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A joint newsletter of the International Environmental and Resources Law Committee; Climate Change, Sustainable Development, and Ecosystems Committee; and the Section of International Law’s International Environmental Law Committee

International Climate Negotiations

Photo Credit: Minori Lee (Paris, February 2014)
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ABA SIL 2017 Spring Meeting
Washington, DC

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CHAIRS’ MESSAGE
Stephanie Altman, R. Juge Gregg, Shannon Broome, Emily Fisher, Fatima Maria Ahmad, and Anastasia Telesetsky

As the chairs of the Section of Environment, Energy, and Resources International Environmental and Resources Law Committee (IERLC) and Climate Change, Sustainable Development, and Ecosystems (CCSDE) Committee and the Section of International Law’s International Environmental Law Committee (IELC), we are pleased to offer a joint newsletter focusing on the implementation of the global action plan agreed to at the 21st Session of the Conference of the Parties (COP21).

In December 2015, parties attending COP21 reaffirmed the goal of limiting global temperature increase to 2°C. Parties also established binding commitments to make nationally determined contributions (NDCs) to pursue domestic measures aimed at achieving climate mitigation, committed to report regularly on their emissions and progress made in implementing and achieving their NDCs, and agreed to submit new NDCs every five years. Developed countries also reaffirmed their commitment to climate finance to support developing countries.

There is no doubt that 195 countries adopting a new international climate agreement at COP21 in Paris will continue to build global momentum to address climate change. On April 22, 2016, the Paris Agreement shattered records for the number of nations signing on to an international agreement on the first day. In May 2016, the Ad Hoc Working Group on the Paris Agreement met in Bonn, Germany, to begin the process of ironing out the details of the principles that were laid out in the Paris Agreement. However, as we get further away from COP21, questions remain about how countries will fund and achieve their commitments in a transparent manner. Additionally, some wonder if the agreement at COP21 addresses all climate change concerns. Articles in this newsletter will discuss a variety of these concerns and provide potential solutions.

In the first article, Alicia Cate provides a summary of the agreement reached at COP21 and highlights the next major steps following the conference, including entry into force of the Paris Agreement. Mackenzie Landa argues in the second article that the relationship of animal agriculture and climate change should have been confronted during COP21. Next, Phillip Ludvigsen, PhD, and Bernard T. Delaney, PhD, PE, BCEE, write about how green bonds are being used to fund “green” (or climate-friendly) projects. Their article is followed by two articles focusing on transparency and COP21. P. Lawrence Teal discusses how to address human rights concerns using the REDD+ Web Platform Information Hub. Jennifer Huang outlines key lessons related to the Paris Agreement’s new common transparency system as well as challenges the new system faces and the timeline for implementation. Fatima Maria Ahmad then discusses how efforts in Japan show how bilateral voluntary cooperation that leverages a nation’s technological expertise and financial resources may help countries achieve emission reductions. In the following article, Robert B. McKinstry Jr. analyzes the Urgenda Foundation v. Netherlands decision and the potential implications for the United States in light of the Paris Agreement. The newsletter ends with an article written by Snehashish Sadhu exploring urban air pollution in Delhi and suggests policy implementations to address the issue.

Our committees enjoy active participation by members, with quality programs arising from member involvement. If you want to get more involved in any of our committees’ activities, please let our committee chairs know (IERLC: Stephanie Altman at stephanie.l.altman@gmail.com or R. Juge Gregg at jugegregg@gmail.com; CCSDE: Shannon Broome at shannon.broome@kattenlaw.com or Emily Fisher at EFisher@eic.org; or SIL IELC: Fatima Maria Ahmad at fatima.maria.ahmad@gmail.com or Anastasia Telesetsky at atelesetsky@uidaho.edu. Additional information is available on the committee websites.
Our newsletter editors are always ready to entertain article ideas and we also welcome periodic guest editors to help put together these newsletters. If you wish to propose an article, please contact our committee newsletter vice chairs (IERLC: Shannon Martin Dilley at dilleyshannon@gmail.com or Jonathan Nwagbaraocha at jonathan.nwagbaraocha@gmail.com; CCSDE: Victor N. Baltera at vbaltera@sandw.com, Diane Marchik at dnmarchik@gklaw.com or Eric Waeckerlin at eric.waeckerlin@dgslaw.com; and SIL IELC: Guillermo Malm Green at gmalmgreen@brons.com.ar).

Stephanie Altman and R. Juge Gregg are co-chairs of the International Environmental and Resources Law Committee. Shannon Broome and Emily Fisher are co-chairs of the Climate Change, Sustainable Development, and Ecosystems Committee. Fatima Maria Ahmad and Anastasia Telesetsky are co-chairs of the International Environmental Law Committee of the Section of International Law.

Thank you to the editorial team!

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PARIS AGREEMENT—OVERVIEW AND NEXT STEPS
Alicia Cate

Introduction

Since at least the late 1970s, scientists have known that greenhouse gas emissions from human activity are contributing to the warming of the planet. In 1988, NASA scientist James Hansen testified before the U.S. Congress about the need to take action on climate change, and his call to action was widely reported in popular media. See, e.g., Philip Shabecoff, Global Warming Has Begun, Expert Tells Senate, N.Y. TIMES, June 24, 1988, available at http://www.nytimes.com/1988/06/24/us/global-warming-has-begun-expert-tells-senate.html?pagewanted=2. Almost three decades later, at the end of 2015, with predicted climate change effects well under way, including rising temperatures, extreme weather events, melting ice, rising sea levels and ocean acidification, representatives from 195 nations and the European Union (EU) met in Paris for yet another round of climate negotiations.

Unlike prior negotiations, which began in 1990 at the UN General Assembly with the United Nations Framework Convention on Climate Change (UNFCCC) and have traversed a less than satisfactory path toward a solution in the intervening 25 years, an unprecedented 150 country leaders were present to launch the much anticipated 21st Conference of the Parties (COP21) in Paris. Their presence signaled to the world that perhaps, at long last, widespread consensus on the scientific reality of climate change and need to take action were at hand. But, what exactly did the Parties’ negotiators agree to in Paris? And, more importantly, what are the next steps that need to be taken to implement the agreement?

Overview

Following negotiations that lasted 12 arduous days and nights, on December 12, 2015, negotiators agreed upon the text of a 20-page decision (COP21 decision) and a 12-page annex, comprised of a preamble and 29 provisions entitled “Paris Agreement.” UNFCCC, Adoption of Paris Agreement, FCCC/CP/2015/L.9 (Dec. 12, 2015), available at https://unfccc.int/resource/docs/2015/cop21/eng/109.pdf. In addition to setting broad objectives (Article 2), some of the key issues agreed upon in the Paris Agreement include:

- mitigation (Articles 3–6)
- adaptation (Article 7);
- loss and damage (Article 8);
- support—financial, technological, and capacity-building (Articles 9–11);
- transparency (Article 13); and
- global stocktaking (Article 14).

Objectives

The primary objective set forth in Article 2 is to “strengthen the global response to the threat of climate change.” Paris Agreement art. 1. To achieve this objective, the Parties set a goal of holding the increase in the global average temperature to “well below” 2 degrees Celsius/3.6 degrees Fahrenheit above pre-industrial levels with the aim of limiting the temperature increase to 1.5 degrees Celsius/2.5 degrees Fahrenheit above pre-industrial levels. Paris Agreement art. 2(a). The “high ambition coalition,” spearheaded by Marshall Islands’ foreign minister, Tony de Brum, and representing more than 100 countries, successfully insisted on inclusion of a long-term goal in keeping with scientific advice and the group’s mantra: “1.5 to stay alive.” Karl Mathiesen & Fiona Harvey, THE GUARDIAN, Climate Coalition Breaks Cover in Paris to Push for Binding and Ambitious Deal, Dec. 8, 2015, available at http://www.theguardian.com/environment/2015/dec/08/coalition-paris-push-for-binding-ambitious-climate-change-deal. Adaptation so as not to threaten food production and ensuring financial flows for both mitigation and adaptation are also listed as means of achieving the primary objective. Paris Agreement art. 2(b), (c). A second objective requires that the Agreement be implemented in keeping with principles of equity and common but differentiated responsibilities and capabilities. Paris Agreement art. 2(2). Notably,
Unlike the arguably ineffective Kyoto Protocol, which only applies to Annex I countries and has seen several of the major emitters opt out, the Paris Agreement makes no mention of the UNFCCC Annex I, Annex II, and non-Annex I country lists that separate the world into categories according to developmental status and different commitments. UNFCCC, Parties and Observers, available at http://unfccc.int/parties_and_observers/items/2704.php (last visited Apr. 9, 2016). The intention of the Paris Agreement negotiators was for all provisions to apply to all Parties, regardless of developmental status, unless specifically stated otherwise, such as in the climate finance provisions.

Mitigation

In order to attain the mitigation goals set forth in Article 2, the Parties agreed to submit “nationally determined contributions” (NDCs) and agreed that their efforts will “represent a progression over time.” Paris Agreement art. 3. Thus, while the Agreement legally binds Parties to set NDCs, the level at which they are to be set is defined by each country as it deems best. A total of 145 countries (75 percent of the Parties representing 86 percent of global emissions) submitted “intended nationally determined commitments” (INDCs) prior to COP21, and, according to the UNFCCC Secretariat’s synthesis report, these INDCs were not on target to reach even the 2 degree goal. UNFCCC Secretariat, Synthesis Report on the Aggregate Effect of the Intended Nationally Determined Contributions, FCCC/CP/2015/7 at 11 (Oct. 30, 2015), available at http://unfccc.int/resource/docs/2015/cop21/eng/07.pdf. For this reason, much hope is being placed on the provisions requiring the Parties to ratchet NDCs down every five years. Paris Agreement arts. 4(3), 4(9), 14. The NDCs will be recorded in a public registry maintained by the UNFCCC Secretariat. Paris Agreement art. 4(12).

The Parties also set the “aim to reach global peaking of greenhouse gas emissions as soon as possible.” Paris Agreement art. 4(1). The Parties agreed that they “should take action to conserve

and enhance, as appropriate, sinks and reservoirs of greenhouse gases, . . . including forests.” Paris Agreement art. 5(1). Cooperative approaches to mitigation are to be facilitated through a mechanism established with the aim of promoting mitigation while fostering sustainable development, incentivizing participation in mitigation by public and private entities, contributing to emission reduction through transferred mitigation outcomes, and delivering on overall mitigation goals in global emissions. Paris Agreement art. 6(4).

Adaptation

Recognizing that “the current need for adaptation is significant,” the Parties set a “global goal on adaptation of enhancing adaptive capacity, strengthening resilience, and reducing vulnerability to climate change.” Paris Agreement art. 7(1), (4). The Parties acknowledged the need to provide for “participatory and fully transparent approach” to adaptation that considers “vulnerable groups, communities and ecosystems” and is based on “best available science” and “traditional knowledge of indigenous peoples.” Paris Agreement art. 7(5).

In addition to strengthening cooperative action on adaptation, the Parties committed to engaging in adaptation planning with the assistance of UN entities and to communicating periodically updated national adaptation plans to the UNFCCC Secretariat’s public registry. Paris Agreement art. 7(6)–(12).

Loss and Damage

While purposefully steering clear of any discussion of liability and compensation, an area of significant controversy, the Parties did include a provision at Article 8 of the Agreement that preserves prior progress on the topic of loss and damage. COP21 Decision at para. 52. In particular, the Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts, established at COP19 in 2013, is specifically referenced and retained as a mechanism for minimizing and addressing loss and damage associated with adverse effects on climate change through cooperation and enhanced
understanding of a variety of areas, including early warning systems, emergency preparedness, slow onset events, and comprehensive risk assessment and management. Paris Agreement art. 8(2)–(5); UNFCCC, Warsaw Mechanism for Loss and Damage Associated with Climate Change Impacts, available at http://unfccc.int/adaptation/workstreams/loss_and_damage/items/8134.php (last visited Apr. 9, 2016).

Support—Financial, Technological, and Capacity-Building

Significantly, developed country Parties committed to providing financial resources to assist developing country Parties with both mitigation and adaptation, while other Parties are encouraged to contribute. Paris Agreement art. 9(1)–(2). The level of financial commitment, however, is conspicuously absent from the Agreement, though it is mentioned in the COP21 Decision as being “a floor of USD 100 billion per year.” COP21 Decision at para. 54. Developed countries are required to report biennially on climate finance. Paris Agreement art. 9(5), (7). The UNFCCC Financial Mechanism is slated to administer climate finance under the Agreement. Paris Agreement art. 8.

The Parties recognized the importance of technology development and transfer for mitigation and adaptation and cooperative action and established a “technology framework” to guide the work of the UNFCCC’s Technology Mechanism in collaboration with the Financial Mechanism. Paris Agreement art. 10(1)–(4). Notably, the Parties agreed on a binding obligation to provide financial support to developing country Parties for implementation. Paris Agreement art. 10(5). Capacity building, while mentioned by the Parties as being important to enhancing the ability of developing country Parties “to take effective climate change action,” is discussed in non-binding language. Paris Agreement art. 11(1)–(4). The only binding action agreed upon was to take a future decision regarding “institutional arrangements for capacity-building.” Paris Agreement art. 11(5).

