell Paper, *supra* note 24, at 16.

<sup>33</sup> *Id.*

<sup>34</sup> Hartwell Paper, *supra* note 24, at 11.

- Ensuring energy access for all
- Ensuring that we develop in a manner that does not undermine the essential functioning of the Earth system
- Ensuring that our societies are adequately equipped to withstand the risks and dangers that come from all vagaries of climate, whatever their cause might be.<sup>35</sup>

Thus, instead of organizing climate policy around a single core goal of decarbonizing the energy system via the current UNFCCC process, the Hartwell approach represents a very different view where multiple framings and agendas are pursued with their own rationales, resulting in an “inversion” in that decarbonization would be a contingent benefit of these other agendas.<sup>36</sup>

The primary rationale for the Hartwell policy goals is to improve the quality of human life. For example, the Hartwell Paper contends that leaving more than a billion people without access to electricity by 2030 would represent policy failure.<sup>37</sup> As the Hartwell Paper states:

“Present estimates suggest that about 1.5 billion worldwide people lack access to electricity. Many scenarios for the ‘successful’ implementation of mitigation policies leave what we believe to be an unacceptable number of people literally in the dark. For instance, the International Energy Authority’s (IEA) 2009 450 Scenario to 2030 has global emissions on a trajectory to stabilisation at 450 ppm carbon dioxide; yet 1.3 billion people worldwide remain without access to electricity. For energy poor countries with large populations, such scenarios inescapably paint a picture of rich countries who value limiting emissions over economic development elsewhere in the world.”<sup>38</sup>

In terms of policy prescriptions, the Hartwell Paper proposes long-term commitments to invest in energy innovation funded by a low carbon tax.<sup>39</sup>

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<sup>35</sup> Hartwell Paper, *supra* note 24, at 10.

<sup>36</sup> Hartwell Paper, *supra* note 24, at 9.

<sup>37</sup> Hartwell Paper, *supra* note 24, at 13.

<sup>38</sup> Hartwell Paper, *supra* note 24, at 12-13.

<sup>39</sup> Hartwell Paper, *supra* note 24, at 20.

The Hartwell analysis has been applied in an American context in a paper entitled “Climate Pragmatism” published in July 2011 with 14 co-authors from academia and think tanks.<sup>40</sup> These authors call for a new approach to climate policy because in their view “continually deadlocked international negotiations and failed domestic policy proposals bring no climate benefit at all”<sup>41</sup> and that only sustained efforts to build momentum through “politically feasible forms of action”<sup>42</sup> will result in accelerated decarbonization. They write that:

“A new climate strategy should take a page from one of America’s greatest homegrown traditions — pragmatism — which values pluralism over universalism, flexibility over rigidity, and practical results over utopian ideals.”<sup>43</sup>

These self-described “climate pragmatists” write that:

“If this new era is to be led at all, it will be led primarily by example, not global treaty. The Copenhagen Accord is one of essentially voluntary actions among major emitters. The accord perpetuates the conceit that international negotiations will ultimately include legally binding emission reduction targets, but in reality, the emission targets will be unenforceable and thus aspirational goals. The substantial parts of the Copenhagen Accord are the new multilateral agreements to invest in new energy technology, slow deforestation, and build disaster resilience – far better grounds for global cooperation than unenforceable emissions targets and timetables.”<sup>44</sup>

Thus, they propose a new climate strategy focused on:

- Energy innovation
- Resilience to extreme weather

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<sup>40</sup> *Climate Pragmatism, Innovation, Resilience and No Regrets – The Hartwell Analysis in an American Context* (July 2011), available at [http://thebreakthrough.org/blog/Climate\\_Pragmatism\\_web.pdf](http://thebreakthrough.org/blog/Climate_Pragmatism_web.pdf) [hereinafter referred to as “Climate Pragmatism”]. The co-authors are Dr. Rob Atkinson, Professor Netra Chhetri, Joshua Freed, Isabel Galiana, Professor Christopher Green, Dr. Steven Hayward, Jesse Jenkins, Dr. Elizabeth Malone, Ted Nordhaus, Professor Roger Pielke Jr., Professor Gwyn Prins, Professor Steve Rayner, Professor Daniel Sarewitz and Michael Shellenberger.

<sup>41</sup> Climate Pragmatism, *supra* note 40, at 5.

<sup>42</sup> *Id.*

<sup>43</sup> *Id.*

<sup>44</sup> *Id.*

➤ “No regrets” pollution reduction<sup>45</sup>

Their justifications for pursuing energy innovation include the high costs of dependence on foreign oil, the need for greater energy access in poor countries, and the financial potential for manufacturing and export of new energy technologies.<sup>46</sup> In one of their insights, they point out that economic growth and modernization will enable the construction and maintenance of resilient physical infrastructure and reduce vulnerabilities to climate change, and because economic growth requires energy, expanding energy access throughout the developing world can be a key strategy to build resilience.<sup>47</sup> A “no regrets” pollution reduction strategy would shift concern from climate change to reduction of pollution and its negative consequences, in particular the public health risks associated with pollutants such as black carbon, methane, ozone depleting chemicals and mercury.<sup>48</sup> Climate mitigation would be a side benefit of these pollution control measures.

The Hartwell analysis, in both its UK and American versions, propose energy innovation as a key strategy, and recognize the importance of energy access for all – in the UK version, it is framed as a human dignity issue, and in the American version, as a pragmatic issue. Although not framed as such, *all three of the overarching goals for “climate policy” proposed by the Hartwell Paper are, in essence, forms of sustainable development goals.*

A reframing of global climate policy away from the narrow emissions target “output” approach towards a multidimensional sustainable development and sustainable

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<sup>45</sup> Climate Pragmatism, *supra* note 40, at 6.

<sup>46</sup> *Id.*

<sup>47</sup> *Id.*

<sup>48</sup> Climate Pragmatism, *supra* note 40, at 21-22.



energy framework or “input” approach has the benefits of being more pragmatic and politically attractive. Under the Hartwell analysis, the UNFCCC’s focus on output is doomed to failure because it “is predicated upon changing the world first in order to meet its goals, rather than taking the world as it is and seeking ways to build on possibilities and dynamics already present.”<sup>49</sup>

Nexus thinking implicitly underlies the Hartwell analysis. The analysis rejects the notion that climate change is a discrete problem that can be solved independently of broader development imperatives. In a separate paper, two of the co-authors of the Hartwell Paper write as follows:

“[I]t seems unrealistic that climate change can be dealt with as a stand-alone issue. Furthermore, as others have pointed out, the relationship between climate and sustainable development is asymmetrical. In principle, it may be possible to deal with climate change in ways that prove unsustainable for other reasons. However, achieving a sustainable development trajectory, by definition, must include a sustainable solution to the challenge of climate change.”<sup>50</sup>

In summary: while the world faces a climate crisis, the climate change “problem” is proving to be extremely complex or “wicked” and dissimilar to traditional pollution problems; as such, it cannot be “solved” by traditional output control techniques. An emissions “output” target approach is fraught with inherent ethical and equity dilemmas and is highly susceptible to deadlock. Nexus thinking shows us that the climate change “problem” should be reframed as a multidimensional challenge to effect transformational change in the world energy sector in light of the broader contexts of sustainability and social equity. An “input” approach focused on a sustainable energy agenda within a

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<sup>49</sup> Gwyn Prins & Steve Rayner, *The Wrong Trousers: Radically Rethinking Climate Policy*, a joint discussion paper of the James Martin Institute for Science and Civilization, University of Oxford and the MacKinder Centre for the Study of Long-Wave Events, London School of Economics (2007), at 4, available at <http://eureka.bodleian.ox.ac.uk/66/1/TheWrongTrousers.pdf>.

