Volume XII, Issue 3 Spring 2012

Sustainable Development Law & Policy

Exploring How Today's Development Affects Future Generations Around the Globe

In This Issue: Rio+20

http://www.wcl.american.edu/org/sustainabledevelopment

American University Washington College of Law

Editors' Note

We are very excited to present this Spring Issue of Sustainable Development Law & Policy (SDLP) focusing on the Rio+20 United Nations Conference on Sustainable Development taking place in Rio de Janeiro, Brazil this June 13-22, 2012.[1] For many veterans of the field, it may seem hard to believe that twenty years has passed since the 1992 Earth Summit.[2] As burgeoning environmental lawyers and policy-makers at SDLP, however, it is similarly strange for us to think of a world without that momentous conference. After all, much of the progress and frameworks of modern environmental law rest on the shoulders of the Earth Summit.

The 1992 conference saw the Convention on Biological Diversity open for signature, marking an international structure to protect the planet's ecosystems, species, and genetic resources.[3] It also saw the inception of the U.N. Framework Convention on Climate Change and the consequential first steps toward the modern international climate regime.[4] Moreover, the Rio Declaration and its principles memorialized international acknowledgement of what have now become core tenants of environmental law, including the precautionary principle, the environmental impact assessment, the importance of public participation, and international cooperation to achieve national capacity building.[5]

Most notable for SDLP, however, was the Earth Summit's international acknowledgement and integration of the principle of sustainable development.[6] As the fundamental focus of this publication, sustainable development guides our every article. In this issue, we seek to examine both the Earth Summit's past successes and current opportunities for further progress at the upcoming Rio +20 conference. The articles herein look forward and back to identify ways in which this upcoming conference can serve its twin aims of fostering a green economy in the context of sustainable development and poverty eradication and building the institutional framework for sustainable development.[7]

As nations prepare to re-convene this coming June 2012 at the Rio +20 conference, debate, discussion, and collaboration among the international environmental community will only increase. This issue of SDLP contributes to this dialogue with the sincere hope that it will aid in the further progress of sustainable development law and policy at the anticipated Rio +20 conference.

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1 *Rio+20 — United Nations Conference on Sustainable Development*, United Nations, http://www.uncsd2012.org.

2 *United Nations Conference on Environment and Development (1992)*, United Nations, http://www.un.org/geninfo/bp/enviro.html.

3 Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 818, http://www.cbd.int/doc/legal/cbd-en.pdf.

4 *See* United Nations Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107, http://unfccc.int/resource/docs/convkp/conveng.pdf. *See also* Graciela Chichilnisky & Kristen A. Sheeran, Saving Kyoto 56-57 (Kate Parker ed., 2009); David Hunter et al., International Environmental Law and Policy 667-74 (Robert C. Clark et al. eds., 2007).

5 U.N. Conference on Environment and Development, June 13–14, 1992, Rio Declaration on Environment and Development, U.N. Doc. A/CONF.151/26, http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=78&ArticleID=1163.

6 *Id.*

7 *Objective & Themes*, *Rio+20 — United Nations Conference on Sustainable Development*, United Nations, http://www.uncsd2012.org/objectiveandthemes.html.

About SDLP

Sustainable Development Law & Policy (ISSN 1552-3721) is a student-run initiative at American University Washington College of Law published three times each academic year, with occasional special editions and two annual foreign language translations. The journal publishes articles and essays that focus on reconciling the tensions between environmental sustainability, economic development, and human welfare. It embraces an interdisciplinary focus to provide a broad view of current legal, political, and social developments. Our mission is to serve as a valuable resource for practitioners, policy makers, and concerned citizens promoting sustainable development throughout the world.

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Printed by HBP, Inc., Hagerstown, MD.

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Introduction to Rio + 20: A Reflection on Progress Since the First Earth Summit and the Opportunities that Lie Ahead

*by Roger Martella and Kim Smaczniak**

Convening In the Shadow of the Earth Summit

The 1992 UN Conference on Environment and Development or, as it is better known, the "Rio Earth Summit," has become emblematic of the opportunities that can be realized when the international community comes together to discuss seriously the goal of advancing sustainable development. The Earth Summit was the largest gathering yet to address the future of the planet, with representatives of 172 countries, including 108 heads of state and government, coming together over 12 days of negotiations.[1] Some 2,400 NGOs were present at a parallel NGO Forum, and thousands of reporters covered the event on site.[2] Following the long years of tepid international relations during the Cold War, the Rio Earth Summit marked a change in global affairs, offering the potential for the world to come together in support of a shared vision for the environment of the planet.