Transparency

Unlike much of the Paris Agreement, which is replete with non-binding terms such as “recognize,” “acknowledge,” “encourage,” or “should” (rather than “shall”), the transparency framework created in Article 13 is legally binding. And, with good reason, since its purpose is “to provide a clear understanding of climate action,” including NDCs under Article 4 and adaptation under Article 7. Paris Agreement art. 13(5). Key to the functioning of the transparency framework is the requirement that all Parties provide a national inventory report of emissions as well as information necessary to track each Party’s implementation of its NDCs. Paris Agreement art. 13(7). Adaptation information is recommended but not required. Paris Agreement art. 13(8). Developed countries are required to submit information about support provided to developing countries, whether in the form of climate finance, technology transfer, or capacity building. Paris Agreement art. 13(9). While not formally called this, the transparency framework serves as a critical compliance mechanism for the Agreement.

Global Stocktaking

Global stocktaking is also mandated in the Agreement. Paris Agreement art. 14(1). Starting in 2023 and every five years thereafter, the COP will “assess the collective progress towards achieving the purpose of this Agreement and its long-term goals.” Paris Agreement art. 14(1)–(2). The information is to be used by the Parties to update and enhance NDCs. Paris Agreement art. 14(3).

Next Steps

Opening for Signature—April 22, 2016 to April 21, 2017

The Paris Agreement is open for signature at the United Nations headquarters in New York from April 22, 2016—Earth Day—until April 21, 2017. Paris Agreement art. 20(1). Secretary General Ban Ki-moon presided over a high-level signing ceremony of world leaders on Earth Day in New York. On April 22, 2016, 175 countries

Climate Change Conference in Bonn, Germany—May 16–26, 2016
The 44th sessions of the Subsidiary Body for Implementation (SBI 44), the Subsidiary Body for Scientific and Technological Advice (SBSTA 44) as well as the first session of the Ad Hoc Working Group on the Paris Agreement (APA 1) took place in Bonn, Germany May 16–26, 2016. In the first APA 1 meetings, representatives of the Parties began ironing out the details of the principles that were laid out in the Paris Agreement, including further guidance on NDCs, agreeing on the modalities, procedures, and guidelines for the transparency framework, clarifications of the five-year global stocktaking, and preparations for entry into force. UNFCCC, Ad Hoc Working Group on the Paris Agreement, First session, Bonn, Germany, 16–26 May 2016—Provisional agenda, available at http://unfccc.int/files/bodies/apa/application/pdf/apa_1_provisional_agenda_-_advanced_version.pdf (last visited Apr. 9, 2016).

Entry into Force
The Paris Agreement will enter into force on the 30th day after at least 55 Parties accounting for at least 55 percent of global greenhouse gas emissions deposit instruments of ratification, acceptance, approval, or accession with the Depositary, which is the Secretary General of the United Nations. Paris Agreement art. 21(1). Several small island states are expected to lead the way. The European Union (EU) is likely to take some time to ratify; in light of the complexity of its status as a regional integration organization and the EU Burden-Sharing Agreement, the EU must first have the 28 ratifications of its Member States before ratifying as a whole.

In the United States, the Obama administration negotiated the Paris Agreement as an “executive agreement” rather than a treaty, which would have required the advice and consent of the Senate. The current political climate in the United States with climate deniers running for president coupled with the United States’ history of backing out of the Kyoto Protocol after signing may have factored into negotiators’ decision to include the specific withdrawal time frames found in the Paris Agreement. Withdrawal from the Agreement takes a total of four years—the term of a U.S. President—to take effect. Paris Agreement art. 28(1)–(2).

First NDCs Are Due to the UNFCCC Secretariat
Each Party’s first NDCs are due no later than when the Party submits its instrument of ratification, acceptance, approval, or accession. A Party that has already submitted an INDC can choose to use its previously submitted INDC in lieu of submitting a new NDC. COP21 Decision at para. 22. While not required, Parties could also take the opportunity to submit more ambitious NDCs.

Conclusion
The Paris Agreement is intended to be a balance between the “bottom up,” completely unbinding structure of the Copenhagen Accords and the “top down,” legally binding and prescriptive structure of the Kyoto Protocol. Needless to say, the Agreement has been both lauded for having finally brought the world to consensus on a solution and severely criticized for lacking firm commitments to fully address the climate change challenge that scientists have urged for decades must be tackled to safeguard life on planet Earth. Regardless of whether the negotiators struck the right balance in the Paris Agreement, one thing is certain: the future of this planet hangs in the balance, and the time is now for not only nations but also sub-national governments, private corporations, and individuals to take immediate action to address the climate change crisis before it is too late.

Alicia Cate is Senior Counsel at Oceana and a vice chair for Programs for the International Environmental Law Committee within the ABA Section of International Law. The views in this article are expressed by the author solely in her personal capacity and do not necessarily represent those of her employer or the ABA.
ADDRESSING THE ELEPHANT IN THE ROOM: ANIMAL AGRICULTURE ABSENT AT COP21
Mackenzie Landa

Around the world, people consume an average of 75 pounds of meat per person annually and Americans alone eat an average of three hamburgers per week. Skye Gould & Lauren F. Friedman, The Countries Where People Eat the Most Meat, TECHINSIDER, Sept. 26, 2015, 9:30 AM, http://www.techinsider.io/where-do-people-eat-the-most-meat-2015-9; Ellen Rolfes, The Hidden Costs of Hamburgers, PBS, Aug. 2, 2012, 5:30 PM, http://www.pbs.org/newshour/rundown/the-hidden-costs-of-hamburgers/. Couple that with the fact that consuming two pounds of beef produces the same amount of greenhouse gas emissions as driving for forty miles, it is not surprising that “[i]ndustrial agriculture is the single largest source of greenhouse gases.” David N. Cassuto & Sarah Saville, Hot, Crowded, and Legal: A Look at Industrial Agriculture in the United States and Brazil, 18 ANIMAL L. 185, 189 (2011–2012). However, despite the relation between animal agriculture and climate change, international discussions at the Twenty-first Session of the Conference of the Parties (COP21) largely ignored this important topic; where it was mentioned, the focus remained on food security, rather than mitigation. Going forward, to meet the climate goals set out in the Paris Agreement, emissions from animal agriculture will need to be factored into the discussions and become part of the plan.

Animal Agriculture’s Contribution to Climate Change

Animal agricultural greenhouse gas emissions are largely a result of the decrease in small-scale pasture-based farming and the takeover by large-scale animal factories, known as concentrated animal feeding operations (CAFOs), where animals are bred and raised in confinement for human consumption. Gowri Koneswaran & Danille Nierenberg, Global Farm Animal Production and Global Warming: Impacting and Mitigating Climate Change, 116 ENVT’L HEALTH PERSP. 578, 579 (2008). Not only do CAFOs present serious animal welfare and human health concerns, they are also a major driver of climate change. ROB BAILEY ET AL., LIVESTOCK—CLIMATE CHANGE’S FORGOTTEN SECTOR 2 (Chatham House 2014). Indeed, agriculture produces 18 percent of the world’s greenhouse gas emissions, even more than the transportation industry. Cassuto & Saville, supra, at 189. Specifically, animal agriculture is responsible for emitting 9 percent of global carbon dioxide and is the largest source of global nitrous oxide and methane, two particularly potent greenhouse gases. Bailey, supra, at 6; The Role of Livestock in Climate Change, FOOD AND AGRIC. ORG. OF THE UNITED NATIONS, http://www.fao.org/agriculture/lead/themes0/climate/en/ (last visited Apr. 2, 2016).

Livestock production activities such as enteric fermentation, a livestock digestive process; mismanagement of animal waste; fossil fuel combustion associated with fertilizer used for feed production; and processing and transportation of animal products all contribute to the emission of greenhouse gases. The Role of Livestock in Climate Change, supra. Furthermore, livestock production is one of the leading drivers of deforestation (to convert forest to pasture for livestock grazing and cropland to grow animal feed) and the resulting carbon dioxide emissions. The Role of Livestock in Climate Change, supra; Bailey, supra, at 6.

Animal Agriculture as a Missing Component of the COP21

Despite the devastating impacts animal agriculture has on climate change, when 195 countries met in December for climate talks in Paris at COP21, agriculture was noticeably missing from the final agreement. Indeed, the global climate agreement fails to mention the word “agriculture” even once.

Although the agreement does mention food in Article 2, it does so in the context of how climate change will affect food production and security,
instead of vice versa. Conference of the Parties on its Twenty-first Session, Paris, Nov. 30–Dec. 12, 2015, Decisions Adopted by the Conference of the Parties, Dec. 1/CP.17, Adoption of the Paris Agreement, U.N. Doc. FCCC/CP/2015 (Dec. 12, 2015), available at https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf. Not only does the climate agreement completely fail to mention animal agriculture as a leading emitter of greenhouse gas emissions, it also gives the industrial meat sector a path to avoid changing its practices. Indeed, Dr. Jonathan Scurlock, an adviser for the UK National Farmers’ Union, said of Article 2, “That’s the bit we can wave at our governments if they look to introduce measures that make the industry unprofitable.” Mark Rowe, Meat Industry Must Lobby to Protect Interests After Paris Climate Change Deal, GLOBALMEATNEWS.COM, Dec. 16, 2015, http://www.globalmeatnews.com/Environment/Meat-industry-must-lobby-to-protect-interests-after-Paris-climate-change-deal. Furthermore, the final agreement fails to acknowledge animal agriculture at all, let alone as a leading cause of greenhouse gas emissions.

In addition to the final climate deal, nations released plans, called “intended nationally determined contributions” (INDCs), to reduce greenhouse gas emissions domestically. Although a portion of the INDCs submitted mention agriculture in some form, these plans also fall short in terms of addressing animal agriculture. Juliana Vigorito, Animal Agriculture Is the Missing Climate Change Link at COP21, CENTER FOR A LIVABLE FUTURE (Dec. 7, 2015), http://www.livablefutureblog.com/2015/12/animal-agriculture-is-the-missing-climate-change-link-at-cop21. INDCs from some of the largest emitters, such as China, the United States, and the European Union, either mention agriculture just briefly or only discuss it in the context of food security. Vigorito, supra. Of the approximately 160 INDCs submitted, only 54 explicitly mention mitigating emissions produced by livestock production. Meryl Richards et al., How Countries Plan to Address Agricultural Adaption and Mitigation 3 (CGIAR Research Program on Climate Change, Agriculture and Food Security, 2015). In those INDCs that do address animal agriculture, it is often referred to as a focus area without discussing specifics on how to reduce the contribution the industry has on climate change. Richards, supra, at 3.

Throughout the two weeks of climate talks at COP21, animal agriculture was largely ignored. One exception was an official side event sponsored by the Humane Society International, during which speakers presented information on the inability to reduce emissions without decreasing meat production. Let’s Cool Down Meat’s Heat!, HUMANE SOC’Y INT’L EUR. (Dec. 22, 2015), http://www.hsi.org/world/europe/news/news/2015/12/meat-cop21-122215.html. A handful of leaders who delivered speeches throughout the conference, such as UN Secretary General Ban Ki-Moon and U.S. President Barack Obama, mentioned agriculture briefly, but only to express concern that climate change will impact food security and entirely failed to discuss the impacts industrial animal agriculture practices have on climate change. Vigorito, supra.

Therefore, although food and agriculture was a theme throughout the climate talks, it was largely addressed in the context of how food security would be affected by a rising climate and not how industrial animal farming practices contribute to that warming.

Where Do We Go from Here?

Global meat, dairy, and egg production is predicted to increase, with meat production doubling by 2050. David N. Cassuto & Sarah Saville, Hot, Crowded, and Legal: A Look at Industrial Agriculture in the United States and Brazil, 18 ANIMAL L. 185, 188 (2011–2012). As animal agriculture increases, so will the associated greenhouse gas emissions. Indeed, if current trends continue, methane and nitrous oxide emissions could more than double by 2055. Bailey, supra, at 6.

While animal agriculture was noticeably absent from the climate agreement, the document may
still be helpful in the effort to reduce the industry’s greenhouse gas emissions. For example, it is unlikely the goal set out in the climate deal can be met without a shift in global meat and dairy production and consumption. Bailey, supra, at 22. Therefore, the mere fact that the participating nations agreed to prevent global temperatures from rising more than 1.5 degrees Celsius will require those countries to decrease the amount of greenhouse gases produced by animal agriculture. In other words, if the emission reduction goals set by the climate agreement are to be met, the impacts that meat consumption and production have on the climate will need to be confronted.

Conclusion

Although the COP21 failed to face the issue of how to reduce emissions produced by animal agriculture, it created a global climate deal that will require nations to confront the problem in the near future. In the meantime, CAFOs continue to produce greenhouse gases at an alarming rate that will contribute to the irreversible warming of the planet. The climate talks in Paris opened the door for countries to begin the conversation about decreasing animal agriculture production and its resulting greenhouse gas emissions. Hence, it is imperative that nations around the world develop a sense of urgency in creating plans to address greenhouse gas emissions from animal agriculture.

Mackenzie Landa is an environmental LL.M. candidate at Vermont Law School where she focuses her research on animal welfare, sustainable agriculture, and climate change.

Help spread the word about the MDEP

Application deadline: August 1.