<sup>50</sup> Prins & Rayner, *supra* note 49, at 18.

sustainable development framework can be pragmatic, morally justifiable and potentially politically feasible; climate mitigation could be a contingent benefit of these multiple framings and agendas. Global climate policy should be pragmatic, valuing pluralism, flexibility and practical results – if some combination of output and input approaches could be workable, they should be seriously pursued. At its core, ultimately, the climate change “problem” is a sustainable development “problem.”

### **3. Sustainable Development**

#### *3.1 Definitions of Sustainable Development*

What is “sustainable development”? There are many different definitions and understandings of the term “sustainable development.” One widely accepted definition comes from *Our Common Future*, also known as the Brundtland Report (Report of the World Commission on Environment and Development, 1987), which reads as follows:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.”<sup>51</sup>

The Brundtland Report goes on to elaborate on the concept of sustainable development as follows:

“The satisfaction of human needs and aspirations in [sic] the major objective of development. The essential needs of vast numbers of people in developing countries for food, clothing, shelter, jobs - are not being met, and beyond their basic needs these people have legitimate aspirations for an improved quality of life. A world in which poverty and inequity are endemic will always be prone to

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<sup>51</sup> UN Documents, *Our Common Future*, Chapter 2: Towards Sustainable Development, <http://www.un-documents.net/ocf-02.htm#I> (last visited Nov. 6, 2013).

ecological and other crises. Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life.”<sup>52</sup>

The United Nations 2005 World Summit outcome document refers to the integration of the three components of sustainable development – economic development, social development and environmental protection – as “interdependent and mutually reinforcing pillars.”<sup>53</sup> These three pillars or dimensions have become deeply embedded into the conceptual thinking on sustainable development. The outcome document goes on to say: “Poverty eradication, changing unsustainable patterns of production and consumption and protecting and managing the natural resource base of economic and social development are overarching objectives of and essential requirements for sustainable development.”<sup>54</sup>

More broadly, the Earth Charter contains a ringing call to join together to bring forth “a sustainable global society founded on respect for nature, universal human rights, economic justice, and a culture of peace” and goes on to specify principles of sustainability such as respect and care for the community of life, ecological integrity, social and economic justice, and democracy, nonviolence and peace.<sup>55</sup> Notably, under the rubric of ecological integrity, the Earth Charter calls for preventing harm as the best method of environmental protection and, when knowledge is limited, applying a precautionary approach.<sup>56</sup>

The International Institute for Sustainable Development (IISD) states that “[a]ll

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<sup>52</sup> *Id.*

<sup>53</sup> 2005 World Summit Outcome, G.A. Res. 60/1, U.N. Doc. A/RES/60/1 (Oct. 16, 2005).

<sup>54</sup> *Id.*

<sup>55</sup> The Earth Charter Initiative, The Earth Charter, <http://www.earthcharterinaction.org/content/pages/Read-the-Charter.html> (last visited Nov. 6, 2013).

<sup>56</sup> *Id.*

definitions of sustainable development require that we see the world as a system—a system that connects space; and a system that connects time.”<sup>57</sup> In other words, sustainable development requires thinking about the world as a system that encompasses geography and generations. IISD states that the concept of sustainable development is rooted in systems thinking.<sup>58</sup> Nexus thinking would embrace so-called systems or whole systems thinking, which requires thinking in terms of relationships, connectedness and context.

### 3.2 *MDGs, the Post-2015 Development Agenda, and the SDGs*

In September 2000, at the conclusion of the Millennium Summit of the United Nations, 189 nations adopted the United Nations Millennium Declaration, which contained a statement of values, principles and objectives for the international community in the twenty-first century.<sup>59</sup> These objectives were encapsulated in eight Millennium Development Goals (MDGs) with a target date of 2015.<sup>60</sup> The MDGs are:

- (1) Eradicate extreme poverty and hunger
- (2) Achieve universal primary education
- (3) Promote gender equality and empower women
- (4) Reduce child mortality
- (5) Improve maternal health
- (6) Combat HIV/AIDS, malaria and other diseases
- (7) Ensure environmental sustainability

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<sup>57</sup> International Institute for Sustainable Development, What is Sustainable Development?, <http://www.iisd.org/sd/#one> (last visited Nov. 6, 2013).

<sup>58</sup> *Id.*

<sup>59</sup> We Can End Poverty 2015 Millennium Development Goals, Background <http://www.un.org/millenniumgoals/bkgd.shtml> (last visited Nov. 6, 2013).

<sup>60</sup> United Nations Millennium Declaration, G.A. Res. 55/2, U.N. Doc. A/RES/55/2 (Oct. 18, 2000).

(8) Develop a global partnership for development.<sup>61</sup>

Within each goal are specific targets, for example, under MDG 1, the targets are to halve, between 1990 and 2015, the proportion of people whose income is less than \$1.25 a day; achieve full and productive employment and decent work for all, including women and young people; and halve, between 1990 and 2015, the proportion of people who suffer from hunger.<sup>62</sup> The Millennium Development Goals Report 2013 indicated that several MDG targets have already been met or are within close reach, including that the proportion of people living in extreme poverty has been halved at the global level, over 2 billion people have gained access to improved sources of drinking water, and the proportion of slum dwellers in the cities and metropolises of the developing world has declined; however, accelerated progress and bolder action are needed in many areas, including in environmental sustainability, child survival, maternal deaths, education, and sanitation.<sup>63</sup>

At the MDG Summit (High Level Plenary Meeting of the General Assembly on the MDGs) held in New York in September 2010, countries initiated steps towards promulgating a development agenda beyond 2015.<sup>64</sup> In July 2012, UN Secretary-General Ban Ki-moon announced the members of a “high-level” panel chaired by the Presidents of Indonesia and Liberia and the Prime Minister of the United Kingdom to advise on the post-2015 development agenda.<sup>65</sup> This high-level panel issued a report on May 30, 2013,

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<sup>61</sup> *Id.*

<sup>62</sup> We Can End Poverty 2015 Millennium Development Goals, Eradicate Extreme Poverty and Hunger, <http://www.un.org/millenniumgoals/poverty.shtml> (last visited Nov. 6, 2013).

<sup>63</sup> The Millennium Development Goals Report 2013, *available at* <http://www.un.org/millenniumgoals/pdf/report-2013/mdg-report-2013-english.pdf>.

<sup>64</sup> We Can End Poverty 2015 Millennium Development Goals, Beyond 2015, <http://www.un.org/millenniumgoals/beyond2015.shtml> (last visited Nov. 6, 2013).

<sup>65</sup> The panel members are H.E. Dr. Susilo Bambang, President of Indonesia (Co-Chair), H.E. Ellen Johnson Sirleaf, President of Liberia (Co-Chair), The Right Honourable David Cameron MP, Prime Minister of the

entitled “A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development” (hereinafter, the “*High Level Report*”).<sup>66</sup>

The High Level Report concluded that the post-2015 development agenda should be driven by five key transformative shifts:

- Leave no one behind
- Put sustainable development at the core
- Transform economies for jobs and inclusive growth
- Build peace and effective, open and accountable public institutions
- Forge a new global partnership<sup>67</sup>

The High Level Report explains why the post-2015 development agenda should be a universal agenda:

“Developing a single, sustainable development agenda is critical. Without ending poverty, we cannot build prosperity; too many people get left behind. Without building prosperity, we cannot tackle environmental challenges; we need to mobilise massive investments in new technologies to reduce the footprint of unsustainable production and consumption patterns. Without environmental sustainability, we cannot end poverty; the poor are too deeply affected by natural disasters and too dependent on deteriorating oceans, forests and soils.”<sup>68</sup>

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United Kingdom (Co-Chair), H.M. Queen Rania Al Abdullah (Jordan), Gisela Alonso (Cuba), Fulbert Amoussouga Gero (Benin), Abhijit Banerjee (India), Gunilla Carlsson (Sweden), Patricia Espinosa (Mexico), Maria Angela Holguin (Colombia), Naoto Kan (Japan), Tawakkol Karman (Yemen), Sung-Hwan Kim (Republic of Korea), Horst Kohler (Germany), Graca Machel (Mozambique), Betty Maina (Kenya), Elvira Nabiullina (Russian Federation), Ngozi Okonjo-Iweala (Nigeria), Andris Piebalgs (Latvia), Emilia Pires (Timor-Leste), John Podesta (United States), Paul Polman (Netherlands), Jean-Michel Severino (France), Izabella Teixeira (Brazil), Kadir Topbas (Turkey), Yingfan Wang (China) and Amina J. Mohammed (ex officio).