The then-Secretariat General of the Rio Earth Summit, Maurice Strong, reflecting on the unparalleled legacy of the Summit even 20 years later, concluded that the negotiators "got agreement beyond what anybody thought was possible."[3] The Summit delivered a series of legal instruments that, even though unbinding, articulated a common set of principles and a path forward relevant to this day: Agenda 21, the Rio Declaration on Environment and Development, the Statement of Forest Principles, the United Nations Framework Convention on Climate Change and the United Nations Convention on Biological Diversity. Agenda 21 proclaimed a particularly noble purpose, one intended to inspire generations. As "humanity stands at a defining moment of history," Agenda 21 sought to address "the pressing problems of today and … to [prepare] the world for the challenges of the *next century*."[4]

Now, twenty years later, participants and observers to the second United Nations Conference on Sustainable Development in Rio de Janeiro or "Rio+20" have acknowledged the large shoes to fill. The enormity of the first event, and the lofty set of aspirations it established for the world community, lends itself to comparison and stock-taking. How far have we come in addressing those pressing problems identified originally in Rio, and are we prepared for the challenges of the remainder of the century? While the specifics may vary across perspectives and metrics, the larger answer is resoundingly: Not enough. Yet, in today's economic and political climate, the expectations that Rio +20 will change the status quo and accelerate the pace of progress unfortunately appear moderate at best.[5]

Rio +20, prefaced by a series of meetings and preparatory committee negotiations, commenced June 20 with a three-day Conference in Rio. For this Rio + 20 summit, two themes were the focus: "a *green economy* in the context of sustainable development and poverty eradication" and "institutional *framework for sustainable development.*" At the core of framing the discussions in advance of the Summit, the so-called "Zero Draft" was developed as a 19-page discussion document to guide negotiators toward a final outcome document. The Zero Draft, which largely tracks the two core themes, reaffirms principles established in the Earth Summit and calls for renewed commitment to a number of legal instruments adopted since then. First, in support of a green economy, the Zero Draft calls for creation of a platform to share knowledge related to green economic policy and implementation strategies, and greater support to developing nations, including increased funding, support for green technology transfer, and capacity building. Second, the Zero Draft presents alternative proposals to address the framework for global governance, including a placeholder allowing negotiatiors to either affirm support for UN Environmental Programme (UNEP) or to establish a new UN agency based on UNEP option to replace the Commission on Sustainable Development with a Sustainable Development Council. Furthermore, beyond the Zero Draft, another key submission identified as a potential outcome of Rio +20 is a commitment to the non-regression principle.[6] This principle rejects backsliding from previous international commitments and requires governments to commit to ratchet up, not down, environmental protection. [7]

Taking Stock: Where do the outcomes of the Earth Summit stand today?

Addressing expectations for the recent Rio event and its own legacy entails looking back at its predecessor. If the Earth Summit is considered a success, can those successes be repeated in the aftermath of Rio +20? Understanding what we have gained

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from the first Rio Earth Summit, how far we have come and still have to go, sets the stage for Rio+20.

At the outset, there can probably be little debate that the UN Framework Convention on Climate Change (UNFCCC) stands as one of the defining outcomes of the Earth Summit, with an objective to stabilize greenhouse gases at a level that would prevent dangerous interference with the climate system. Despite widespread ratification of the UNFCCC and recognition of the credibility of the recommendations, political negotiations since 1992 have failed to obtain meaningful global commitments to greenhouse gas reductions. While an increasing amount of nations, states, provinces, and municipalities cite the need for compelling and prompt action,[8] greenhouse gas emissions are higher today than ever before and are rising globally.[9] The Kyoto Protocol, which set forth the first phase of binding commitments toward emission reductions in industrialized nations who are parties to the agreement, expired in 2012. The most recent climate change talks at Durban in 2011 resulted in an agreement to adopt another binding agreement by no later than 2015 — essentially kicking the can of tough political decisionmaking down the road.

Another well known legacy of the Earth Summit, the UN Convention on Biological Diversity (CBD), has similarly obtained widespread ratification, at the same time that worldwide markers of progress toward the conservation and sustainable use of biodiversity have lagged dismally. The Millenium Ecosystem Assessment, a four year study conducted across 90 countries, concluded that 60% of the services provided by ecosystems have been degraded or are being used unsustainably and that, for a range of taxa, the majority of species are currently in decline.[10] In the same vein, the UN 2010 Global Biodiversity Outlook boded ominously that "[c]urrent trends are bringing us closer to a number of potential tipping points that would catastrophically reduce the capacity of ecosystems to provide [] essential services."[11] CBD is another outcome of the Earth Summit where the stage was effectively set but whose objectives remain largely unrealized.