The Membership Diversity Enhancement Program (MDEP) is an initiative by the ABA Section of Environment, Energy, and Resources designed to increase the number of government lawyers and diverse lawyers in our Section. These lawyers have typically been under-represented among our members. The program’s goal is to have the Section’s programs, publications, and other activities reflect the diverse perspectives and interests of all lawyers who practice in the in the environmental, energy, or natural resources law areas.

Applications must be received by Monday, August 1, 2016.

A limited number of applicants will be selected. Selection criteria include degree of involvement in these areas and interest in the Section.

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Selected MDEP participants will receive the following benefits through August 31, 2017:
• 50% payment of your ABA dues and waived Section dues;
• Complimentary registration to one Section conference of your choice, and
• $400 travel reimbursement to attend a Section conference!

Please note: Consistent with the goal of increased membership diversity, the program especially encourages applicants who are not already ABA or Section members and applicants whose dues are not reimbursed by their employer.
The Conference of Parties (COP21) held in Paris last fall saw a surge of participation in climate change discussions by the financial industry compared to previous years. Banks and other institutions attended COP21 in full force and with a focus on funding for “green” (or climate friendly) projects. In order to finance such projects, options such as certified green bonds (or Climate Bonds) are becoming more and more in demand. This article will provide an introduction to green bonds, and the unique rewards and risks that lawyers should be aware of so that they can wisely guide the structuring of green bond offerings or due diligence for their clients.

What Is a Green Bond?

Green bonds are one of the fastest growing classes of fixed-assets investments. They offer the same features as regular bonds, but proceeds must be used to achieve a recognized environmental benefit (i.e., reduction of greenhouse gas emissions). Clearly there have been bonds funding green projects, such as alternative energy, for years. These are called unlabeled green bonds. Most investors lack the resources to conduct due diligence to make sure these bonds are truly green and not some front for funding, perhaps in part, non-green projects or assets. Thus labeled green bonds were born.

The Green Bond Principles (GBPs) are the most widely accepted guidelines for developing green bonds. These principles were developed by the International Capital Market Association. Under these principles, green projects are defined as projects or initiatives that will promote progress on environmental sustainability in line with the issuer’s stated process for project evaluation and selection.

The GBPs recognize the following broad categories for potential funding:

- Renewable energy
- Energy efficiency (including efficient buildings)
- Sustainable waste management
- Sustainable land use (including sustainable forestry and agriculture)
- Biodiversity conservation
- Clean transportation
- Sustainable water management (including clean and/or drinking water)
- Climate change adaptation

These categories include a variety of projects that offer potential environmental benefits, spanning the subjective spectrum of “dark green” to “light green,” to perhaps no additional environmental benefit at all. Due to the lack of standardized criteria, the market has settled on promoting transparency around the four pillars of the GBPs:

- Use of proceeds
- Project selection
- Management of proceeds
- Reporting/assurance

The GBPs, assuming they are fully followed, should provide investors valuable information to help them decide which bonds are “green” and which are not. In addition, bonds that meet these requirements and help communities advance toward a low-carbon economy are eligible for certification under the Climate Bonds Initiative’s certification program. Details on these bonds and the Climate Bonds Standard 2.0 can be found at the Climate Bonds Initiative’s website. CLIMATE BONDS INITIATIVE, http://www.climatebonds.net (last visited Apr. 18, 2016).

Surge in Market Growth

With the emergence of the next generation of GBPs and Climate Bonds Standard in 2015, the public and private sectors are beginning to realize the opportunities for funding. Since its creation in
2007, the green bond market exceeded $41 billion in 2015. Some believe the global market could exceed $100 billion in 2016. Although impressive, the total market size is small compared to the over $1 trillion global bond market.

The following are excellent examples of recent high-profile green bonds that have cropped up in the United States:

- **DC Water (October, 2015, AA+, $350 million)**
  DC Water Authority issued the first 100-year-term green bond to expand and upgrade its water infrastructure. Environmental benefits included improving water quality, climate resilience, and overall environmental quality of life (biodiversity, recreational river use, etc.). Financial benefits included locking in historically low interest rates for a century while attracting a whole new group of green bond buyers. In a press release, DC Water indicated that by issuing a green bond, DC Water lowered its cost of capital by two to six basis points (bps). Pamela Mooring, DC Water Issues $350 Million in Bonds for Capital Projects, DC WATER (Oct. 6, 2015), https://www.dcwater.com/site_archive/news/press_release739.cfm. The bond is currently undergoing the Climate Bond post-issuance certification process.

- **New York Metropolitan Transportation Authority (Feb. 2016, Aa1e, $500 million upsized to $782 million)**
  New York's Metropolitan Transportation Authority (MTA) issued the first certified Climate Bond in the United States. Funds were used to refinance existing electrified rail assets that comply with the Climate Bonds Standard low-carbon transport criteria. Because of strong investor demand, the offering was expanded from $500 to $782 million, making it the largest certified green bond in the U.S. MuniBond market.

- **Apple (Feb. 2016, Aa1e, $1.5 billion)**
  As part of an overall $12 billion bond offering, Apple carved out $1.5 billion for renewable energy, green buildings, and waste/pollution management projects. Although not Climate Bond certified, the bond is being structured to closely follow the GBP’s, including a second-party review and annual third-party verification. Lisa Jackson, ex-head of the U.S. Environmental Protection Agency and Apple’s vice president of environment, policy, and social initiatives said that the Paris Agreement prompted Apple to launch the green bond since hundreds of companies pledged to green their investments at the U.N. climate summit. Valerie Volcovici, Apple Issues $1.5 Billion in Green Bonds in First Sale, REUTERS—U.S. EDITION (Feb. 17, 2016, 2:42 PM), http://www.reuters.com/article/us-apple-greenbonds-idUSKCN0VQ2K2.

**Benefits of Going “Green”**

Green bond investments are unique in that both financial and nonfinancial benefits must be considered. They include the following:

- **Economic Upside**
  Although anecdotal, there is growing evidence that investors are willing to pay a pricing premium for labeled green bonds. A recent study (September 2015) by Barclays Research concluded there was an approximate 20 basis points difference between the spread of green bonds and comparable unlabeled issues in the secondary markets. Ryan Preclaw & Anthony Bakshi, The Cost of Being Green, BARCLAYS CREDIT RES. (Sept. 18, 2015), https://www.environmental-finance.com/assets/files/US_Credit_Focus_The_Cost_of_Being_Green.pdf. To put this in perspective, the current 20 basis points on a $1 billion green bond is a $2 million pricing premium. Possible explanations for the growing pricing premium are that labeled green bonds attract a greater diversity of investors (increasing demand), are limited in supply, are inherently less risky than unlabeled green bonds, and provide additional value via environmental benefits.
• **Reputation Benefits**
In general, quality labeled green bonds have received favorable press coverage—especially if the bond is a first for a given jurisdiction or industry. For bond underwriters and lawyers, green bonds offer an opportunity to grow their reputation as a high-value service provider. For some buyers, certified green bonds that have been third-party verified offer a simple way to confidently buy a complex fixed asset while differentiating themselves from competitors.

• **Environmental Attributes**
Investors should understand that there may be economic value to the environmental attributes they helped finance. For example, the value related to natural resources (e.g., air, soil, water, biodiversity, etc.) is referred to as “natural capital”; similarly, green bonds could fund carbon reductions, resulting in additional financial yields to issuers and/or investors from the sale of carbon credits.

• **First Mover Advantage**
As the labeled green bond market grows, the opportunity lies with “first movers” to capitalize on market share and customer loyalty. Organizations that start early have more time than competitors to accumulate and master knowledge in issuing, implementing, and verifying green bonds. In general, gradual market evolution and innovation provide first movers the best conditions for long-term dominance.

• **“Too Green to Fail”**
Failure to address climate change is not an option; trillions of dollars will be needed to finance climate-related mitigation, adaptation, and resilience. Gail Whiteman, Chris Hope & Peter Wadhams, Climate Science: Vast Costs of Arctic Change, NATURE, July 25, 2013, at 401. Since green bonds offer a potentially lower cost of capital to creating domestic jobs and improving local infrastructure, they possess a certain economic resiliency that appears to be translating into political clout.

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**Potential Risks Related to Green Bonds**

As with all investments, investors must assume some level of risk to garner a commensurate reward. Bond investors typically assess a variety of risks including market conditions, credit ratings, inflation, liquidity, economic and sector trends, taxes, political considerations, and so on. Their reward is the expected benefit of a monetary yield. By understanding the unique risks facing green bonds, green bond lawyers can minimize them while maximizing the value of the investment offering.

• **Greenwashing**
Defined by Dictionary.com as the superficial or insincere display of concern for the environment, greenwashing is the most recognized risk and requires investors to have access to relevant and reliable (read: verified) information to assess the level of “greenness.” Greenwashing, DICTIONARY.COM, http://www.dictionary.com/browse/-greenwashing?s=t (last visited Apr. 18, 2016). From a risk perspective, it is incumbent on the issuers and underwriters to provide sufficient and reliable environmental impact information to allow an informed decision. If there is a failure to provide such information, responsible investors must risk-adjust their anticipated nonfinancial returns due to the increased uncertainty.

• **Green Fraud**
Although related to greenwashing, green fraud entails deliberate misrepresentation for unfair financial advantage. One of the largest green fraud cases currently involves Volkswagen AG cheating on U.S. air pollution tests for their “clean” diesel cars. Not only is the company looking at up to $18 billion in potential fines, several of its executives could face criminal charges. The potential consumer lawsuits could involve billions more in punitive damages. Although not labeled “green,” in May 2015 Volkswagen issued its largest U.S. dollar-denominated bond sale to date ($3.5 billion).
Imagine if Volkswagen had issued a green bond to finance its line of “clean” diesel vehicles, similar to Toyota’s green bonds for “green” hybrid vehicles. It is unclear if the recent green fraud litigation will impact Volkswagen’s ability to repay its bond investors. It is clear, however, that environmental fraud can pose material risks to any investor.

In the area of municipal bond fraud, the U.S. Securities and Exchange Committee (SEC) is increasing its enforcement against municipalities. A factor driving this enforcement is the intentional deceit referenced by SEC Rule 10b-5. Because fines are typically passed on to the taxpayer, the SEC is looking to take criminal action against municipal authorities in addition to bond underwriters and attorneys. Paul F. Bohn, The SEC Crackdown on Municipal Bond Fraud and the Increased Risk for Municipal Officials, FAUSONE BOHN, LLP (Jan. 2015), http://www.fb-firm.com/Firm-Articles/The-SEC-Crackdown-on-Municipal-Bond-Fraud-and-The-Increased-Risk-for-Municipal-Officials.pdf. The lesson for municipal officials is to provide investors with accurate and up-to-date financial and, in the case of green bonds, nonfinancial information.

- **Nondisclosure Risks**
  It can be argued that the GBPs have become the accepted standard of care for issuing a listed green bond. Lawyers should play an important role in developing offering documents that appropriately present the elements of the GBPs. These include disclosing:

  - specific details about the use of proceeds
  - how potential green projects or assets will be selected (verifiable criteria and process)
  - how the funds will be “ring fenced” to ensure verifiable use (accounting procedures and controls).
  - what realized environmental benefits will be reported annually.

If one follows the GBPs or obtains Climate Bond certification, these elements will be addressed. Care is required, however, to make clear that no additional financial benefits are being promised as part of the green bond. If other tradable commodities are involved, such as carbon credits, it must be made clear in the legal documents who owns these fungible environmental attributes.

- **Regulatory Risks**
  Although independence and completeness concerns can lead to regulatory risks, it is the lack of evidence supporting green claims (i.e., greenwashing) that has led to past regulatory actions involving consumer products. Section 5 of the Federal Trade Commission Act provides the commission with legislative authority to regulate deceptive acts and practices related to commercial activities. This includes misrepresentation either directly or indirectly by implication that an environmental benefit will be delivered.

  If a green bond issuer or underwriter provides misleading or insufficient information such that a reasonable investor would consider it material to his or her investment decision, this could open the door to potential litigation. Because the market is so new, it is difficult to judge whether there has been an extreme departure from a reasonable standard of care. However, it is possible to explicitly define the value of anticipated environmental benefits as well as the damage or penalty related to environmental nonperformance or fraud. Bond lawyers should be prepared to address these concerns through the possible use of “green default” or “environmental nonperformance” provisions in the bond purchase agreement and/or related documents.

- **Upside Risk**
  Investors tend to focus exclusively on downside risk or the uncertainty of negative impacts on their returns. For green bond
market participants, upside risk could be considered the unexpected additional financial and nonfinancial benefits. The underwriter may benefit from unexpected revenues from developing expertise and new relationships in a fast-growing specialty bond market.

How to De-Risk Green Bond Investments

The following are some simple and practical actions lawyers should keep in mind when dealing with green bonds:

- **Address the Green Bond Principles**
  To the extent possible, any labeled green bond should address all four pillars of the GBPs. If there are related climate benefits, certification to the Climate Bonds Standard should seriously be considered.

- **Use Clear and Consistent Definitions**
  Some offering documents describe in detail the labeled green bond but then go on to state that the terms “green bond” and “green project” are explicitly not defined. This could cause significant problems with investors and as well as regulators.

- **Do Not Refer to Second-Party Reviews (or “Opinions”) as Independent**
  Although using this terminology is popular in Europe, it can lead to significant problems with U.S. security regulators. If second-party reviews were truly independent they would be called “third party!”