<sup>66</sup> The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda, *A New Global Partnership: Eradicate Poverty and Transform Economies Through Sustainable Development* (2013), available at [http://www.un.org/sg/management/pdf/HLP\\_P2015\\_Report.pdf](http://www.un.org/sg/management/pdf/HLP_P2015_Report.pdf) [hereinafter referred to as the “High Level Report”].

<sup>67</sup> High Level Report, *supra* note 66, at 7-12.

<sup>68</sup> High Level Report, *supra* note 66, at 5.

The High Level Report suggests 12 illustrative goals, including securing sustainable energy.<sup>69</sup> The illustrative energy goal of “Secure Sustainable Energy” consists of four main targets: doubling the share of renewable energy in the global mix; ensuring universal access to modern energy services; doubling the global rate of improvement in energy efficiency in buildings, industry, agriculture and transport; and phasing out of inefficient fossil fuel subsidies that encourage wasteful consumption.<sup>70</sup>

The High Level Report asserts that if these 12 goals and accompanying targets were pursued, they would drive the five key transformations.<sup>71</sup> The High Level Report recommends that a limited number of goals and targets be adopted and that each should be SMART, standing for specific, measurable, attainable, relevant and time-bound.<sup>72</sup> Overall, the High Level Report appears to be a promising start to the formulation of the post-2015 development agenda.

A United Nations Conference on Sustainable Development was held in June 2012 in Rio de Janeiro, Brazil, which is known as “Rio+20” because it was held to mark the 20<sup>th</sup> anniversary of the 1992 “Earth Summit” (the United Nations Conference on Environment and Development) also held in Rio de Janeiro.<sup>73</sup> Significantly, at the 1992 Rio Earth Summit, countries adopted Agenda 21, an ambitious blueprint to advance economic growth with social equity and environmental protection.<sup>74</sup> Twenty years later, the Rio+20 Conference produced an outcome document, called *The Future We Want*,

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<sup>69</sup> High Level Report, *supra* note 66, at Annex I.

<sup>70</sup> *Id.*

<sup>71</sup> High Level Report, *supra* note 66, at 16.

<sup>72</sup> High Level Report, *supra* note 66, at 13.

<sup>73</sup> United Nations Sustainable Development Knowledge Platform, United Nations Conference on Sustainable Development, Rio+20, <http://sustainabledevelopment.un.org/rio20.html> (last visited Nov. 6, 2013).

<sup>74</sup> Earth Summit, UN Conference on Environment and Development (1992), <http://www.un.org/geninfo/bp/enviro.html> (last visited Nov. 6, 2013).

which sets forth a number of important statements and decisions regarding sustainable development.<sup>75</sup>

On climate change, the Future We Want had this to say:

“We underscore that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, with a view to accelerating the reduction of global greenhouse gas emissions. We recall that the United Nations Framework Convention on Climate Change provides that parties should protect the climate system for the benefit of present and future generations of humankind on the basis of equity and in accordance with their common but differentiated responsibilities.”<sup>76</sup>

As regards the energy sector, the Future We Want states as follows:

“We recognize the critical role that energy plays in the development process, as access to sustainable modern energy services contributes to poverty eradication, saves lives, improves health and helps to provide for basic human needs...We recognize that access to these services is critical for achieving sustainable development.”<sup>77</sup>

The outcome document noted the launching of the “Sustainable Energy for All” initiative by the UN Secretary-General, which focuses on access to energy, energy efficiency and renewable energy.<sup>78</sup> This initiative, also known as SE4All, supports three interlinked objectives to be achieved by 2030: ensure universal access to modern energy services, double the global rate of improvement in energy efficiency, and double the share of renewable energy in the global energy mix.<sup>79</sup>

The Future We Want also contained an agreement by nations to launch a process to develop a set of Sustainable Development Goals (SDGs). These SDGs are intended to

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<sup>75</sup> The Future We Want, G.A. Res. 66/288, U.N. Doc. A/RES/66/288 (Oct. 11, 2012) [hereinafter referred to as “The Future We Want”], *available at* United Nations Sustainable Development Knowledge Platform, Future We Want – Outcome document, <http://sustainabledevelopment.un.org/futurewewant.html>.

<sup>76</sup> The Future We Want, *supra* note 75, at para. 191.

<sup>77</sup> The Future We Want, *supra* note 75, at para. 125.

<sup>78</sup> The Future We Want, *supra* note 75, at para. 129.

<sup>79</sup> Sustainable Energy for All, <http://www.sustainableenergyforall.org/objectives> (last visited Nov. 6, 2013).



build upon the MDGs and converge with the post-2015 development agenda,<sup>80</sup> and, among other things, address and incorporate in a balanced way all three dimensions of sustainable development – economic, social and environmental – and their interlinkages.<sup>81</sup> The document also underscored that SDGs should take into account different national realities, capacities and levels of development and respect national policies and priorities.<sup>82</sup>

The Future We Want mandated the creation of an inter-governmental Open Working Group (OWG) that will submit a report to the General Assembly containing a proposal for SDGs for consideration and appropriate action.<sup>83</sup> A 30-member OWG was mandated by the outcome document.<sup>84</sup> The OWG was established on January 22, 2013 by decision of the General Assembly, where an innovative, constituency-based system of representation was adopted, such that one to four countries share each seat in the OWG.<sup>85</sup> As such, there are a total of 70 countries in the OWG.<sup>86</sup>

The OWG started work in early 2013. The co-chairs of the OWG have issued an advance copy of the progress report on the work of the OWG at its first four sessions.<sup>87</sup> The excerpts below from their progress report illustrate the ambition of the OWG to formulate a transformative agenda:

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<sup>80</sup> The Future We Want, *supra* note 75, at paras. 245-251.

<sup>81</sup> The Future We Want, *supra* note 75, at para. 246.

<sup>82</sup> The Future We Want, *supra* note 75, at para. 247.

<sup>83</sup> The Future We Want, *supra* note 75, at para. 248.

<sup>84</sup> *Id.*

<sup>85</sup> United Nations Sustainable Development Knowledge Platform, Open Working Group on Sustainable Development Goals, Introduction, <http://sustainabledevelopment.un.org/index.php?menu=1549> (last visited Nov. 6, 2013).

<sup>86</sup> United Nations Sustainable Development Knowledge Platform, Open Working Group on Sustainable Development Goals, Members, <http://sustainabledevelopment.un.org/index.php?menu=1549> (last visited Nov. 6, 2013).

<sup>87</sup> United Nations Sustainable Development Knowledge Platform, Open Working Group on Sustainable Development Goals, Advanced unedited copy: Progress report on the work of the General Assembly Open Working Group on SDGs at its first four sessions, <http://sustainabledevelopment.un.org/content/documents/1927interimreport.pdf> (last visited Nov. 6, 2013).

“It is widely agreed that the Group’s proposal on SDGs should be accompanied by a vision and narrative that frames and motivates the selection of the proposed goals. A narrative is emerging which centres on the transformative change needed to realize our shared vision of poverty eradication and universal human development in the context of sustainable development, respecting human dignity, protecting our planet, and living in harmony with nature for the well-being and happiness of present and future generations...