Whereas the measures of progress toward certain goals set in the Earth Summit are disappointing or even alarming, Agenda 21 and the Rio Declaration are sound victories with more than symbolic importance. Since the Earth Summit, international attention to sustainable development and sound environmental governance has persisted. In turn, the language of sustainable development has gained greater currency in the two decades since the Earth Summit. Meyerstein's article, "The New Protectors of Rio: Global Finance and the Sustainable Development Agenda," speaks of a phenomenon that one could not conceive of without the successes of the Earth Summit and international commitment to the principles of sustainable development — the evolution of the "Equator Principles." Among other strong indicators, the willingness of inherently pragmatic large project financiers to take into account the borrower's ability to comply with relevant social and environmental policies is a mark of a larger cultural shift toward the integration of the concepts of sustainable development into society.[12]

But beyond the mere awareness that Agenda 21 and the Rio Declaration spurred for sustainable development worldwide, this progeny also stimulated direct funding for projects in support of sustainable development. International organizations in particular have used such instruments to guide and prioritize their funding portfolios. To showcase a single example, in 1997 the World Bank published a paper tracking its grants and loans in furtherance of Rio's objectives during the five-year period following the Earth Summit.[13] The study documented the steady increase in projects targeting the improvement of environmental management, the rise in the funding available for such projects by $8 billion, or 8% of its lending over that time period, and ways the Bank was working to mainstream sustainable development into other development programs.

Further substantiating the sustained international attention to the goals articulated at the Earth Summit, the number of multilateral environmental agreements has exploded over the years, now totaling some 500 (or more) different legally binding documents.[14] Yet, despite this encouraging trend that has enabled environmental agreements where the traditional treaty process would have stood still, the spike of international commitments, however, has not been matched by either national implementing laws or capacity for enforcement. A well-recognized "implementation gap" exists between goals recognized at the international level and the practical ability to attain those goals on the ground.[15] Even with dedicated funds and attention to overcoming the implementation gap, there can be long delays between the enactment of national legislation, its implementation, and the ultimate impact on environmental and development outcomes in the country.

This fundamental shortcoming has been well-documented in the context of Environmental Impact Assessment (EIA) legislation. The Rio Declaration incorporated as Principle 17 a requirement to undertake an EIA for national activities that are likely to have a significant adverse impact on the environment. Throughout the 1990s, there was a proliferation of national legislation implementing Principle 17. By 1998, more than 100 countries had incorporated some form of EIA legislation.[16] A number of international organizations, including the Organization for Economic Cooperation and Development (OECD), the World Bank, and UNEP, implemented measures to promote the establishment of EIA laws and provide guidance or training on EIA implementation.[17] A 2003 study diving deeper into implementation, however, found that most EIA systems in developing countries failed to meet a series of performance criteria.[18] More recent country-specific studies have found that, despite the sometimes decades since the enactment of the EIA law, the effectiveness of EIAs remains uneven and lacking in key areas, including, for example, public participation, technical expertise, and regular enforcement.[19] The gradual nature of countries' progress in the implementation of EIA laws is the same story that could be told across a wide range of international environmental commitments.

The upshot is not that the Earth Summit failed to have impact, but that the force of that impact, and subsequent efforts,

has not been sufficient to reach a change in behavior at a sufficiently global scale. The pertinent question for Rio+20 thus becomes how to recognize and account for the achievement gap to streamline implementation in the future, in addition to what role this particular conference can play in reinforcing commitment or amplifying the effectiveness of ongoing efforts to advance sustainable development.

The World at Rio + 20

Even as negotiators look back to the lessons of the Earth Summit, they must also assess the realities of the world in 2012. The world stage is set differently now than in 1992. Most prominently, recent financial and economic crises loom large in the minds of political leaders and their constituents. For many nations that classically take leadership in international environmental negotiations, the political climate pulls in the direction of scaling back international support, rather than increasing financial or other commitments of resources toward sustainable development. New players have emerged as well, further changing the nature of international negotiations. Developing economies are burgeoning with great success stories of declining poverty levels. But they also are contributing at growing rates to the world's environmental issues, in a manner that was likely unforeseeable even as recently as 1992. China, Brazil, and India have each attained prominence of their own, pressing forward with agendas and environmental interests that are distinct from that of other developing countries. Kelley's article, "China in Africa: Curing the Resource Curse with Infrastructure and Modernization," highlights two features of the changing role of these countries through its focus on China's investment activities in Africa: the increasing importance of their economic activities as drivers of environmental outcomes, and their evolving political interests as a result of an increasing interconnectedness with the global economy.