- **Highlight Truly Independent Third-Party Assurance**
  Third-party attestation or verification is the highest level of assurance offered to bond buyers. It is a mandatory requirement for Climate Bonds certification and should be highlighted in any legal document. It could also offer the bond issuers, underwriters, and lawyers some protection against claims of negligence by demonstrating due care.

- **Be Aware of Evolving Standard Practices**
  It is important to be aware of the latest expectations for issuing and implementing a green bond. Seeking out articles such as this one is a good start.

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POST-PARIS TRANSPARENCY UNDER THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Jennifer Huang

Introduction

Parties to the United Nations Framework Convention on Climate Change (UNFCCC, or Convention) reached a landmark agreement on December 12, 2015, in Paris, charting a fundamentally new course in the global climate effort. A central issue in the negotiations was strengthening transparency requirements to better hold countries accountable for their commitments. Moving beyond the strict differentiation between developed and developing countries that characterized earlier efforts under the Convention, the Paris Agreement establishes an enhanced transparency framework with “built-in flexibility” to accommodate varying national capacities. For the first time, all parties must report regularly on their emissions and implementation efforts, and undergo international review. These transparency mechanisms will provide information necessary to track parties’ progress in implementing their nationally determined contributions to the new treaty, and will help strengthen parties’ capacities to measure and understand their own efforts. By building mutual trust, they also can help strengthen the overall climate effort.

The Paris Agreement promises support to help developing countries meet the new requirements and allows them flexibility in the scope, frequency, and detail of their reporting, and in the extent of review of their communications. Deciding the nature of that flexibility will be a primary focus of continuing negotiations on the detailed rules for implementing the agreement.

Existing UNFCCC Transparency Framework


Under International Assessment and Review (IAR), developed country parties enhance the reporting in their NCs through the submission of biennial reports (BRs), which outline their progress in achieving emission reductions and the provision of financial, technological, and capacity-building support to developing country parties. Developed countries undergo a technical review of their national reports, in which technical experts review the annual GHG inventories, examine the technical information on emissions and removals, and verify the methodologies used to provide those measurements. The technical review is followed by a “multilateral assessment,” which is essentially a Q&A between the party being assessed and other parties on the basis of all submitted national reports. To date, all developed countries have gone through one full round of IAR.

Under International Consultation and Analysis (ICA), developing country parties enhance the information in their NCs through the submission of biennial update reports (BURs), which include a national inventory report and information on their mitigation actions, needs, and support received. Unlike developed countries, developing countries are not required
to report the progress made in implementing and achieving emission reductions. The BUR then undergoes a technical analysis by a team of technical experts under a less rigorous standard of review than for IAR, resulting in a summary report that includes the capacity-building needs to facilitate reporting in subsequent BURs. The technical analysis is followed by a “facilitative sharing of views,” which is another peer review forum where parties are free to ask questions of a party on its BUR.

Although the current ICA process for developing countries is only halfway through its first round, both the UNFCCC secretariat and parties have learned some important lessons. There has been significant improvement of the technical basis for reporting, such as greater consistency in the use of reporting methodologies and an increase in the requests for technical review of NCs. There is more coherency and coordination at the institutional level, domestically and internationally, although room for improvement remains. Finally, for developed and developing countries alike, simply going through the process and engaging with the secretariat improved the quality of reporting and increased familiarity with the process.

**Negotiating the Paris Agreement—Moving Beyond Bifurcation**

The Paris Agreement, adopted at the Conference of the Parties (COP) 21, calls for an enhanced transparency framework requiring all countries to work toward the same standards of transparency and accountability. UNFCCC, Conference of the Parties, Twenty-first Session, Paris, France, Nov. 30–Dec. 13, 2015, Decision 1/CP.21: Adoption of the Paris Agreement, U.N. Doc. FCCC/ CP/2015/10/Add.1 (Jan. 29, 2016). The new framework will build on parties’ experiences with the existing system but without its strict bifurcation between developed and developing countries. All countries will be required to report on their GHG emissions and implementation efforts at least every two years and undergo both expert review or technical analysis of the information in their reports, and peer review, in which parties can engage reviewed parties on their reports. Id. ¶¶ 90–91; Annex, art. 13(3), (4), (11).

To achieve this outcome, negotiators had to overcome a number of concerns by developing countries. Some were worried that the in-country expert reviews currently required of developed countries would impinge on their sovereignty if imposed. Many already lack the funding, expertise, and data to comply with existing requirements; fulfilling enhanced requirements would require further capacity building. Finally, most voiced some fear of the unknown. With only 16 developing countries having submitted biennial reports by December 2015, few even had experience with ICA.

The agreement assuages some of these worries by increasing the flexibility and capacity building measures under the Convention. To enable developing countries to comply with the new requirements, the transparency framework “shall provide flexibility in the implementation of the provisions of this Article to those developing country Parties that need it in the light of their capacities.” Id. at Annex, art. 13(2). Moreover, it establishes an enhanced framework for capacity building to support developing countries. The Paris outcome launched the Capacity Building Initiative for Transparency, to be funded through contributions by developed countries, to help developing countries create or enhance the domestic tools and institutions they need to meet these obligations. Id. ¶¶ 84–86. The Paris Committee on Capacity Building was also set up to oversee a four-year work program to boost the capacity-building activities needed to implement the Paris Agreement. Id. ¶¶ 71–73. The work program will, for instance, identify and provide recommendations on addressing capacity gaps and needs, promote the dissemination of tools and methodologies for capacity building, and explore how developing countries can take ownership of building and maintaining capacity over time. Id. ¶ 74(b),(c),(f).

The transparency processes will feed into a global stocktake, which will assess collective progress toward meeting the Paris Agreement’s long-term
goals. Id. at art. 14. They will also link to a new committee of experts to “facilitate implementation” and “promote compliance.” Id. at art. 15(1). In contrast to the Kyoto Protocol, which included an enforcement-based compliance system, this committee will be facilitative in nature and operate in a “non-adversarial and non-punitive” manner. Id. at art. 15(2).

Post-Paris Implementation

Further work is needed over the next few years to establish the nuts and bolts of the new transparency regime. Parties must overcome some key challenges. The agreement promises to accord flexibility to developing countries, but the exact nature of that flexibility and how it will be operationalized is an important consideration as parties begin to negotiate the implementing rules. Parties will need to determine how flexibility can be built into the modalities, procedures, and guidelines for transparency of action and whether existing communication channels can be streamlined to avoid overburdening developing countries.

Flexibility can be embedded in the transparency process in many ways. For instance, some countries might initially submit their reports less frequently. Parties currently report on their GHG inventories via guidelines that offer several approaches, or “tiers.” Each tier represents a level of methodological complexity in categorizing emissions and activity data. Tier 1 is the most basic method while tiers 2 and 3 are each more demanding in terms of complexity, certainty, and data requirements. Thus, another option would be for some developing countries to start at the lowest, least stringent, reporting tier, and comply with higher tiers as they build institutional capacity over time.

Because the transparency process links to the global stocktake and will be buttressed by an implementation and compliance mechanism, parties will need to clearly outline their relationship to one another and coordinate the complementary work on these elements. The Global Environment Facility, which serves as a financial mechanism for the UNFCCC, will also need to make the financial arrangements necessary for the operationalization of the Capacity Building Initiative for Transparency. Id. ¶ 86. This is a crucial step for developing countries to make the switch to the new transparency framework, and continue to do so over time.

The new working group for the Paris Agreement will begin to develop the modalities, procedures, and guidelines for transparency of action and support as well as for the implementation and compliance mechanism. Id. ¶¶ 91, 103. It will report each year to the COP before concluding its work in 2018, at which time there will also be a facilitative dialogue to assess collective efforts. Id. ¶¶ 20, 96. The recommendations on transparency of action and support will be forwarded to the first Conference of the Meeting of the Parties to the Paris Agreement (CMA 1), which will take place after the Paris Agreement has entered into force. Id. ¶¶ 91, 99.

Conclusion

The Paris Agreement rests heavily on transparency as a means of holding countries accountable. Over the next few years, parties will undertake the technical work necessary to build on lessons learned and transition to a new transparency system. Creating a flexible system that increases parties’ capacities over time is paramount in this endeavor and will send a positive political signal to developing countries. Because countries will work toward the same standards over time, learning by doing ought to be a guiding principle, enabling countries to build on existing experience, develop trust, and identify gaps and incentivizing them to see the value of actively participating and learning from the transparency process. The establishment of a transparency framework that applies to all while providing flexibility for developing countries with less capacity is one of the greatest achievements of the Paris outcome.

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Introduction

Reducing Emissions from Deforestation and Forest Degradation (REDD) is an initiative adopted by the United Nations Framework Convention on Climate Change (UNFCCC) aimed at addressing rising carbon dioxide (CO2) levels. Through REDD, developing countries are financially incentivized and rewarded for land-based reductions in CO2 emissions achieved as a result of national and local efforts to reduce common drivers of deforestation such as illegal logging or slash-and-burn agricultural techniques. Since its adoption in 2008, the valuable role of forest conservation and sustainable management has been added to REDD, indicated by a + attached to the end of the acronym (hereinafter REDD+). About the UN-REDD Programme, UN-REDD Programme, available at http://www.un-redd.org/aboutun-reddprogramme/tabid/102613/default.aspx (last accessed Apr. 11, 2016).

Human rights bodies and treaties require states to refrain from activities that threaten traditional indigenous peoples’ practices. Procedural and substantive human rights violations pose serious consequences for indigenous peoples and other communities inhabiting forests, who are dependent upon them for their livelihood and survival. Human rights concerns frequently associated with REDD+ practices relate to the continued access to resources and the enjoyment of economic, social, and cultural rights, as well as the right to food. See United Nations, Written Statement Submitted by Human Rights Advocates Inc., a Non-governmental Organization in Special Consultative Status, A/ HRC/31/NGO/185 (Feb. 24, 2016), available at https://documents-dds-ny.un.org/doc/UNDOC/GEN/G16/036/04/PDF/G1603604.pdf?OpenElement. The United Nations Declaration on the Rights of Indigenous Peoples protects indigenous peoples against forcible removal from their land without their “free, prior and informed consent.” In implementing REDD+, states must comply with all international obligations, including responsibilities to protect human rights. REDD+ and Human Rights: Addressing Synergies Between International Regimes, ECOLOGY & SOC’Y 18(3): 5, Savaresti, A, 2013.

The numerous benefits, as well as the significant social and environmental risks, associated with REDD+ implementation are well known. From the promotion of biodiversity to clarifications in land tenure, REDD+ initiatives have immense potential to solve a multitude of social and environmental issues that have historically plagued developing countries. However, effective implementation can be easily undermined by a state’s failure to address REDD+ shortcomings, such as those linked to the displacement of indigenous communities. REDD+ safeguards adopted at the UNFCC’s 16th Conference of the Parties (COP) in Cancun aim to prevent those shortcomings. Biodiversity and Livelihoods REDD-plus Benefits, Secretariat of the Convention on Biological Diversity and Deutsche Gesellschaft für Internationale Zusammenarbeit (giz) GmbH 2011.

“Safeguards are procedures and approaches that can help to ensure that REDD+ activities ‘do no harm’ to people or the environment.” Leo Peskett & Kimberely Todd, Putting REDD+ Safeguards and Safeguard Information Systems into Practice, UN-REDD Programme Policy Brief Issue #03. But identifying safeguards is not enough. A key question is how to assure that states will implement the safeguards and take human rights impacts into account. Biodiversity and Livelihoods REDD-plus Benefits, supra.

Enter COP 21: the Paris Agreement is widely described as one of the greatest international efforts to fight climate change, on paper. Individual states’ ability and willingness to effectively implement agreed-to pledges to reduce emissions will act as the true measure of the agreement’s strength. REDD+ offers one option to help fulfill such pledges. Indeed, the inclusion of forests and REDD+ in article 5 of the Paris Agreement has elevated forest management to a new level of international support, though it has not shielded it from the same pitfalls susceptible to other climate change endeavors. After COP21: What Needs to Happen for the Paris Agreement to Take Effect?, World Resources Institute, available at http://www.
The Forces at Play

REDD+ has generated much interest and large sums of money. At stake is nearly $5 billion worth of pledges from 21 countries through bilateral agreements, raised between 2006 and 2014. Developed countries and the private sector have also directed a separate $3.2 billion through numerous multilateral funds. Marigold Norman & Smita Nakhooda, The State of REDD+ Finance (CGD Working Paper 378, Center for Global Development, Washington, D.C., 2014), http://www.cgdev.org/publication/state-redd-finance-working-paper-378 (last accessed Apr. 11, 2016). Combined, this massive level of financing creates incentives to ensure REDD+ projects come to fruition and are fully implemented, with little regard for social safeguards. On the one hand, it is paramount that REDD+ activities do not provide perverse incentives to carry out human rights violations. On the other, REDD+ technical experts from governments and the private sector that design and guide project implementation have little incentive to report safeguard violations. There is a natural disincentive to report violations that would inevitably slow implementation or, in the extreme event, halt progress outright.