Poverty eradication remains the overarching objective of the international community and needs to be central to a proposal on SDGs and the post-2015 UN development agenda...”<sup>88</sup>

The OWG’s progress report also stated:

“There is widespread recognition that poverty eradication can only be made irreversible if the SDGs advance sustainable development in a holistic manner, that is, if they address and incorporate in a balanced manner all three dimensions of sustainable development and their interlinkages.”<sup>89</sup>

The OWG’s program of work has included, thus far, conceptualizing the SDGs and discussion of poverty eradication; food security and nutrition; sustainable agriculture; desertification; land degradation and drought; water and sanitation; employment and decent work for all; social protection; youth; education; culture; health; and population dynamics.<sup>90</sup> Subsequent meetings of the OWG have been scheduled for November and December of 2013 and January and February of 2014.<sup>91</sup> Climate change will be one of the topics to be discussed by the OWG at meetings scheduled for January 2014.<sup>92</sup>

On August 9, 2012, the UN Secretary-General announced the launch of the United Nations Sustainable Development Solutions Network (SDSN) which is intended to mobilize scientific and technical expertise from academia, civil society and the private sector in support of sustainable development problem-solving at local, national and

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<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

<sup>90</sup> United Nations Sustainable Development Knowledge Platform, Open Working Group on Sustainable Development Goals, Schedule of work for the OWG 2013-2014, <http://sustainabledevelopment.un.org/content/documents/1778Pow2805.pdf> (last visited Nov. 6, 2013).

<sup>91</sup> *Id.*

<sup>92</sup> *Id.*

global scales.<sup>93</sup> On June 6, 2013, the SDSN issued a report for the UN Secretary-General entitled “An Action Agenda for Sustainable Development.”<sup>94</sup> The report outlines the following ten priority challenges of sustainable development:

- End extreme poverty and hunger
- Achieve development and prosperity for all without ruining the environment
- Ensure learning for all children and youth
- Achieve gender equality and reduce inequalities
- Achieve health and wellbeing at all ages
- Increase agricultural production in an environmentally sustainable manner, to achieve food security and rural prosperity
- Make cities productive and environmentally sustainable
- Curb human-induced climate change with sustainable energy
- Protect ecosystems and ensure sound management of natural resources
- Improve governance and align business behavior with all the goals.<sup>95</sup>

Notably, the climate change-related goal calls for promoting sustainable energy for all and curbing greenhouse gas emissions from energy, industry, agriculture, built environment, and land-use change to ensure a peak of global carbon dioxide emissions by 2020.<sup>96</sup>

The Future We Want also contained the decision to establish an intergovernmental high-level political forum, known as the HLPF, to follow up on the

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<sup>93</sup> United Nations Sustainable Development Solutions Network, <http://unsdsn.org/> (last visited Nov. 6, 2013).

<sup>94</sup> United Nations Sustainable Development Solutions Network, An Action Agenda for Sustainable Development: Network Issues Report Outlining Priority Challenges, <http://unsdsn.org/2013/06/06/action-agenda-sustainable-development-report/> (last visited Nov. 6, 2013).

<sup>95</sup> *Id.* The report is available at <http://unsdsn.org/files/2013/10/An-Action-Agenda-for-Sustainable-Development.pdf>.

<sup>96</sup> *Id.*

implementation of sustainable development and to build on and subsequently replace the Commission on Sustainable Development.<sup>97</sup> The outcome document provided a long list of functions that the HLPF can perform, including “provide political leadership, guidance and recommendations for sustainable development” and “follow up and review progress in the implementation of sustainable development commitments” contained in the relevant outcomes of United Nations summits and conferences.<sup>98</sup>

A draft resolution on the establishment of the HLPF was agreed upon and adopted by the General Assembly on July 9, 2013.<sup>99</sup> Under the resolution, the HLPF will be created in a “hybrid” format with meetings convened under the auspices of both the General Assembly and the Economic and Social Council (ECOSOC).<sup>100</sup> Meetings under the auspices of the General Assembly are to be convened at the highest possible level, i.e., Heads of State and Government, every four years for a period of two days at the beginning of the General Assembly session and these meetings will produce a “concise negotiated political declaration.”<sup>101</sup> Meetings under the auspices of ECOSOC will be convened annually for a period of 8 days with a 3-day ministerial segment, which will result in a “negotiated ministerial declaration” for inclusion in the report of ECOSOC to the General Assembly.<sup>102</sup> Starting in 2016, the ECOSOC meetings will also conduct regular, voluntary and state-led reviews on the follow-up and implementation of

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<sup>97</sup> The Future We Want, *supra* note 75, at para. 84.

<sup>98</sup> The Future We Want, *supra* note 75, at para. 85.

<sup>99</sup> Press Release, General Assembly, In Two Texts, General Assembly Establishes Political Forum to Replace Commission on Sustainable Development, Reaffirms UN Role in Global Economic Governance, U.N. Press Release GA/11393 (July 9, 2013).

<sup>100</sup> G.A. Res. 67/290, ¶ 3, U.N. Doc. A/RES/67/290 (July 9, 2013).

<sup>101</sup> G.A. Res. 67/290, *supra* note 100, at ¶ 6.

<sup>102</sup> G.A. Res. 67/290, *supra* note 100, at ¶ 7.

sustainable development commitments and objectives, including the post-2015 development agenda.<sup>103</sup>

The inaugural meeting of the HLPF was held on September 24, 2013 under the auspices of the UN General Assembly. The theme of the session was “Building the future we want: From Rio+20 to the post-2015 development agenda.” While this meeting was a promising start, ultimately, the effectiveness of the HLPF will depend on its actual implementation, including the future functioning of ECOSOC, which is currently undergoing a reform (in UN-speak, “strengthening”) process.<sup>104</sup> To be sure, there is a risk that the HLPF will become just a “talk shop” that is unable or unwilling to make substantive decisions regarding global sustainability – this will depend on the leadership, political will and resources that are dedicated to this endeavor.

The Future We Want also contained an agreement to establish an intergovernmental process to assess financing needs, evaluate financing initiatives, and prepare a report proposing options on an effective sustainable development financing strategy.<sup>105</sup> An intergovernmental committee, comprising 30 experts nominated by regional groups, has been tasked to implement this process and conclude its work by 2014.<sup>106</sup> The first session of the Intergovernmental Committee of Experts on Sustainable Development Financing began on August 28, 2013 and focused on the Committee’s agenda, modalities, content and scope of work.<sup>107</sup> The Committee agreed to organize its

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<sup>103</sup> G.A. Res. 67/290, *supra* note 100, at ¶ 8.

<sup>104</sup> See United Nations Economic and Social Council, Further review of the Implementation of Resolution 61/16 on the strengthening of the Economic and Social Council, <http://www.un.org/en/ecosoc/about/strengtheningofecosoc.shtml> (last visited Nov. 6, 2013).

<sup>105</sup> The Future We Want, *supra* note 75, at para. 255.

<sup>106</sup> The Future We Want, *supra* note 75, at para. 256.

<sup>107</sup> United Nations Sustainable Development Knowledge Platform, Intergovernmental Committee of Experts on Sustainable Development Financing, <http://sustainabledevelopment.un.org/index.php?menu=1558> (last visited Nov. 6, 2013).

work in three thematic clusters as follows: (i) Cluster 1: assessing financing needs, mapping of current flows and emerging trends, and the impact of domestic and international environments; (ii) Cluster 2: mobilization of resources and their effective use; and (iii) Cluster 3: institutional arrangements, policy coherence, synergies and governance issues.<sup>108</sup> The work of the Committee appears to represent the beginning of a process to develop a workable financing strategy for sustainable development.

Thus, we currently see energetic developments in global sustainable development processes, including but not limited to (i) building on the MDGs towards a post-2015 development agenda; (ii) the High Level Report that contains a promising post-2015 framework and many substantive proposals; (iii) the implementation of a Sustainable Energy for All initiative; (iv) an Open Working Group process to develop SDGs that is transparent and ambitious and aspires towards a transformative agenda with a holistic approach; (v) the building of a HLPF that is linked to the General Assembly and ECOSOC to follow up on the implementation of sustainable development; and (vi) a process to develop an effective financing strategy for sustainable development.