Developments in the technical and scientific world also have been rapid and dramatic. For those with access to the internet, information flows freely. For the many who remain without such access, the expansion of mobile phone networks has similarly opened the gates of communication. Samantar discusses the extensive access to mobile phones and the surprising number of applications for this technology — ranging from gathering information for rural farmers about crops to offering training for nurses — in three sub-saharan countries in his article, "Shining Sun and Blissful Wind: Access to ICT Solutions in Rural Sub-Saharan Africa Through Access to Renewable Sources." Changes in access to information are as big of a game-changer as developments in the political and economic climate, and we have only begun to witness the effects of this transformation. Our increasing capacity to communicate information goes hand-in-hand with a steadily growing ability to monitor the state of the world, including environmental impacts. Technology, such as satellites, and research, including extensive collaborative studies like the Intergovernmental Panel on Climate Change, have continued to advance our understanding of human activity across the globe and its impacts.[20]

Another reality of the 2012 world is that an extensive array of institutional machinery to address sustainable development has already been built, unlike 1992 when such organizations were still newly emergent. With the proliferation of MEAs, as well as other regional or bilateral agreements such as trade agreements containing environmental aspects, there has been a commensurate rise in the number of institutions engaged in environmental governance. MEAs are each typically supported by a different Secretariat, and trade agreements now frequently incorporate environmental cooperative mechanisms. At the same time, international organizations and national development agencies have increasingly become important actors in international environmental governance.[21]

While the global environmental infrastructure is thus more thoroughly developed than in 1992, there are perhaps unsurprisingly a host of common criticisms of global environmental governance, including concerns that (i) the system is too fragmented (for example, each MEA Secretariat focuses too narrowly on its objectives rather than synergies among sustainable development objectives); (ii) there is a lack of coordination among the different actors (it is common enough for one organization not to be aware of similar activities of others in the geographic same area); (iii) there is insufficient focus on implementation of commitments rather than negotiation of new ones; (iv) its resources are used inefficiently (with large overhead costs for each institutional entity and a tendency for certain activities to be overfunded while others are systematically neglected); (iv) there is insufficient inclusion of or authoritative guidance provided to non-environmental organizations, such as trade, development, and investment organizations; and (v) it fails to adequately engage with non-state actors, including NGOs and business.[22] Thus, while negotiators in 2012 are not starting with a clean slate in developing an infrastructure to implement their goals, what they do inherit includes a confusing and often uncoordinated mix of actors that must be accounted for.

The Opportunities for Rio +20?

As the world emerges from the June Rio + 20 summit, the fundamental question will be whether Rio +20 becomes the watershed event that its predecessor, the Earth Summit, was before. Most commentators preceding the event have been pessimistic on the point.[23] Yet, perhaps a better question, in light of the decades of evolution in environmental governance norms and institutions that must be considered, is whether an Earth Summit of the magnitude of Rio + 20 is the only avenue toward advancing sustainable development goals. The Earth Summit generated a series of universal aspirational, long-term principles and goals that remain significant to the environmental and developmental challenges of 2012. While there is certainly value in bringing world leaders together to reaffirm and focus attention on those goals again, the heaviest lifting to improve sustainable development outcomes needs to happen at the ground level of implementation. Such decisions and commitment of resources are much more likely to be made in national, bilateral, or regional contexts. Rio +20 should be evaluated, then, for how

well it brings increased attention, resources, or coordination toward the implementation of sound environmental governance measures first established in the Earth Summit but which have evolved since then.

With such a lens, there are a number of hopeful signs for productive outcomes from Rio +20 in the near and longer term. It should come as no surprise that much of the event involved negotiations over text of debatable value. As one veteran of UN development negotiations put it, "the shelf life of a typical UN declaration or report rarely lasts beyond a few days."[24] However, the time spent wrangling over the definition of a "green economy" (does it supersede the concept of sustainable development, is it a means to the end of sustainable development, it is flexible enough to accommodate for the growth needs of developing countries, and so on) should be weighed against the knowledge sharing and new initiatives related to the green economy that are emerging from Rio +20. At a basic level, the Rio +20 website already includes a section highlighting successful green economy initiatives, ranging from the global to the local, and many country submissions and preparatory sessions have showcased other such successes.[25] Such exchange is likely to continue to amplify post-Rio.