The Proposal

Following COP13, the UNFCC established the REDD+ Web Platform Information Hub as a means of publishing and increasing transparency of information on the outcomes of results-based payments for REDD+ activities. It has been a valuable mechanism to enable organizations and stakeholders to share their experiences and outcomes with REDD+. UNFCCC REDD+ Web Platform, available at http://redd.unfccc.int (last accessed Apr 11, 2016).

Subsequently, negotiators at COP17 in Durban agreed to establish country-specific safeguard information systems (SIS) to ensure transparency, consistency, effectiveness, and comprehensiveness in implementing REDD+ safeguards. By developing safeguards and safeguard information systems, countries will be able to provide summaries of information on implementing REDD+ safeguards through formal reporting channels, such as their national communications or voluntarily submitting information through the UNFCCC website. Peskett & Todd, supra.

Addressing and respecting the safeguards agreed to at Cancun is a principal goal in achieving effective REDD+ implementation. Doing so means complementing the entities charged with ensuring REDD+ readiness with a separate “social impact group” meant to ensure safeguard compliance. This approach would act as a check on government policymakers, investors, and technical experts by collecting, summarizing, and reporting negative impacts from REDD+ projects. As a separate and distinct arm of the UNFCCC REDD+ initiative, the body overseeing safeguards could utilize the Web Platform to submit and disseminate its research, thereby promoting transparency. Reliable and up-to-date information on potential safeguard violations would enable funding entities to fill the vacuum left in the absence of established international methods to remedy REDD+ safeguard violations, or national laws protecting against them. With the knowledge of potential human rights violations and the power to influence those responsible for effective implementation, developed states obligated to comply with human rights and holding billions in funding could prevent safeguard violations.

Conclusion

The promotion of human rights must underlie all efforts to combat climate change, particularly when the potential victims involve the least politically involved, most marginalized communities in the world. The indigenous stewards of the forests play an integral part in the preservation of forests; respecting their rights and culture is saving the planet.

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TECHNOLOGICAL INNOVATION,
SUSTAINABLE DEVELOPMENT, AND POST-
PARIS VOLUNTARY COOPERATION—A
CLOSER LOOK AT JAPAN’S JOINT
CREDITING MECHANISM
Fatima Maria Ahmad

Introduction

After the Paris Agreement, a major challenge will be achieving emissions reductions while promoting sustainable development and allowing nations flexibility to meet targets. As Japanese Prime Minister Shinzo Abe stated at COP21, “The key to acting against climate change without sacrificing economic growth is the development of innovative technologies.” GOVERNMENT OF JAPAN, RECENT DEVELOPMENT OF THE JOINT CREDITING MECHANISM 8 (Feb. 2016), available at http://www.mmechanisms.org/document/20160203_JCM_goj_e_rev.pdf (last visited May 15, 2016). Furthermore, two new provisions in Article 6 of the Paris Agreement highlight that international voluntary cooperation will be a core part of the solution to meet these challenges. In particular, bilateral voluntary cooperation that leverages a nation’s technological expertise and financial resources may be uniquely advantageous because such approaches may also provide strategic geopolitical benefits. An early look at the Japanese experience with the Joint Crediting Mechanism (JCM) demonstrates how these considerations may play out in the years ahead.

The Impact of Fukushima


committed to the overall goals of climate change mitigation. Le Roux, supra.

More recently, in 2015, Japan pledged to reduce emissions by 26 percent from 2013 levels by 2030. This is approximately 1.042 billion tons of CO2 and is a 25.4 percent reduction from 2005 levels. See GOVERNMENT OF JAPAN, SUBMISSION OF JAPAN’S INTENDED NATIONALLY DETERMINED CONTRIBUTION (INDC) (July 17, 2015), available at http://www4.unfccc.int/submissions/INDC/Published%20Documents/Japan/1/20150717_Japan%27s%20INDC.pdf (last visited May 15, 2016). Groups within Japan have criticized the INDC as being too weak. See Stian Reklev, Japan Pledges 26 Percent GHG Reduction by 2030, CARBON PULSE, July 17, 2015, available at http://carbon-pulse.com/6575/ (last visited May 15, 2016). The apparent lack of an interim 2025 target may also contribute to the weakness of the 2030 target by locking in lower levels of ambition. Climate Action Tracker Partners, Japan, July 22, 2015, available at http://climateactiontracker.org/countries/japan (last visited May 15, 2016).

The 2030 target is well supported by Japan’s new 15-year energy plan issued in 2015, which anticipates increasing its supply of renewable energy to between 22 and 24 percent of its total electricity supply, with 9.2 percent from hydropower, 7 percent from solar energy, 4.6 percent from biomass, 1.7 percent from wind energy, and 1.1 percent from geothermal energy. Chisaki Watanabe et al., Japan Sees Clean Energy Edging Out Nuclear Power in 2030, BLOOMBERG, Apr. 28, 2015, available at http://www.bloomberg.com/news/articles/2015-04-28/japan-expects-renewable-energy-to-edge-out-nuclear-power-by-2030 (last visited May 15, 2016). Notably, Prime Minister Abe supports redevelopment of nuclear power plants due to climate change concerns as well as economic concerns. See Hay, supra. Under the 15-year energy plan, nuclear will provide 20–22 percent of electricity. Watanabe et al., supra. Currently, only the Kyushu Electric Power Company Sendai nuclear power plant is online. NRA Sees “No Safety Problem” with Nuclear Plants, YOMIURI SHIMBUN, Apr. 18, 2016, available at http://the-japan-news.com/news/article/0002885516 (last visited May 15, 2016). The 15-year energy plan anticipates that 56 percent of Japan’s electricity supply will come from fossil fuels, with 27 percent from gas, 26 percent from coal, and 3 percent from oil. Watanabe et al., supra.

The Fukushima disaster made clear that it is reasonable to anticipate that nations will experience unforeseen energy policy changes with attendant consequences for the development of international environmental law. Measures that allow for flexibility will ease the adjustment period after unexpected triggers for policy changes.

**Kyoto Protocol Clean Development Mechanism**

The Kyoto Protocol allows Annex B parties to achieve emission reduction targets through investments in developing nations through the Clean Development Mechanism (CDM), the first international investment and credit transfer mechanism for carbon. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, U.N. Doc FCCC/CP/1997/7/Add.1, 37 I.L.M. 22 (1998). Under Article 12, Annex B nations may implement emission reduction projects in developing nations to generate certified emission reduction (CER) credits for each ton of carbon reduced or avoided. Examples of CDM projects include rural electrification projects using renewable energy and the installation of energy-efficient boilers. The CDM Executive Board developed a registration and credit issuance process. These saleable CERs may be applied toward an Annex B nation’s emission reduction targets.

For CDM to achieve its promise, emissions reductions need to be real, measurable, and verifiable, as well as additional, i.e., above and beyond what would have been achieved otherwise. Credits may be awarded for projects that cause
a net emissions increase in the host country as long as the emissions are at a lower level than would have otherwise occurred. See Stian Reklev, Baby Steps for Japan’s JCM as It Seeks to Break New Ground, CARBON PULSE, Mar. 28, 2016, available at http://carbon-pulse.com/17597/ (last visited May 15, 2016).

Under the CDM, regional imbalance and project approval delays continue to present challenges. Most CDM projects to date have been located in China, India, Brazil, and Mexico. For small and poor countries, single projects may be too small to be viable. A programmatic approach was developed to address these problems; a group of similar projects may be approved and administered jointly, reducing transaction costs and potentially benefiting under-represented nations in Africa. Despite implementation challenges, however, the CDM is generally viewed as a success. Since the CDM became operational in 2006, over 1650 projects were registered. UN Framework Convention on Climate Change (UNFCCC), Clean Development Mechanism, available at http:// unfccc.int/kyoto_protocol/mechanisms/clean_ development_mechanism/items/2718.php (last visited May 15, 2016). During the Kyoto Protocol first commitment period, CDM projects generated credits for over 2.9 billion tons of CO2. Id.

**Japanese Joint Crediting Mechanism**

Japan demonstrated its support of CDM through the purchase of several hundred million CERs by Japanese firms during the Kyoto Protocol first commitment period. See Reklev, supra. At the same time, aspects of CDM bureaucracy frustrated Japan. Id. After Japan pulled out of the Kyoto Protocol, Japan created a new mechanism based on its interpretation of UNFCCC authority. Specifically, at the 18th Conference of the Parties, the UNFCCC adopted Decision 1, which “acknowledges that Parties, individually or jointly, may develop and implement various approaches, including opportunities for using markets and non-markets, to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries; . . .” UNFCCC 18th Conference of the Parties, Nov. 26–Dec. 8, 2012, Report of the Conference of the Parties Addendum 1, Decision 1, ¶ 41. U.N. FCCC/CP/2012/8/Add.1 (Feb. 28, 2013) (emphasis added), available at http://unfccc.int/resource/docs/2012/cop18/ eng/08a01.pdf (last visited May 15, 2016).


Under its interpretation of this language, Japan launched the JCM in 2013 to achieve a number of purposes. First, the JCM leverages Japan’s technological expertise to facilitate diffusion of low carbon technologies and contributes to the sustainable development of developing countries. Second, it quantifies Japan’s contribution of GHG emission reductions to achieve Japan’s target. Third, the JCM supports greater participation and increased ambition among developing nations. GOVERNMENT OF JAPAN, supra, at 7.

On the first point, Japan is well known for its energy innovation expertise, particularly in high-efficiency coal technologies. After the 1970s-era oil crises, Japan established the New Energy and Industrial Technology Development Organization (NEDO) as a semi-governmental organization to research new energy technologies. NEDO researches photovoltaic solar, wind, and geothermal power, biomass and waste energy, thermal utilization, fuel cells, and energy conservation technologies. NEDO verifies technical results and conducts international demonstration projects to disseminate the research. Government of Japan, New Energy and Industrial Technology Development Organization, available
During the first Kyoto Protocol commitment period, NEDO assisted with Japan’s effort to achieve its emission reduction target using the CDM. For the post-2012 period, NEDO assists with JCM feasibility and measurement, reporting, and verification studies. As discussed below, Japan’s 16 partner countries are primarily located in Southeast Asia and many of them are Association of Southeast Asian Nations (ASEAN) partners. The 16 partner countries are Mongolia (agreement entered into on Jan. 8, 2013); Bangladesh (Mar. 19, 2013); Ethiopia (May 27, 2013); Kenya (June 12, 2013); the Maldives (June 29, 2013); Vietnam (July 2, 2013); Lao PDR (Aug. 7, 2013); Indonesia (Aug. 26, 2013); Costa Rica (Dec. 9, 2013); Palau (Jan. 13, 2014); Cambodia (Apr. 11, 2014); Mexico (July 25, 2014); Saudi Arabia (May 13, 2015); Chile (May 26, 2015); Myanmar (Sept. 16, 2015); and Thailand (Nov. 19, 2015). Recently, Japan and the Philippines drafted a memorandum reflecting their intent to enter into the 17th JCM. See GOVERNMENT OF JAPAN, supra, at 2. These partner nations in many cases lack institutional capacity so Japan’s ability to provide sophisticated technical assistance provides real value.

JCM projects use Japanese technological expertise to deploy various approaches to reducing greenhouse gas emissions, such as the installation of energy-efficient transmission lines in Mongolia; the installation of energy-efficient systems in the national hospitals of Vietnam; the installation of energy-efficient refrigeration at commercial food processing centers in Indonesia; the installation of solar photovoltaic systems in the Maldives and Palau; and power generation by waste heat recovery in the cement industry in Indonesia. Government of Japan, Joint Crediting Mechanism, available at http://gec.jp/jcm/about/index.html (last visited May 15, 2016).

For each JCM, a joint committee is set up consisting of representatives from Japan and the partner nation to develop guidelines and administer project registration and credit issuance. While there is one CDM Executive Board, there are 16 JCM joint committees, allowing for a tailored approach for each partner nation. An example of the tailored approach is that the JCM with Indonesia includes a sustainable development-monitoring scheme. See Reklev, supra. In May 2016, credits were issued for the first projects under the JCM with Indonesia. Stian Reklev, Japan, Indonesia Issue First Carbon Offset Credits Under JCM, CARBON PULSE, May 13, 2016, available at http://carbon-pulse.com/19918/ (last visited May 15, 2016).

Each joint committee ensures against double counting of emission reductions. For example, a project should not be registered under both the CDM and the JCM. Additionally, third-party review of project proposals and emission reduction verification ensures accuracy. Notably, JCM requires that projects lead to a net reduction in global emissions in order to receive credits. Id. Credits from JCM projects are shared between Japan and the partner nation. Japanese credits may only be transferred domestically among Japanese businesses, unlike CDM CERs, which are more broadly saleable.

Looking forward, Japan publicly committed to use the JCM to cause a reduction of 50–100 million tons of carbon by 2030. GOVERNMENT OF JAPAN, supra. To date, 10 JCM projects have been approved. The emission reductions anticipated from these projects are 2000 tons of CO2. See Reklev, supra. Approximately 60 additional projects are in the JCM pipeline. Id. The emission reductions anticipated from these projects may be 1 million tons of CO2, which is a small proportion of Japan’s total emissions, which exceed 1.2 billion tons of CO2 per year.