It is still too early to see exactly how each of the unfinished work of the MDGs, the post-2015 development agenda, and the SDG process will converge; nevertheless, there is agreement that these work streams should and will converge to produce a single, integrated and universal sustainable development framework and set of global goals by September 2015.<sup>109</sup> It is also too early to tell how these processes and mechanisms will

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<sup>108</sup> United Nations Sustainable Development Knowledge Platform, Intergovernmental Committee of Experts on Sustainable Development Financing, Co-Chairs' Summary of the First Session, <http://sustainabledevelopment.un.org/content/documents/2028ICESDF-Co-Chairs-Summary-FirstSession.pdf> (last visited Nov. 6, 2013).

<sup>109</sup> See Outcome document of the special event to follow up efforts made towards achieving the Millennium Development Goals, U.N. Doc. A/68/L.4 (Oct. 1, 2013) (reissued for technical reasons on Oct. 8, 2013).

work in the real world, in particular as regards *means of implementation*, i.e., financing, technology transfer, capacity-building and a development-oriented multilateral trading system.<sup>110</sup> The key factors for success will be the preponderance of leadership, political will and resources in implementing this framework and agenda. Nevertheless, **this moment in time may be an inflection point in global development**, as the international community moves beyond the MDGs into thinking about the state of the world in the next 15-30 years.

There is a growing realization of the need for transformative change, and these processes to advance the global sustainable development framework and agenda are among the most ambitious and exciting activities occurring in the international arena at this time. However, despite the centrality of the climate crisis to development, the UNFCCC processes appear to operate under separate agendas and by separate groups without substantive coordination with the processes for advancing the global sustainable development framework and agenda. To be fair, parts of the UNFCCC system have been looking at certain issues of sustainable development (including the concept of equitable access to sustainable development), but such efforts, while laudable, take place within the UNFCCC system without apparent convergence or integration with the work streams in the global sustainable development processes.

At the 68<sup>th</sup> UN General Assembly High-level Debate held in New York during September 24 to October 1, 2013, many countries urged action on climate change. Numerous speakers highlighted climate change as a priority for the post-2015 development agenda, and supported UN Secretary-General Ban Ki-moon's

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<sup>110</sup> The Future We Want, *supra* note 75, paras. 252-282.

announcement on convening a High Level Summit on Climate Change.<sup>111</sup> Several speakers also highlighted the vulnerabilities of the small island developing states (SIDS).<sup>112</sup> Despite this sense of urgency, there were no suggestions to converge or integrate (or at a minimum coordinate) the UNFCCC process with the broader processes of the post-2015 development agenda and the SDGs. Thus, operational action on global climate policy appears to remain largely within the UNFCCC “silo” and thus limited to efforts to improve the UNFCCC process and outcomes. While efforts within a system to fix itself are indeed commendable, this thesis argues for a transformative approach to converge international collective action on climate change with the broader frameworks of global sustainable development processes.

#### **4. A Proposal for Convergence**

##### *4.1 Conceptualization*

There is a fundamental division in the global responses to the interlinked imperatives of sustainable development and climate change. The evolution of this division over the years can be traced to how Agenda 21 was implemented. Agenda 21 presented an ambitious and comprehensive program of sustainable development based on all three pillars of sustainable development – economic, social and environmental. The implementation of Agenda 21, in practical effect, was manifested on different tracks.<sup>113</sup> On one track, economic and social development, under the rubric of “human development,” focused on concerns over poverty eradication and ultimately led to the

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<sup>111</sup> Sustainable Development Policy & Practice, News, UNGA Debate Addresses Post-2015 Priorities, <http://uncsd.iisd.org/news/unga-debate-addresses-post-2015-priorities/> (last visited Nov. 6, 2013).

<sup>112</sup> Sustainable Development Policy & Practice, News, UNGA 68 High-level Debate Continues Discussion of Post-2015 Agenda, <http://uncsd.iisd.org/news/unga-68-high-level-debate-continues-discussion-of-post-2015-agenda/> (last visited Nov. 6, 2013).

<sup>113</sup> United Nations Department of Economic and Social Affairs, *World Economic and Social Survey 2013, Sustainable Development Challenges*, at 24, available at [http://www.un.org/en/development/desa/policy/wess/wess\\_current/wess2013/WESS2013.pdf](http://www.un.org/en/development/desa/policy/wess/wess_current/wess2013/WESS2013.pdf).



formulation of the MDGs.<sup>114</sup> The MDGs, however, were weak on environmental protection.<sup>115</sup> On the other track, environmental protection crystallized in the form of international agreements on specific concerns, for example, global warming as reflected in the UNFCCC; biodiversity as reflected in the Convention on Biological Diversity; and desertification as reflected in the United Nations Convention to Combat Desertification.<sup>116</sup> These two tracks also have different “domain configurations,” in that action on the MDGs were largely the domain of developing countries, while the Kyoto Protocol, in accordance with the principle of common but differentiated responsibilities, imposed emission reduction targets only on developed countries while exempting developing countries from such requirements.<sup>117</sup>

These separate tracks have led to a conceptual and operational disjunction between human development and poverty eradication, on the one hand, and environmental protection and climate change, on the other hand. At this point in time, the world appears to have reached a climate change mitigation impasse. It is one of the central contentions of this thesis that (i) in order to move beyond this impasse, this disjunction needs to be resolved, i.e., the two tracks should converge and be integrated at some level, and that (ii) because, as mentioned above, we are likely to be at, or fast

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<sup>114</sup> *Id.*

<sup>115</sup> *Id.* As the UN Department of Economic and Social Affairs has stated: “The Millennium Development Goal directly related to the environment is Goal 7, which focused originally on reduction of slums and greater access to clean drinking water. Later on, biodiversity protection targets, among others, were added. However, these targets did not achieve prominence and were not pursued vigorously within the Millennium Development Goals framework. For example, although the expanded list of Goal 7 targets included a carbon dioxide (CO<sub>2</sub>) emissions reduction, the main international effort to reduce CO<sub>2</sub> proceeded under the auspices of the United Nations Framework Convention on Climate Change.” World Economic and Social Survey 2013, *supra* note 113, at n. 6.

<sup>116</sup> World Economic and Social Survey 2013, *supra* note 113, at 24.

<sup>117</sup> *Id.*

approaching, an inflection point in global development, the time may now be ripe to move toward such convergence and integration.

Such convergence and integration could re-integrate the implementation of Agenda 21 into a single track under a framework for sustainable development that is:

- (1) **universal**, i.e., applicable to all countries, both developed and developing, thus resolving the dilemma of the different “domain configurations” of the separate tracks;
- (2) **comprehensive and integrated**, such that it encompasses all three pillars of sustainable development and leverages the full panoply and power of the emerging global processes and mechanisms for implementing sustainable development, including the post-2015 development agenda, the SDGs, the HLPF, and financing strategies;
- (3) **multidimensional**, in its recognition that poverty (including energy poverty), hunger and malnutrition are all interlinked with the climate crisis and that these challenges cannot be addressed in “silos”; and
- (4) **input-based**, such that specific sustainable development goals, targets and indicators that encompass sustainable energy and climate mitigation are contained in a broad development agenda that aspires for transformational change.

As discussed above, an “input” approach based on a sustainable energy agenda within a sustainable development framework can be pragmatic, morally justifiable and potentially politically feasible. *This approach could have the contingent benefit of mitigating climate change while respecting individual nations’ right to development*

*under a universally agreed framework.* An aspirational call for transformative change could also inspire global action and partnerships across the public and private sectors to foster the energy innovation that will be needed to “decouple” economic growth from fossil fuel utilization.