Indeed, one of the outcomes identified in the Zero Document is the establishment of a more comprehensive information sharing platform, to provide countries with a toolbox of best practices, methodologies, and policies for a green economy. As they did following the Earth Summit, other international organizations, NGOs, and national development organizations will likely continue to coalesce around objectives identified at Rio +20 and initiate their own programs. The World Bank already has indicated it views the green economy theme of Rio +20 as a platform to promote adoption of "natural capital accounting," alternative measures of the economy beside GDP that take into account the value of ecosystem services.[26] Rio + 20 is likely to inspire other such spin-off efforts.

The possibility remains that a series of "Sustainable Development Goals," mirrored off the success of the Millennium Development Goals ("MDGs"), may yet emerge from negotiations. The MDGs set forth a series of eight goals and defined metrics and timeframes by which to achieve certain targets in furtherance of each goal. (E.g., Target 1a: Reduce by half the proportion of people living on less than a dollar a day) As such, the MDGs represent an unprecedented consensus about measures to reduce poverty.[27] While there is dispute as to whether the benefits of hard, measurable targets are sufficient to overcome their limitations, there is at least anecdotal evidence that the identification and widespread adoption of a few, targeted metrics have improved the concentration and coordination of development funds.[28] This, in turn, appears to have led to documented improvements in those metrics for at least some of the MDGs. Whether negotiators are up to the challenging task of distilling the broad concept of sustainable development into a small number of concrete and time delimited goals is uncertain.[29]

Rio + 20 is also promising in its continued engagement of stakeholders beyond member nations. The conference has an established web presence, including a Facebook page, Twitter account, and You Tube footage, and has successfully sparked engagement of youth at cities across the globe. Organizers have provided space for civil society to contribute to discussions at numerous side-events at Rio. The inclusion of business as partners in advancing sustainable development is also a prominent feature of the conference. A number of preparatory sessions and side-events focus on the perspective of industry, and there is a particular day set aside for discussion between policymakers and business leaders. The broader the base of participants, the greater the possibility that such stakeholders will generate greater attention, and accordingly resources, to implementation at the local and national levels.

Less heartening is the lack of progress to date toward any particular option for the reform of the institutional framework for sustainable development. While it remains feasible that some simple "fix" is adopted, such as expanding UNEP's mandate or funding or some combination of both, it seems unlikely that more ambitious and comprehensive reforms necessary to address the weaknesses in global environmental governance will emerge in the wake of Rio + 20.[30] This is an area where leaders should remain resolute even after the conference to open the path forward to greater reform and avoid a lost opportunity, particularly as changes in such institutions are unlikely to occur outside a multilateral forum. So long as environmental governance remains fragmented and insufficiently coordinated, the efforts of the diverse actors in this space are likely to remain diffuse.

Whatever the ultimate legacy of Rio +20, however, the first Rio has already taught us that advancing sustainable development is an extended, multi-pronged effort. No single international conference can provide sufficient momentum alone to reach the large scale changes in human behavior that are necessary to improve global developmental and environmental outcomes. Rio +20 will be judged, finally, not by its immediate splash, but as a part of that greater sustained effort to bring about change.

Endnotes: Introduction to Rio + 20: A Reflection on Progress Since the First Earth Summit and the Opportunities that Lie Ahead

1 U.N. Conference on Environment and Development (1992), UN.ORG, http://www.un.org/geninfo/bp/enviro.html .

2 *'Earth Summit' Held in Brazil; Climate, Species Pacts Signed: Targets Lacking on Aid, Controls; Other Developments*, FACTS ON FILE WORLD NEWS DIGEST, 18 June 1992, http://www.2facts.com/article/1992050592.

3 Jenny Purt, *Reflecting on Rio: looking back to 1992*, THE GUARDIAN (Mar. 6, 2012, 8.02 AM) http://www.guardian.co.uk/sustainable-business/video-rio-1992-reflections-sustainable-development.