There are two reasons for this. First, there is a lack of demand in Japan for the credits from JCM projects. Id. This may be because Japan’s INDC is too weak. Regarding Japanese domestic policies, in March 2016, Japan released a draft plan to meet its INDC and reduce emissions by 80 percent by
2050; the plan relies heavily on technological development and voluntary measures by Japanese businesses. Historically, voluntary measures in Japan have been useful. For example, “[d]uring the first commitment period of the UN Kyoto Protocol, Japanese firms bought several hundred million CERs and ERUs despite only having voluntary targets.” Reklev, supra. A promising development is that last year the Federation of Electric Power Companies, the industry association representing the 10 largest electricity generators in Japan and 19 suppliers, agreed to limit their emissions by 35 percent by 2030, which is a voluntary but significant reduction and may increase demand for JCM project credits. Id. Japan’s draft plan does refer to the possible use of an emissions trading system in the future. See Reklev, supra. In Japan, “[t]here is splintered sentiment toward cap-and-trade,” with some subnational governments such as the Tokyo government implementing cap-and-trade while national momentum has stalled. Environmental Defense Fund (EDF) et al., JAPAN: EMISSIONS TRADING CASE STUDY, May 2015, available at http://www.ieta.org/resources/Resources/Case_Studies_Worlds_Carbon_Markets/japan_case_study_may2015.pdf (last visited May 15, 2016). Since 2012, Japan has had a carbon tax; the revenues are directed toward energy-efficiency, renewable energy production, and financial assistance to local governments, among other purposes. See GOVERNMENT OF JAPAN, DETAILS ON THE CARBON TAX, available at https://www.env.go.jp/en/policy/tax/env-tax/20121001a_dct.pdf (last visited May 15, 2016). See also Reklev, supra. Japan has also had energy efficiency standards in place for decades. EDF, supra. With a stronger target and stronger policy drivers, such as a higher carbon tax or cap-and-trade, the demand for credits from JCM projects may be able to assist with fulfillment of Japan’s INDC.

A second challenge for JCM is that some observers have found the JCM Joint Committees to be too conservative when registering projects for credit. This may have been to preempt criticism that an independent bilateral approach would not be sufficiently strict. See Reklev, supra. It is likely that as more projects are developed under JCM, the establishment of precedent will facilitate improved registration. Id. It is also possible that mitigation techniques deployed under JCM will expand to include critical technologies such as innovations in carbon, capture, and storage. See IETA, infra.

**Current Geopolitical Considerations Regarding JCM**

While JCM remains a small proportion of Japan’s total emission reduction efforts, JCM does help Japan achieve other objectives. As mentioned above, JCM supports the export of Japanese technologies like high-efficiency coal by creating markets for these technologies in developing countries. In fact, some critics have viewed the JCM as an export subsidy mechanism that may be in conflict with World Trade Organization rules. Taking a different perspective, a review of recent Japanese official development assistance (ODA) policy highlights important geopolitical considerations for the continued use of JCM. ODA policy is separate from JCM but an awareness of Japan’s strategic interests underlies both programs. Recently, Japan revised its ODA policy to allow aid to be used to protect Japan’s national interests. Japan’s ODA Paper Stresses ASEAN Support for Safety of Vital Sea Lane, NIKKEI ASIAN REV. (Tokyo), Mar. 11, 2016, available at http://asia.nikkei.com/Politics-Economy/International-Relations/19-s-ODA-papersistresses-ASEAN-support-for-safety-of-vital-sea-lane?page=1 (last visited May 15, 2016). Furthermore, in March 2016, Prime Minister Abe reiterated that “[s]upporting the development of developing countries helps enhance Japan’s influence and voice internationally, thereby helping to secure the country’s national interests.” Editorial, Shinzo Abe, All-inclusive Endeavors Crucial in Carrying Out ODA Strategically, YOMIURI SHIMBUN (Tokyo), Mar. 22, 2016, available at http://www.asianews.network/content/editorial-all-inclusive-endeavours-crucial-carrying-out-oda-strategically-12331 (last visited May 15, 2016). In March 2016, Japan also announced a 30
percent increase in ODA, the first increase in 17 years. The commitment is for $110 billion through 2020 targeted toward infrastructure investments such as roads, bridges, and port facilities. This increased level of ODA still constitutes roughly half of the amount of assistance provided in 1997, which was a peak year for ODA. Id. It is clear that Prime Minister Abe is taking a careful look at ODA as a tool to enhance Japan’s strategic interests. Support for expanded use of JCM can be seen as part of this new perspective, especially when the JCM partners are viewed on a map.

For example, two-thirds of fossil fuel imports to Japan transit through the South China Sea underscoring the strategic importance of security in this area. China has moved forward with land reclamation work in the South China Sea to support its territorial claims and maritime interests. Michael Forsythe & Jane Perlez, South China Sea Buildup Brings China Closer to Realizing Control, N.Y. TIMES, Mar. 8, 2016, available at http://nyti.ms/1X9QPZt (last visited May 15, 2016). Aware of this threat, Japan emphasized the strategic importance of its ASEAN partners in its recent ODA policy, stating “ASEAN countries are an extremely important region from both political and economic perspectives as they lie along Japan’s sea lane and have strong economic ties.” See Pollmann, supra. Japan specifically emphasized the importance of maintaining security in the South China Sea lanes. NIKKEI ASIAN REV., supra. See also Ayako Mie & Jesse Johnson, Amid South China Sea Spat, Japan Foreign Aid White Paper Stresses Importance of Sea Lanes, JAPAN TIMES (Tokyo), Mar. 11, 2016 (“experts say Japan’s pledge to help secure sea lanes—especially those in the South China Sea—reflects its intention to shore up regional alliances as a bulwark against an increasingly bellicose China.”), available at http://www.japantimes.co.jp/news/2016/03/11/national/politics-diplomacy/amid-south-china-sea-spat-japan-foreign-aid-white-paper-stresses-importance-sea-lanes/#.VwBBKvJGN01 (last visited May 15, 2016). Consistent with this partnership priority, Japan has entered into JCMs with six of the ten ASEAN members. Specifically, Japan has a JCM with Cambodia, Indonesia, Laos, Myanmar, Thailand, and Vietnam. Japan has entered into a memorandum of understanding to enter into a JCM with a seventh ASEAN member, the Philippines. GOVERNMENT OF JAPAN, supra, at 7. These strategic political considerations concerning the South China Sea likely facilitate continued Japanese support for the JCM.

Similarly, scholars have noted that Japan is prioritizing foreign aid through loans, grants, and technical assistance to the Middle East out of concern for the region’s stability given that Japan remains dependent on oil imports. Mina Pollmann, Japan: How Energy Security Shapes Foreign Policy, THE DIPLOMAT (Tokyo), Mar. 16, 2016, available at http://thediplomat.com/2016/03/japan-how-energy-security-shapes-foreign-policy/ (last visited May 15, 2016). Appropriately, Japan has entered into a JCM with Saudi Arabia. GOVERNMENT OF JAPAN, supra, at 7.

In parallel to its approach with ODA, Japan is able to use JCM to successfully leverage its technological expertise to strengthen alliances with strategic partners while also working toward its emission reduction target in a post-Fukushima era.

**Voluntary Cooperation Under the Paris Agreement**


First, Paragraph 2 of Article 6 provides that the Parties may engage “on a voluntary basis
in cooperative approaches that involve the use of internationally transferred mitigation outcomes [ITMOs] towards nationally determined contributions, promote sustainable development and ensure environmental integrity and transparency, including in governance. . . .” Id. This provision will be critical as at least 65 nations indicated that they will use carbon trading to achieve their emission reduction pledges and an additional 24 will consider the use of carbon trading for this purpose in the future. Anthony Mansell, What’s Ahead for Carbon Markets After COP21, BIORES, v.10, no.1, Feb. 19, 2016, available at http://www.ictsd.org/bridges-news/biores/news/what’s-ahead-for-carbon-markets-after-cop21 (last visited May 15, 2016).

Second, Paragraph 4 of Article 6 establishes a successor to the Kyoto Protocol CDM with the following goals:

(a) To promote the mitigation of greenhouse gas emissions while fostering sustainable development;
(b) To incentivize and facilitate participation in the mitigation of greenhouse gas emissions by public and private entities authorized by a Party;
(c) To contribute to the reduction of emission levels in the host Party, which will benefit from mitigation activities resulting in emission reductions that can also be used by another Party to fulfill its nationally determined contribution; and
(d) To deliver an overall mitigation in global emissions.

UNFCCC, supra. The new mechanism must avoid double counting and will direct a share of its proceeds toward adaptation efforts for vulnerable Parties. Id.

The UNFCCC Subsidiary Body for Scientific and Technical Advice (SBSTA) held a meeting May 16–26, 2016, to commence discussion toward developing the parameters of these new market mechanisms. See UNFCCC, SBSTA 44, available at http://unfccc.int/meetings/bonn_may_2016/session/session/9393.php (last visited May 15, 2016). Japan stated that it will assist in the development of guidelines to avoid double counting. GOVERNMENT OF JAPAN, supra, at 10. Japan also helped organize a side event highlighting recent progress regarding JCM implementation. Institute for Global Environmental Strategies et al., The Joint Crediting Mechanism: Achievements and Current Progress of Projects Implementation, available at http://www.iges.or.jp/files/climate/pdf/sb44/20160518_sb.pdf (last visited May 17, 2016). It is not clear how JCM will be treated under the new guidelines that will be developed. Certainly, the new guidelines should ensure that bilateral approaches like JCM adhere to the same environmental, accounting, and transparency standards as other approaches.

There appears to be a growing interest in bilateral approaches. Leading up to the Bonn meeting, stakeholders met to discuss opportunities to link the JCM with other approaches, including other nations’ INDCs, bilateral agreements between Japan and capped jurisdictions that use emissions trading systems, the International Civil Aviation Organization’s Market Based Measures, and/or in a carbon market “club” with other Asian nations. Jeff Swartz, International Emissions Trading Association (IETA), Challenges/Opportunities to Link the JCM, POST-PARIS CARBON MARKETS: FROM LONDON TO TOKYO, Feb. 12, 2016, available at http://www.ieta.org/resources/UNFCCC/JCM%20Workshop%20Report_IETA_March%202016.pdf (last visited May 15, 2016). Additionally, immediately preceding the Bonn meeting, the environment ministers from the G-7 nations issued a joint statement supporting the sharing of best practices and lessons learned from the Joint Crediting Mechanism. G7 Toyama Environment Ministers’ Meeting, Communiqué, para. 43, May 15–16, 2016, available at http://www.env.go.jp/press/files/jp/102871.pdf (last visited May 17, 2016); Environment Ministers to Urge Trading of Greenhouse Gas Cuts, YOMIURI SHIMBUN, May 15, 2016, available at http://the-japan-news.com/
news/article/0002947125 (last visited May 15, 2016) (G-7 members are Canada, France, Germany, Great Britain, Italy, Japan, and the United States; Japan is currently the chair). In late May, a strategic dialogue of the G7 is scheduled to discuss carbon markets and a report will be presented at COP22. IETA, supra.

Regarding CDM, its future is also unclear. At the March 2016 CDM Executive Board meeting, the board agreed to monitor the ongoing development of the Article 6 provisions and requested that the Secretariat prepare an analysis on the use of the CDM beyond the second commitment period of the Kyoto Protocol, including as a tool for other uses. UNFCCC Clean Development Mechanism Executive Board 88th Meeting, Mar. 7–11, 2016, Meeting Report, ¶¶ 9–11, available at http://cdm.unfccc.int/EB/index.html (last visited May 15, 2016).

Conclusion

While the Japanese experience with JCM is still in very early stages, it clearly demonstrates how climate change mitigation, energy policy, and security concerns converge. As the SBSTA develops the parameters of the new Article 6 market mechanisms, it is likely that bilateral voluntary cooperation on emissions reduction will continue to be important because in addition to promoting the dissemination of new technologies and sustainable development, bilateral approaches also allow for flexibility and enable nations to meet current geopolitical and strategic objectives. A key consideration will be ensuring that bilateral approaches adhere to the same environmental, accounting, and transparency standards as other approaches. Addressing that concern will go a long way toward validating bilateral approaches developed after the Paris Agreement.

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What has been described a “landmark decision” of the Netherlands Hague District Court in Urgenda Foundation v. State of the Netherlands, Rechtbank Den Haag [Hague District Court], 24 June 2015, C/09/456689, HA ZA 13-1396 (Neth.), available at http://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:RBDHA:2015:7196, lends support to the argument that the United States has significant treaty obligations to reduce emissions that must be reflected in its application of national laws. If the Hague District Court’s (hereinafter “Dutch Court”) reasoning is adopted by courts in the United States, the decision could have implications not only with respect to rulemaking proceedings under the Clean Air Act, such as the Clean Power Plan, but other federal actions affecting greenhouse gas emissions. The decision may even have greater implications for individual states that have constitutional or other public trust obligations to protect the environment.