The convergence and integration of the two tracks would also have the benefit of providing coherence in global climate policy. Given the parallel processes to develop a universal sustainable development framework by 2015 and an international climate change agreement under the UNFCCC also by 2015, a number of pathways are possible, including: (i) the universal sustainable development framework could say nothing or very little about climate change – this would seem inadvisable, given the recognized interlinkages between climate change and development, and unlikely, given the work of the OWG thus far; or (ii) the universal sustainable development framework could have climate change related goals, targets and indicators, but like the MDGs vis-à-vis environmental protection, it would be a half-hearted attempt with little visibility or support with the consequence that they would become largely irrelevant and fruitless – this outcome, while possible, would be a seriously disappointing end to the promising start of the post-2015 development agenda and the SDG processes.

One question that may arise in considering such convergence and integration is: which institutional process should take precedence, i.e., whether the UNFCCC should take precedence such that climate change-related SDGs would fall under the auspices and responsibility of the UNFCCC process and mechanisms, or the other way around? On the one hand, subordinating particular SDGs to the flawed UNFCCC process would likely dilute the effectiveness of the SDG process and narrow its scope, which is intended

to be coherent with a broad post-2015 development agenda. On the other hand, given the institutional growth of the UNFCCC process, it seems implausible that it could be effectively subordinated to the SDG and post-2015 development agenda process. The question, however, assumes that one process has to take precedence over or be subordinated to the other. On the contrary, the issue is not so much a question of precedence or subordination of one process vis-à-vis another, but rather the creative *convergence* of multiple work streams that can flow into an *integrated* global climate policy.

Such integration could initially be manifested at a programmatic level, where the agendas, programs and personnel of two or more work streams could be merged or otherwise very closely coordinated to enable “cross-fertilization” of concepts and action steps. It is likely that merely combining personnel – the people participating in the meetings – would have a major impact on facilitating such cross-fertilization and be an enabling driver of programmatic integration. Once programmatic integration occurs, it should increase the likelihood of the “organic” development and evolution of policy integration, which would be the ultimate goal.

A specific area within the UNFCCC universe where such programmatic integration could be initiated is in “work stream 2” of the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP). The ADP is a subsidiary body that was established by the decisions adopted by the Conference of the Parties, 17<sup>th</sup> session (COP 17) held in Durban, South Africa, in November 2011.<sup>118</sup> Those decisions noted the significant gap between (i) the aggregate effect of parties’ mitigation pledges in terms of

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<sup>118</sup> United Nations Framework Convention on Climate Change, Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP), <http://unfccc.int/bodies/body/6645.php> (last visited Nov. 6, 2013).

global annual emissions of greenhouse gases by 2020 and (ii) aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2° C or 1.5° C above pre-industrial levels.<sup>119</sup> This gap has become known as the “pre-2020 ambition gap.” Thus, the COP 17 decisions launched a “workplan on enhancing mitigation ambition to identify and to explore options for a range of actions that can close the ambition gap with a view to ensuring the highest possible mitigation efforts by all Parties.”<sup>120</sup>

At its first session in 2012, the ADP adopted an agenda that initiated work under two work streams: (i) work stream 1, which relates to the process to develop a protocol, another legal instrument or an agreed outcome with legal force by 2015 and to be in effect from 2020, and (ii) work stream 2, which relates to increasing pre-2020 ambition.<sup>121</sup>

Given that the SDG process would likely yield constructive proposals on climate change mitigation, the programmatic integration of the SDG process with ADP work stream 2 could lead to greater global synergies in identifying and implementing mitigation options and efforts to close this gap. In other words, the conceptualization and formulation of SDG targets and indicators relating to climate change mitigation could be expected to bear a strong relationship to framing and informing the thinking and potential action regarding enhancing pre-2020 ambition. As such, pursuing programmatic integration across these specific work streams in the short to medium term would seem

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<sup>119</sup> Decisions adopted by the Conference of the Parties, Decision 1/CP.17, U.N. Doc. FCCC/CP/2011/9/Add.1 (Mar. 15, 2012).

<sup>120</sup> *Id.*

<sup>121</sup> *See supra* note 118.

sensible. The longer-term goal would be for policy integration to develop and evolve naturally (“organically”) from such programmatic integration.

To be sure, it should be recognized that the second track – the international convention/treaty approach – does have the advantage or benefit of producing “hard law” obligations and “soft law” commitments<sup>122</sup> in comparison to aspirational norms, such as the MDGs and SDGs. However, it should also be recognized that aspirational norms, by their nature, are generally more politically attractive than legal regimes and are thus likely to contain higher ambition and engender greater participation in the international arena.

At this early stage of the process, the SDG framework appears to be moving towards a normative program where countries are expected to agree to a core set of SDGs and, within each SDG, to select a set of non-binding sustainable development targets and indicators – a framework that has been called a “global dashboard.”<sup>123</sup> As such, it appears to be tending towards a flexible, bottom-up approach that allows countries to customize their development pathways.

In terms of converging and integrating the two tracks, it may be possible to combine the normative nature of the SDGs with limited legal remedies. For example, certain SDG targets such as sustainable energy targets (which represent, in effect, climate mitigation efforts) could be coupled with the requirement to fund into an adaptation

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<sup>122</sup> Soft law commitments can exist within a hard law framework, for e.g., the Copenhagen accord under the UNFCCC. As the self-described climate pragmatists point out, the UNFCCC’s Copenhagen accord perpetuates the “conceit” of international climate negotiations because “in reality, the emission targets will be unenforceable and thus aspirational goals.” *See supra* text accompanying note 44.

<sup>123</sup> A “global dashboard” for the post-2015 development agenda was proposed by Colombia: a set of SDGs would be defined that reflect priority areas for development; for each SDG, a core set of targets with respective indicators would be defined at an international level; and countries would determine which targets and indicators are relevant for them and define national milestones. *See* A Global Dashboard for the new Post 2015 Development Agenda, A proposal from the Government of Colombia, <http://sustainabledevelopment.un.org/content/documents/3621colombia.pdf>.

fund<sup>124</sup> in the event that such targets are not met because of failure to take specified actions. Such an approach would arguably be consistent with the “polluter pays” principle, in that every dollar that is not spent on mitigation can be said to result in additional dollars that will need to be spent on adaptation.

Under the SDG framework, countries could, in connection with making selections under a “global dashboard” of sustainable development targets and indicators, agree to take specified actions to meet certain mitigation targets. Mechanisms could be put in place such that the failure by any country to follow through on such actions and meet its targets would lead to such country being obligated to make a certain amount of funding available to finance adaptation efforts in other countries. Alternative remedies might be to facilitate technology transfer or provide training/capacity-building to other countries in order to support their adaptation activities. The specific challenge would be to craft these remedies in a manner consistent with the principle of common but differentiated responsibilities (CBDR), which would likely mean differentiated responsibilities for developed and developing countries. The broader challenge here is how to integrate legal remedies into a normative program such as the SDGs without disaffecting countries and thereby reducing participation in the SDG framework or limiting the ambition of the SDG agenda.

To be sure, whether the international responses to climate change and sustainable development take the form of hard or soft law or normative strategies and plans, their

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<sup>124</sup> Such funding should be made available for financing adaptation activities in other countries and should not be permitted to recycle back to the funding country. Note that there is already an Adaptation Fund established under the UNFCCC. See United Nations Framework Convention on Climate Change, Adaptation Fund, [http://unfccc.int/cooperation\\_and\\_support/financial\\_mechanism/adaptation\\_fund/items/3659.php](http://unfccc.int/cooperation_and_support/financial_mechanism/adaptation_fund/items/3659.php) (last visited Nov. 6, 2013).

effectiveness will depend upon the legal mechanisms available in individual countries to enable their implementation. In other words, the *rule of law at the national level* is an essential component in managing the challenges of climate change and sustainable development at the international level. *Aspirational norms, such as the SDGs, can have a real world impact if their implementation at a national level is enabled through governance structures based on the rule of law.* Such governance structures should seek to ensure, among other things, public participation, transparency, fairness, integrity and accountability. Whether such implementation can occur is a question of politics and power within individual societies – arguably the same considerations apply even to hard law commitments, given the general lack of effective enforcement mechanisms in international law.