The Dutch Court Decision

In Urgenda, the Urgenda Foundation brought a tort action under the Dutch Civil Code on behalf of itself and 886 individuals, claiming among other things that “the State is in breach of its duty of care for taking insufficient measures to prevent dangerous climate change.” Plaintiffs sought to compel the Netherlands to adopt policies calling for a 25 to 40 percent reduction in greenhouse gas emissions by 2020, an amount exceeding the nation’s roughly 17 percent reduction commitment. The Dutch Court ordered the state to reduce its emissions by 2020 by at least 25 percent, based on the court’s conclusion that that was the least amount necessary, consistent with the obligations of developed nations under the United Nations Framework Convention on Climate Change (UNFCCC) to achieve the reductions needed to limit global temperatures to an increase of no more than 2°C. That holding was based primarily upon the UNFCCC, non-binding determinations of the parties to the UNFCCC, and the scientific conclusions of the Intergovernmental Panel on Climate Change (IPCC). Assuming a court in the United States would find the Dutch decision persuasive, these authorities would be equally applicable to the United States, which has ratified the UNFCCC and participated in the decisions under that treaty upon which the Dutch Court relied.

The Dutch Court started with the ultimate objective of the UNFCCC, viz., the “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system . . . within a time-frame sufficient to” prevent the most significant adverse impacts of climate change. UNFCCC art. 2, May 9, 1992. The UNFCCC establishes the principle that “the developed country Parties should take the lead in combating climate change and the adverse effects thereof.” UNFCCC art. 3, ¶ 1. The Dutch Court also relied upon the obligation, in keeping with this principle, that each Annex 1 Party, including the Netherlands and the United States, “adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs.” UNFCCC art. 3, ¶ 2(a). The Dutch Court also cited the treaty’s requirement that the Annex 1 Parties implement policies and measures with the “aim of returning individually or jointly to their 1990 levels these anthropogenic emissions of carbon dioxide and other greenhouse gases.” UNFCCC art. 3, ¶ 2(b). The Dutch Court derived the specific 25 percent reduction from a series of a number of non-binding determinations made by the Parties to the UNFCCC at the annual conferences of the parties (COPs), and a detailed analysis of internationally accepted scientific findings of what would be necessary to stabilize emissions to prevent
dangerous anthropogenic climate change according to reports of the IPCC.

Although the Dutch Court found that obligations under the UNFCCC were obligations owed to other states rather than private parties such as the plaintiffs, it held specifically that the state had an obligation to apply the UNFCCC’s requirement in the construction of its own laws to achieve the 25 percent reduction, as follows:

This does not affect the [sic] fact that a state can be supposed to want to meet its international-law obligations. From this it follows that an international-law standard—a statutory provision or an unwritten legal standard—may not be explained or applied in a manner which would mean that the state in question has violated an international-law obligation, unless no other interpretation or application is possible. This is a generally acknowledged rule in the legal system. This means that when applying and interpreting national-law open standards and concepts, including social proprietary, reasonableness and propriety, the general interest or certain legal principles, the court takes account of such international-law obligations. This way, these obligations have a “reflex effect” in national law.

Urgenda, supra, ¶ 4.43. The court also noted throughout its opinion that further reductions were required in the future, noting the Dutch government’s commitment to reduce emissions by 40 percent by 2030.

The suit was brought as a tort action and a significant portion of the discussion in Urgenda dealt with the question of whether the plaintiffs were authorized to bring suit against the Dutch state. Ultimately, the court concluded that the plaintiffs’ standing to sue the state upon the Dutch state’s obligation to exercise “due care” was based on Dutch constitutional law, the law of the EU, and international law.

Standing Under International Law

Although the latter laws would not be applicable to the United States, there are sound arguments that the Dutch Court’s holding that the Dutch state had an obligation to interpret its own laws to achieve a minimum 25 percent reduction by 2025 would be applicable to the United States’ application of its laws. Like the Netherlands, the United States has ratified and is an Annex I Party to the UNFCCC. The provisions of the UNFCCC upon which the Dutch Court relied are thus equally applicable to the United States. Among those determinations were the commitments made at the Copenhagen COP. The United States was also party to the series of non-binding resolutions at the COPs upon which the Dutch Court relied. In Copenhagen, the United States stated that it “intends to achieve an economy-wide target of reducing its greenhouse gas emissions by 26–28 percent below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28 [percent]” and to increase reductions beyond that pace so as to achieve an 80 percent reduction by 2050, which is consistent with the Dutch Court’s finding that an 80 to 95 percent reduction will be required by that time. Remarks by President Obama at the First Session of COP21, November 30, 2015, available at https://www.whitehouse.gov/the-press-office/2015/11/30/remarks-president-obama-first-session-cop21 (last viewed May 10, 2016).

Given the executive branch’s constitutional authority to make treaties with the advice and consent of the Senate and to execute all laws, this commitment pursuant to a treaty that has been made with the advice and consent of the Senate should be deemed binding. U.S. Const. art. 2, § 2, cl. 2, § 3. In Zivotofsky v. Kerry, 135 S. Ct. 135 S. Ct. 2076 (2015), the Supreme Court held that an individual born in Jerusalem was not entitled to list Israel as its nation of birth despite a statute designating Jerusalem as part of Israel because the executive branch had not recognized Jerusalem as part of Israel and recognition of foreign nations was an Article I power delegated solely to the executive branch. The fact that the commitments made by
the United States in furtherance of the UNFCCC have not been incorporated into a separate treaty or protocol is irrelevant. The commitments were made by the executive branch in furtherance of the UNFCCC, a ratified treaty, and according to the procedures designated by the treaty for decision making. Those commitments, thus, fall squarely within the executive branch’s exclusive power under Article I of the Constitution.

The Dutch Court’s holding that the Netherlands had an obligation to interpret its laws consistent with its obligations under international treaty law is also consistent with the long-standing law of the United States holding that federal statutes should be construed to be consistent with treaties and international law. In Murray v. Schooner Charming Betsy, 6 U.S. 64, 118 (1804), Chief Justice Marshall stated:

> It has also been observed that an act of Congress ought never to be construed to violate the law of nations if any other possible construction remains, and consequently can never be construed to violate neutral rights, or to affect neutral commerce, further than is warranted by the law of nations as understood in this country.

These principles are believed to be correct, and they ought to be kept in view in construing the act now under consideration.


This conclusion would apply with particular strength to the laws upon which the United States has expressly relied to implement its obligations under the UNFCCC. This is particularly the case with respect to the application and interpretation of the Clean Air Act, amended in 1990, at the same time the UNFCCC was negotiated and has been identified by the administration as authority for implementing the nation’s international obligations. The international obligations could both provide additional authority for the Environmental Protection Agency (EPA) to take action consistent with the international obligations and provide guidance for how to exercise that authority.

There are a variety of contexts in which this reasoning might be applied. For example, opponents of the Clean Power Plan have taken the position that two conflicting amendments to section 111(d) in the 1990 amendments to the Clean Air Act should be interpreted to deprive EPA of authority to limit emissions under section 111(d) of the Clean Air Act. The reasoning in Urgenda lends support to counter-arguments holding that any ambiguity should be resolved in favor of finding support for EPA’s interpretation that section 111(d) authorizes regulation of greenhouse gas emissions from utility units despite their regulation under section 112 of the Clean Air Act. The 1990 amendments were developed contemporaneously with the negotiations of the UNFCCC and the Bush administration was involved significantly in drafting the 1990 amendments. Because the same argument applies to virtually all major stationary source categories, it would be unusual for Congress to remove authority to regulate pollutants that were the subject of an international treaty then being negotiated in conforming amendments and without any comment in the legislative history. There is a significant argument that the UNFCCC and the Clean Air Act should be read in “in pari materia” because (1) the UNFCCC and the Clean Air Act share the same purpose of preventing and limiting air pollution that will endanger health or the environment, and (2) the drafters were aware of the requirements under the two laws in that the Bush administration was intimately involved in
both drafting the UNFCCC between 1988 and its 1992 release for ratification and the comprehensive amendments of the Clean Air Act that were adopted in 1990.

The decision might also support arguments that the Clean Power Plan should be applied to limit the total mass of emissions rather than merely emissions rates, since there is an obligation to reduce amounts of emissions. Urgenda might also both provide support for pending petitions to regulate greenhouse gases as priority pollutants under sections 108–110 of the Clean Air Act, or under section 115 of the act, and suggest a mechanism that might be applied to determine the United States’ reduction obligations under those provisions. The decision might also be applied to provide support to other mechanisms being employed by the United States to implement the UNFCCC, such as regulations relating to actions on federal lands.

These arguments have been strengthened considerably by the Paris Agreement because it defines the obligations of the UNFCCC, which has been fully ratified by the United States. First, the Paris Agreement defines the UNFCCC’s objective, stated in Article 2, of preventing “dangerous anthropogenic interference with the climate system” by clarifying that the parties will “enhanc[e] the implementation of the Convention” by “[h]olding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.” Conference of the Parties on its Twenty-first Session, Paris, France, Nov. 30–Dec. 12, 2015, Decisions Adopted by the Conference of the Parties, Dec. 1/CP.17, Adoption of the Paris Agreement, U.N. Doc. FCCC/CP/2015 (Dec. 12, 2015) [hereinafter “Paris Agreement”], available at https://unfccc.int/resource/docs/2015/cop21/eng/09r01.pdf. The Paris Agreement further defines that goal by specifying the aim of reaching peak emissions as soon as possible and thereafter rapidly to decrease emissions to reach carbon neutrality by the second half of this century. Id. at art. 4, ¶ 1. Second, the Paris Agreement defines the requirements of UNFCCC, Article 4, ¶ 1 by requiring all Parties to develop “nationally determined contributions” and to update those contributions at least every five years. Paris Agreement art. 4, ¶¶ 2, 9. The Paris Agreement defines the obligation of the United States and other Developed Country Parties in Article 4, ¶ 2(a) of the UNFCCC, by requiring those parties to take the lead “by undertaking economy-wide absolute emission reduction targets.” Paris Agreement art. 4, ¶ 4.

Notably, the United States had previously submitted its “nationally determined contribution” to achieve a 2020 target of reducing net emissions in the range of 17 percent below the 2005 level and to achieve net greenhouse gas emission reductions of 26–28 percent below the 2005 level by 2025, making its best efforts to achieve a 28 percent reduction. In the communication of its nationally determined contribution, the United States indicated that it intended to achieve these reductions through a variety of mechanisms. The United States’ nationally determined contribution references its reliance upon regulations under the Clean Air Act, including “regulations to cut carbon pollution from new and existing power plants.” United States Intended Nationally Determined Contribution, available at http://www4.unfccc.int/submissions/INDC/Published%20Documents/United%20States%20of%20America/1/U.S.%20Cover%20Note%20INDC%20and%20Accompanying%20Information.pdf. The Paris Agreement provides further support to the Clean Power Plan under Urgenda’s reasoning. Urgenda may support more aggressive emissions reduction goals in future actions under the Clean Air Act.

**Standing Under Constitutional Law**

The Urgenda decision also could have equally significant implications with respect to states that have constitutional obligations similar to those created by the Dutch Constitution or similar public trust obligations. The Dutch Court’s holding, that the duty of care created by the Dutch Constitution
created a right to bring a tort action to compel government action, may create an argument for similar actions against U.S. states to take action to reduce greenhouse gas emissions. For example, Pennsylvania has an Environmental Rights Amendment to its constitution, which, as recently interpreted by a plurality of the Pennsylvania Supreme Court, appears to impose greater trustee obligations on the Commonwealth than the Dutch constitutional provision. Pa. Const. art. 1, § 27; Robinson Township v. Commonwealth of Pennsylvania, 83 A.3d 901, 2013 Pa. LEXIS 3068, 43 ENVTL. L. REP. 20276 (Pa. 2013). Other states have similar public trust obligations that might support similar tort actions against the state. Urgenda would also support arguments regarding the manner in which states should implement the Clean Power Plan. Because treaty law is also applicable to the states under the Supremacy Clause of the Constitution and the Clean Air Act authorizes states to establish standards more stringent that federal requirements, arguments based on Urgenda might be used to convince states to adopt mass-based standards that require significant emissions reductions greater than the minimum required by the Clean Power Plan.

Some might argue that, under the reasoning of the Dutch court, the United States’ obligations under the UNFCCC would require that the United States achieve a 25 percent reduction in emissions from 1990 levels by 2020. However, because the Dutch Court arrived at its requirement for a 25 percent reduction based on a complex analysis of both the science in IPCC documents and a variety of decisions by the parties to the UNFCCC, it could be argued that that part of the holding was a mixed question of fact and law. It is unclear what effects the decisions reflected in the Paris Agreement will have on this issue. To the extent that the Paris Agreement ratifies nationally determined contributions, it could weaken the argument for mandating more aggressive emissions reduction targets. On the other hand, the Paris Agreement’s definition of the temperature increases that would result in “dangerous anthropogenic interference with the climate system” within the meaning of the UNFCCC may strengthen arguments for more aggressive targets.

A recent magistrate’s decision in Juliana v. United States, Order and Findings & Recommendation, Dkt. No. 6:15-cv-1517-TC (D. Or. Apr. 8, 2016) cited Urgenda with approval. The magistrate recommended denying motions by the United States and intervenors to dismiss a complaint by a group of “younger individuals (aged 8–19)” and Dr. James Hansen as guardian for future generations alleging harm from climate destabilization and ocean acidification and seeking, among other relief, an order requiring “to prepare and implement an enforceable national remedial plan to phase out fossil fuel emissions and draw down excess atmospheric CO2 so as to stabilize the climate system and protect the vital resources on which Plaintiffs now and in the future will depend.” Id. The court noted that the plaintiffs had not filed a rulemaking petition under the Clean Air Act. Instead, the plaintiffs founded their claims on substantive due process and the public trust doctrine. The magistrate recommended denying motions to dismiss based on standing, the political question, and failure to state a claim. In finding that the plaintiffs’ claims were redressable for the purpose of the standing analysis, the magistrate cited Urgenda. This decision has not been adopted by the district judge and the suit may not ultimately survive at the summary judgment stage. Nevertheless, it suggests that international law may play an increasingly important part of law in the United States.