The UN Secretary-General has defined rule of law as “a principle of governance in which all persons, institutions and entities, including the State itself, are held accountable to publicly promulgated laws which are equally and fairly enforced, independently adjudicated, and consistent with international human rights standards.”<sup>125</sup>

A draft background paper produced by the United Nations Development Programme (UNDP) in August 2013 found “an emerging body of evidence that points to specific linkages between the rule of law and development that can provide a foundation for incorporating the rule of law into the post-2015 development framework.”<sup>126</sup> The background paper goes on to propose three general (and not mutually exclusive)

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<sup>125</sup> United Nations Rule of Law, About, What is the rule of law?, [http://www.unrol.org/article.aspx?article\\_id=3](http://www.unrol.org/article.aspx?article_id=3) (last visited Nov. 6, 2013).

<sup>126</sup> Louis-Alexandre Berg and Deval Desai, *Background Paper: Overview on the Rule of Law and Sustainable Development for the Global Dialogue on the Rule of Law and the Post-2015 Development Agenda* (Draft, August 2013), at 5, <http://www.undp.org/content/dam/undp/library/Democratic%20Governance/Access%20to%20Justice%20and%20Rule%20of%20Law/Global%20Dialogue%20Background%20Paper%20-%20Rule%20of%20Law%20and%20Sustainable%20Developme....pdf>.



approaches to incorporating the rule of law into the post-2015 development agenda: (1) define a common rule of law goal with a flexible basket of indicators that can be tailored to country contexts; (2) adopt the rule of law as a high level “enabling” goal, which would commit countries to make national-level policy changes that enable progress on other development goals; and (3) incorporate the rule of law across development goals through rule of law specific targets and indicators in support of other goals.<sup>127</sup>

#### 4.2 *Building Eco-civilization*

It should be recognized that the convergence and integration proposed in this thesis would be an extremely challenging task, given the institutionalization and vested interests that have built up over the years. Thus, while the aspiration for such convergence and integration should be transformational in orientation, it should not be unworkably utopian. From a pragmatic viewpoint, this highly ambitious endeavor would likely require strategic and effective leadership at the international level. The question arises: which country would be well placed to provide such leadership?

China is at a crossroads in its development. It has achieved significant economic growth, becoming the world’s second largest economy,<sup>128</sup> but in the process it has incurred very serious and dangerous pollution problems and environmental degradation.<sup>129</sup> China has also become the world’s largest emitter of carbon dioxide,<sup>130</sup>

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<sup>127</sup> Berg & Desai, *supra* note 126, at 39-41.

<sup>128</sup> The World Bank, China Overview, <http://www.worldbank.org/en/country/china/overview> (last visited Nov. 6, 2013).

<sup>129</sup> A recent law review article describes some of the environmental problems in China: “According to the World Bank, environmental pollution causes about 750,000 premature deaths in the PRC every year. About half of them are due to outdoor urban air pollution, with indoor air pollution causing most of the rest. Water pollution causes about 60,000 premature deaths annually...environmental degradation from pollution and other sources costs the PRC more than \$200 billion annually, which is ten percent of its annual gross domestic product (GDP), and roughly the same as its GDP growth rate in recent years.” Paul A. Barresi, *The Chinese Legal Tradition as a Cultural Constraint on the Westernization of Chinese Environmental Law and Policy: Toward a Chinese Environmental Law and Policy Regime with More*

and thus its active participation will be required for any global climate policy to be effective. While China has understandably prioritized economic growth and development, it must, in its own self-interest and in the planetary interest, also strive for reduction in pollution and environmental degradation and ultimately environmental restoration. China has already recognized this imperative and has invested billions of dollars to become a world leader in wind power, solar photovoltaic energy, solar hot water systems, hydropower, biomass power and biofuels<sup>131</sup>; however, much more needs to be done.

As pointed out by the self-described climate pragmatists, the policies of energy innovation, pollution control and building resilience have the contingent benefits of decarbonization and managing climate change. Thus, China could, in pursuing such policies in its own self-interest, provide leadership to the rest of the world on managing the interlinked problems of climate change and sustainable development. As the UNFCCC, post-2015 development agenda and SDG processes continue to evolve, China could consider taking an active role in promoting the convergence of multiple work streams to achieve an integrated global climate policy that is pragmatic and effective. Providing such leadership would have the added benefits of projecting the image of China as a responsible country within the international community and enhancing China's international standing.

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*Chinese Characteristics*, 30 PACE ENVTL. L. REV. 1156, 1156-1157 (2013).

<sup>130</sup> EPA, Global Greenhouse Gas Emissions Data, <http://www.epa.gov/climatechange/ghgemissions/global.html> (last visited Nov. 6, 2013).

<sup>131</sup> See Worldwatch Institute, China on Pace to Become Global Leader in Renewable Energy, <http://www.worldwatch.org/node/5497> (last visited Nov. 6, 2013).

China has articulated the concept of building “eco-civilization” (生态文明) and it could adopt and refine this concept as a foundational philosophy and broad aspirational goal in connection with taking a more active role. In a seminal speech in 2009, Pan Yue, then Vice Minister of the Ministry of Environmental Protection in China, highlighted the concept of “eco-civilization,” basing it on the “ecological wisdom” of traditional Chinese culture.<sup>132</sup> In that speech, he expressed surprise at the number of Westerners who had begun to study the traditions of Chinese civilization to solve the modern ecological crisis.<sup>133</sup> Pan stated that Confucianism, Buddhism and Taoism have dominated Chinese culture for five thousand years and their joint influence has helped create the unique cultural system of the Chinese, which calls for order, balance, tolerance and harmony.<sup>134</sup> In Pan’s view, these traditional values contain profound ecological wisdom.<sup>135</sup> Pan believed that this ecological wisdom could be applied in modern society to form the “cultural foundation” which, together with an economic foundation, could build an “ecological civilization.”<sup>136</sup> Pan further believed that this ecological civilization would be the next phase of human civilization, after agricultural and industrial civilization.<sup>137</sup>

Since then, the concept of “eco-civilization” has been further emphasized in China at the 18<sup>th</sup> National Congress of the Communist Party of China held in November 2012 in Beijing, which put building eco-civilization as a strategically important priority

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<sup>132</sup> Pan Yue, Vice Minister, Ministry of Environmental Protection, People’s Republic of China, The Influence of Traditional Chinese Wisdom of Eco Care on Westerners (Jan. 4, 2009), *translated at* [http://english.mep.gov.cn/Ministers/Speeches/201107/t20110704\\_214385.htm](http://english.mep.gov.cn/Ministers/Speeches/201107/t20110704_214385.htm).

<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

<sup>135</sup> *Id.*

<sup>136</sup> *Id.*

<sup>137</sup> *Id.*

for the nation.<sup>138</sup> This concept was further elaborated in a speech by Minister Zhou Shengxian at the 2013 National Work Meeting on Environmental Protection, who indicated that building eco-civilization could be accomplished by absorbing traditional Chinese culture and wisdom and reflecting on the defects of industrialization and the current model of development.<sup>139</sup>

In July 2013, the Eco Forum Global (EFG) held its annual conference in Guiyang, China, dedicated to the theme “Building Eco-Civilization: Green Transformation and Transition – Green Industry, Green City and Green Consumption Lead Sustainable Development.”<sup>140</sup> The participants at the conference agreed that the concept of “eco-civilization” addresses a variety of aspects of the environment-climate-energy-water nexus relevant to sustainable development.<sup>141</sup> China’s President Xi Jinping sent a message of congratulations to the conference and noted that ecological progress is an important part of realizing the “Chinese dream.”<sup>142</sup> The Guiyang Consensus, which was adopted at the conference, stated that:

“No country, whether poor or rich, big or small, Eastern or Western, should follow past trends and patterns of industrialization, adopted without regard for their detrimental impact on ecological well-being. Instead, all should participate in speeding the transition to eco-civilization on the basis of their ability and following the principle of common but differentiated responsibilities.”<sup>143</sup>

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<sup>138</sup> Ministry of Foreign Affairs of the People’s Republic of China, The Ministry, Missions Overseas, News From Mission Overseas, *The 18<sup>th</sup> National Congress of the Communist Party of China Attracts Global Attention* (Nov. 25, 2012), <http://www.fmprc.gov.cn/eng/wjb/zwjg/zwbdt/992461.htm>.

<sup>139</sup> Ministry of Foreign Affairs of the People’s Republic of China, Ministers, Speeches, Speech by MEP Minister Zhou Shengxian at 2013 National Work Meeting on Environmental Protection (Feb. 4, 2013), translated at [http://english.mep.gov.cn/News\\_service/Photo/201301/t20130129\\_245653.htm](http://english.mep.gov.cn/News_service/Photo/201301/t20130129_245653.htm).

<sup>140</sup> See Guiyang Consensus 2013, adopted at the Eco Forum Global (EFG) Annual Conference Guiyang 2013, available at <http://afruc.org/Guiyang%20Consensus%202013.pdf>.

<sup>141</sup> Guiyang Consensus, *supra* note 140, at 4.

<sup>142</sup> Message of Congratulations from President Xi Jinping to the Eco Forum Annual Global Conference Guiyang 2013 (July 20, 2013), <http://www.fmprc.gov.cn/eng/zxxx/t1061093.shtml>.

<sup>143</sup> Guiyang Consensus 2013, *supra* note 140, at 4.

The Guiyang Consensus recommended that the concept of eco-civilization be incorporated into the post-2015 development agenda.<sup>144</sup> The Guiyang Consensus sets forth four priorities:

- Accelerate green development and green industrial transformation
- Promote social harmony and inclusive development
- Take the strictest measures for the repair of damaged ecosystems and depleted natural resources
- Popularize ecological values<sup>145</sup>

The Guiyang Consensus noted that of particular urgency is the challenge of putting in place an enabling framework of institutions, policies, regulations and incentives that rewards behavior that is compatible with eco-civilization and discourages behavior that depletes natural, social or economic capital.<sup>146</sup>

To be sure, the concept of eco-civilization needs to be further defined and refined, in particular to develop tools of implementation and measurement,<sup>147</sup> and its philosophical underpinnings should be broadened beyond classical Chinese philosophy in order to achieve universal resonance. Nevertheless, the concept potentially provides a powerful and holistic vision for the future; indeed, building eco-civilization should surely include pragmatic pathways to managing the interlinked challenges of climate change

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<sup>144</sup> *Id.*

<sup>145</sup> Guiyang Consensus 2013, *supra* note 140, at 4-6.

<sup>146</sup> Guiyang Consensus, *supra* note 140, at 7.

<sup>147</sup> The International Union for Conservation of Nature (IUCN) China and the Elion Foundation have recently established a joint pilot project to test China's "Gross Ecosystem Product" (GEP), a tool being developed to measure the total economic value of all ecosystem products and services that nature provides for human well-being. The GEP is seen as related to China's eco-civilization initiative. This project will be conducted in Kubuqi, Inner Mongolia, and will develop and test a framework for evaluating GEP and identify arrangements for establishing a GEP accounting system. See IUCN, News, *IUCN China takes lead in measuring the true value of nature* (Feb. 26, 2013), [http://www.iucn.org/news\\_homepage/news\\_by\\_date/?12537/IUCN-China-takes-lead-in-measuring-the-true-value-of-nature](http://www.iucn.org/news_homepage/news_by_date/?12537/IUCN-China-takes-lead-in-measuring-the-true-value-of-nature).

and sustainable development. If China is willing to provide strategic leadership as suggested herein, then one of the first steps it could take is to advocate for the inclusion of the concept of eco-civilization in the post-2015 development agenda. China could also consider active advocacy for, among other things, sustainable energy for all and practical solutions in energy, industry, agriculture, built environment, and land use to ensure a peak of global carbon dioxide emissions by 2020.

In addition to the economic and cultural foundations suggested by Pan Yue, we should add “legal foundation” to the building blocks of the concept of eco-civilization. As mentioned above, the rule of law at the national level is an essential component for ensuring the effectiveness of international responses to climate change and sustainable development. As the Rio+20 Declaration on Justice, Governance and Law for Environmental Sustainability stated: “Without adherence to the rule of law...the outcomes of Rio+20 will remain unimplemented.”<sup>148</sup> The Declaration went on to state:

“Environmental sustainability can only be achieved in the context of fair, effective and transparent national governance arrangements and rule of law, predicated on:

- (a) fair, clear and implementable environmental laws;
- (b) public participation in decision-making, and access to justice and information, in accordance with Principle 10 of the Rio Declaration, including exploring the potential value of borrowing provisions from the Aarhus Convention in this regard;
- (c) accountability and integrity of institutions and decision-makers, including through the active engagement of environmental auditing and enforcement;
- (d) clear and coordinated mandates and roles;

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<sup>148</sup> The Rio+20 Declaration on Justice, Governance and Law, at 2, *available at* [http://www.unep.org/rio20/Portals/24180/Rio20\\_Declaration\\_on\\_Justice\\_Gov\\_n\\_Law\\_4\\_Env\\_Sustainability.pdf](http://www.unep.org/rio20/Portals/24180/Rio20_Declaration_on_Justice_Gov_n_Law_4_Env_Sustainability.pdf) [hereinafter, the “Declaration”]. The Declaration was produced at the World Congress on Justice, Governance and Law for Environmental Sustainability held in Rio de Janeiro, Brazil in June 2012. *See* UNEP, Environmental Rule of Law, <http://www.unep.org/delc/worldcongress/> (last visited Nov. 6, 2013). The Declaration attempts to capture the wide range of views of participants at the World Congress on Justice, Governance and Law for Environmental Sustainability, and does not represent a formally negotiated outcome nor does it necessarily capture all individual views or represent country or institutional positions, or consensus on all issues. *See* Declaration, n.1.

- (e) accessible, fair, impartial, timely and responsive dispute resolution mechanisms, including developing specialized expertise in environmental adjudication, and innovative environmental procedures and remedies;
- (f) recognition of the relationship between human rights and the environment; and
- (g) specific criteria for the interpretation of environmental law.

Environmental sustainability can only be achieved if there exist effective legal regimes, coupled with effective implementation and accessible legal procedures, including on *locus standi* and collective access to justice, and a supporting legal and institutional framework and applicable principles from all world legal traditions.”<sup>149</sup>

A legal foundation, based on the rule of law, will be one of the essential elements, together with economic and cultural foundations, in the reification of the concept of eco-civilization.

Lao Tzu, an ancient Chinese philosopher, is said to have remarked that a journey of a thousand miles begins with a single step. The first step in our journey is to conceptualize our ecological crises within the wider contexts of sustainability and social equity, and then based on such conceptualizations, to re-imagine our current global processes and, importantly, to re-set them on pragmatic pathways. The time may now be ripe for a fresh, new approach that harkens back to the original, bold vision of Agenda 21:

“Humanity stands at a defining moment in history. We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being. However, integration of environment and development concerns and greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. No nation can achieve this on its own; but together we can - in a global partnership for sustainable development.”<sup>150</sup>

<sup>149</sup> Declaration, *supra* note 148, at 2-3.

<sup>150</sup> Agenda 21, at pmbl. para.1.1, U.N. GAOR, 46<sup>th</sup> Sess., Agenda Item 21, U.N. Doc. A/Conf. 151/26 (1992), available at <http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>.