Differences Between the Netherlands and United States’ Legal Frameworks

There are a number of differences between the law of the Netherlands and that of the United States to which those opposing extension of the decision to jurisdictions in the United States could point. The Netherlands is part of the European Union, which has made specific legal commitments to achieve the requirements of the UNFCCC. The Netherlands ratified the Kyoto Protocol. The government of the Netherlands has admitted the need for reductions
at a level commensurate with that ordered by the Dutch Court but refused to commit to those reductions. Article 21 of the Dutch Constitution “imposes a duty of care on the State relating to the livability of the country and the protection and improvement of the living environment.” Id. ¶ 4.36. The Netherlands also has a statutory and basic constitutional structure different from the United States. Although all of the foregoing issues upon which the decision might be distinguished are discussed in the opinion, these all related to the question of whether the plaintiffs could bring a tort action against the government of the Netherlands to compel action on climate change. In fact, the court specifically rejected arguments raised by the Netherlands regarding its discretion to implement its laws and limitations on judicial power under separation-of-powers principles common to the law of the United States and Netherlands.

The central substantive holding relating to the obligation to reduce emissions and the interpretation of Netherlands statutory law arose from obligations under the UNFCCC that are common to the United States and the Netherlands. Although the Netherlands has ratified the Kyoto Protocol, while the United States has not, that protocol was not implicated in the court’s reasoning, which relied upon subsequent decisions of the parties to the UNFCCC regarding the emissions reductions necessary to prevent dangerous anthropogenic interference with the climate system. The decision, thus, rested upon the requirements of the UNFCCC, which the United States has ratified, and a series of decisions implementing that treaty in which the executive branch joined.

Much of the discussion of the laws upon which the decision might otherwise be distinguished relates to the plaintiffs’ standing and the question of whether the Netherlands owed an enforceable duty to the plaintiffs so as to give them standing. It was in this context that the court’s discussion of a duty of due care, which might not be applicable to the United States, arose. However, this issue is likely irrelevant to questions relating to the interpretation and application of the Clean Air Act, since the act provides a statutory right to citizens both to take appeals and to bring suit against the United States to enforce the law’s mandatory obligations. 42 U.S.C. §§ 7604, 7607.

The extent, if any, that Urgenda might be limited to its particular circumstances or extended to others is not at all clear. Urgenda was an action seeking to have a state implement policies to reduce greenhouse gas emissions and did not involve any claim against private parties. Its holdings regarding the duty of due care were derived from laws creating duties for state actors and not private parties. Despite the limited nature of the holding, if the decision is not reversed on appeal, it may be cited by litigants to compel actions to undertake measures to adapt or mitigate the effects of climate change or actions against different classes of defendants.

Urgenda has been appealed and may be overturned. It is also the decision of a lower foreign court and will not be binding on courts in the United States. Some members of the Supreme Court have been hostile to reliance on references to foreign decisions or reliance on international law. However, the reluctance to look to foreign or international law in the interpretation of law in the United States usually relates to attempts to apply the law of foreign jurisdictions to the United States in areas not governed by a common treaty. In contrast, this decision involves a foreign court’s construction of a treaty that has been ratified by the United States and is equally the law of the United States under the Supremacy Clause. Although the decision is therefore not binding, it arguably should be afforded greater persuasive weight than otherwise might be afforded a foreign decision.

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POST COP21 INDIA–U.S. PARTNERSHIP ON CLEAN ENERGY: A CASE STUDY
Snehashish Sadhu

India has several successful accomplishments in clean energy finance, smart grids, green buildings, and waste heat utilization in energy transmission. Currently, India supports about 17.5 percent of the world population. India’s Intended Nationally Determined Contribution: Working Towards Climate Justice at 5, available at http://www4.unfccc.int/submissions/INDC/Published%20Documents/India/1/INDIA%20INDC%20TO%20UNFCCC.pdf. About 30 percent of India’s population lives in poverty. Id. In the 2015 agreement under the United Nations Framework Convention on Climate Change (UNFCCC), India has recognized that poverty is a big polluter. Id. at 19. The major concern is balancing the economic development efforts of India’s 1.2 billion people with reducing carbon emissions. Id. at 34. This article will explore urban air pollution in Delhi and policy options focusing on generating funding for programs supporting a variety of energy efficiency projects.

India’s Commitment to Address Climate Change

India’s commitment to environmental protection stems from the constitution itself. Article 48A of the Constitution of India states, “[t]he State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.” INDIA CONST. art. 48A. India has committed one major section of its intended nationally determined contribution (INDC) to increasing use of cleaner energy. See generally India’s Intended Nationally Determined Contribution: Working Towards Climate Justice, supra, at 9. India runs “one of the largest renewable capacity expansion programs in the world.” Id. Solar power installed capacity has increased from 3.7 MW in 2005 to about 4060 MW in 2015. Id. India has the target of enhancing the solar capacity to 100 GW by 2022. Id. The government of India is promoting solarization of all the 55,000 petrol pumps across the country. Id. Also, India has focused on promoting safe nuclear power and improving energy efficiency in thermal power plants and has launched the National Smart Grid Mission to bring efficiency in the power supply network. Id. at 10. However, to bring about a significant change, India must adopt policies that not only affect industrial and manufacturing sectors but also address individual habits directly. Let us explore the situation by considering transportation in Delhi.

Climate Change and Transportation

To reduce environmental impacts, India intends to focus on low carbon infrastructure and public transport systems like dedicated freight corridors. Id. at 14. Mass rapid transit system and metro rails are operational and are being improved. Id. at 15. Faster adoption and manufacturing of hybrid and electric vehicles in India (FAME India) provide incentives to manufacturing of eco-friendly vehicles. Id. at 16. Improving the fuel standards and national policy on biofuels will keep 50 million tons of CO2 out of the atmosphere. Id. The combination of such policies paves India’s way to a greener future. While India’s focus on manufacturing new eco-friendly vehicles is important, India may be able to achieve the INDC commitments by focusing directly on the pollution generated from existing road vehicles.

Urbanization has been a dominant trend accompanying development. It is expected that about 40 percent of the population in 2030 would be urban compared to 30 percent currently. Id. at 6. As of March 1, 2011, the population of Delhi was 16.78 million. Office of the Registrar General & Census Commissioner, Govt. of India Ministry of Home Affairs, Primary Census Abstract (2011), http://www.censusindia.gov.in/2011census/population_enumeration.html (last viewed May 15, 2016). In 2014, the World Health Organization conducted a survey and Delhi was found to have the highest concentration of particulate matter smaller than 2.5 micrometers. SUGAM POKHAREL, This Indian City Has the World’s Worst Air, CNN (Apr. 14, 2015), available at http://
money.cnn.com/2015/04/14/news/economy/india-delhi-air-pollution/ (last viewed May 8, 2016). The average fine particulate matter (PM2.5) was 153 micrograms per cubic meter (μg/m³), compared to 14 μg/m³ in New York and 56 μg/m³ in Beijing. Id. United Nations Environment Programme (UNEP) estimates that urban air pollution is linked to up to 1 million premature deaths and 1 million pre-native deaths each year. Urban Air Pollution, UNEP, http://www.unep.org/urban_environment/Issues/urban_air.asp. The same report estimates that 90 percent of the air pollution in major cities can be attributed to vehicular emissions. Id. Such statistics compel us to consider the issue further.


**Economic Analysis**

Focus on macro issues affecting the environment is important. Investments and technical knowledge relating to private sector efficiencies such as green building projects and solar installation projects in industries can also be achieved through a system of direct regulations. The private sector is relatively manageable as corporate structures eventually can be driven in the direction of economic efficiency. Organized business entities are better equipped to alter their pricing policies according to the regulations imposed because the markets directly define their business behavior. Furthermore, trade licenses and operating regulations force such businesses to behave in a certain manner. A more difficult task is to address the non-organized cohort of the population such as private vehicle owners and non-organized business vehicles such as auto rickshaws and taxicabs. These vehicles contribute to the environmental macros to a great extent. Resources are better utilized in establishing think tanks that would implement innovative approaches to solving some of the problems.

The social cost for such pollution unquestionably is higher than the private costs. One way of tackling such a problem is by taking an approach utilized in law and economics theories. The following discussion elaborates a simple model of such a system. Assume that Driver A is contributing “x” amount of a certain pollutant over the socially desirable level. He should be held liable in tort for the excess amount of “nuisance” that he is responsible for.

According to Coase, such externalities can be adjusted by a process of bargaining. RONALD H. COASE, THE PROBLEM OF SOCIAL COST (1960). However, inevitable transaction costs are incurred in such a case. One way to get past this issue is by imposing regulations. The government is in the best position to minimize the transaction costs and could function as the “cheapest cost avoider.” Ideally, Driver A should be required to pay all of the costs for this externality for which he is liable. But, in the socio-political sense this can hardly be a practical policy in India. Imposing all costs on the poorer population would incite outrage from the opposition. An alternative solution could be that part of the costs should be incurred by Driver A, and the rest from using funds from an organization discussed later in this article. Emission tests conducted mandatorily in a cycle of years would estimate the amount of pollutants a car is releasing. What is important is the use of the money collected. Driver A should be mandatorily required to pay an amount into a fund allocated for use in alternative energy. This fund may be
used to employ eco-friendly technologies, such as installing solar panels on the street lights. Such an approach should also be easier to finance from the government’s perspective as subsidies could be established for purchase of such products (solar panels) for the rest of the amount that Driver A does not pay.

Such a policy deters Driver A from driving his/her car more, as his/her costs of driving are significantly increased and also channels the amount of money into socially desirable environmentally friendly adjustments. Accordingly, this bi-directionally bridges the gap between the social and private costs. There is, however, an innate problem in such an approach. In what way is it justified to channel funds from an external source to meet the liabilities of individuals?

Consider the theory proposed by Posner, commenting on the famous Learned Hand equation to assess tort liability. William M. Landes et al., CAUSATION IN TORT LAW: AN ECONOMIC APPROACH, 12 J. LEGAL STUD. 109, 113 (1983) (quoting U.S. v. Carroll Towing Co., 159 F.2d 169, 169 (2d. Cir. 1947)). Learned Hand proposed that tort liability should be imposed when the burden (or the costs) incurred in preventing damages from an accident is strictly less than the expected (or discounted) loss from the accident (B<PL; where B: Burden/Expenditure, P: Probability, L: Injury/Loss, PL: Expected Loss). Id. Posner speaks about the situation where B>PL and proposes that tort liability should not be imposed when the costs incurred in prevention are greater than the expectation of injury. Id. Even if liability is imposed, there is no additional incentive for safety. Id. Imposing a liability will not force the actor to reduce his levels of the activity. Id. Does it necessarily mean that tort liability should not be imposed at all in our case?

Granted, an argument may be advanced that the laissez faire (or the invisible hand) market will have an automatic balancing mechanism of supply and demand (costs and benefits). However, after the advent of the Great Depression the weakness of such a model was exposed. John Maynard Keynes came up with a theory that states an external factor (government expenditure) is required for market recovery. JOHN M. KEYNES, THE GENERAL THEORY OF EMPLOYMENT, INTEREST AND MONEY (1936). A similar argument can be proposed here that requires an external agent to address the situation discussed above.

**Possibility of Implementation**

The National Mission for Enhanced Energy Efficiency (NMEE) aims at creating effective regulatory policies to strengthen the market for energy efficiency in India. A few of such policies include the Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) and the Venture Capital Fund for Energy Efficiency (VCFEE), which provide partial coverage of risk involved in extending loans for energy-efficient projects. India’s report to UNFCCC, supra, at 11. Such existing policies can be easily tweaked to suit the model discussed above. Id. These funds may be utilized by the government as a credit source to pay for the amount which Driver A does not pay.

On January 25, 2015, the White House announced a plan to incorporate bilateral air quality cooperation, which will implement EPA’s AIRNow-International program. USA, India to Cooperate on Climate, Clean Energy, Smart Cities, ENS (Jan. 26, 2015), http://ens-newswire.com/2015/01/26/usa-india-to-cooperate-on-climate-clean-energy-smart-cities (last viewed
May 8, 2016). Such a fund can be utilized in ways proposed above to address the issues of air quality and carbon emissions.

**Conclusion**

A renewed approach to ensuring a greener future is important. For densely populated countries balancing environmental and socioeconomic needs such as India, policies directed to the masses are of major importance. India should continue to focus on regulations and policies that will encourage the industrial and manufacturing sectors to use energy-efficient processes and produce products that are more efficient and less polluting. It is equally important to influence individual behavior. One potential approach, discussed in this article, is to adopt policies that would assess financial liability for pollution caused by private vehicle owners and auto rickshaws and taxicabs. This approach would generate funding for eco-friendly and energy-efficient technologies and influence individual behavior to use more energy-efficient cars.

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