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Moving from Principles to Rights: Rio 2012 and Access to Information, Public Participation, and Justice*

*by David Banisar, Sejal Parmar, Lalanath de Silva, and Carole Excell***

In the 1992 Rio Declaration on Environment and Development (" Rio Declaration"), the international community recognized that sustainable development depends upon good governance.[1] Principle 10 of the Rio Declaration sets out the fundamental elements for good environmental governance in three "access rights": 1) access to information, 2) public participation, and 3) access to justice.[2] This principle is based on the experience that, where governmental decision-making fails to include these essential tenets of access, the outcomes are more likely to be environmentally damaging, developmentally unsustainable, and socially unjust.[3]

Access rights facilitate more transparent, inclusive, and accountable decision-making in matters affecting the environment and development. Access to information empowers and motivates people to participate in an informed and meaningful manner. Participatory decision-making enhances the ability of governments to respond to public concerns and demands, to build consensus, and to improve acceptance of and compliance with environmental decisions because citizens feel ownership over these decisions. Access to justice facilitates the public's ability to enforce their right to participate, to be informed, and to hold regulators and polluters accountable for environmental harm.

The access rights in the Rio Declaration have been widely recognized across the world. However, much work remains to ensure that these rights are truly available to empower societies. Commitments made by governments to the principles of good governance under the Rio Declaration,[4] Agenda 21,[5] and the Johannesburg Plan of Implementation[6] need to be strengthened, monitored, and reported upon. Governments that have not already done so must establish legal rights to access to information, public participation, and justice. Finally, all governments must demonstrate their support for the protection of these rights. Once access rights are established, governments and civil society need to focus on developing the capacity to operationalize these rights and make them meaningful for the communities they are intended to support.[7]

The outcome of the United Nations Conference on Sustainable Development ("UNCSD," also known as the "Rio 2012 Summit" or "Rio 2012") must include an affirmation of these fundamental access rights and that substantial efforts must be made to establish them and make them enforceable in all countries. At a minimum, national governments must commit to the full implementation of access rights as national law, ensure intergovernmental organizations and institutions incorporate these rights into their own regulation and practices, and develop international and regional mechanisms to monitor the implementation of these practices. New international instruments are necessary to ensure that these access rights are truly available to everyone.

The Rio 2012 Process and Principle 10

The Rio 2012 Summit follows up on the 1992 Earth Summit. The stated purpose of the Rio 2012 Summit is to "secure renewed political commitment for sustainable development, assessing the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development and addressing new and emerging challenges."[8] Within that purpose, there are two specific themes: 1) a green economy in the context of sustainable development and poverty eradication, and 2) the institutional framework for sustainable development.[9]

Although visionary, these themes have been discussed in isolation of each other when they should be considered together. Furthermore, current discussions lack the specificity of what reforms are needed to achieve these objectives, who needs to be involved in decision-making, and how the objectives will be achieved. As UN Secretary General Ban Ki-moon notes, the goals represented by these themes are interdependent, as "improved institutions are crucial to favourable social outcomes of green economy policies."[10] He calls upon governments to do more to "build on progress made to promote transparency and accountability through access to information and stakeholder involvement in decision-making."[11] A fruitful approach would be to consider both themes in conjunction with the larger objective of securing political commitments for sustainable development. Finally, both agenda items need to be discussed in light of the principles of transparency, public participation, and accountability. Without these basic changes, the current economic paradigm will prevail, supported by institutions and interest groups that have benefited from restricting citizen access.

**A version of this article was originally published by ARTICLE 19 in July 2011. ARTICLE 19, the Global Campaign for Free Expression, is an international human rights organisation focused on protecting and promoting the right to freedom of expression and right to information. ARTICLE 19 is a registered UK charity (No. 32741) with headquarters in London and field offices in Kenya, Senegal, Bangladesh, Mexico, and Brazil.*

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The Green Economy

There has been an extensive debate around defining the "green economy" and its scope. Some agree that, at the national level, greening the economy will include improving fiscal policy reform, reducing environmentally harmful subsidies, employing new market-based instruments, and targeting public investments to "green" key sectors. However, there has been almost no discussion on the role of citizens and on access rights as an important facet of creating this new economic model.

We should no longer ignore the role citizens must play in determining the success or failure of a global green economy. Ensuring that policies meet their intended aims of economic and environmental sustainability, as well as social equity, requires broad support from empowered civil society actors and a well-informed and engaged public that includes voters, consumers, and shareholders. Disseminating information about what a green economy specifically means for society is essential to motivating social actors' involvement in the decision-making process. To achieve this broad participation, governments must establish infrastructure for access to this type of information and ensure public participation, with the media acting as a neutral messenger. Without a fundamental shift in the power of interest groups, greening the economy will remain a game of catch up as innovation and industry move ahead without regard to the social and environmental costs.

Reforming Institutions at the International and National Levels

Meanwhile, discussions of strengthening the institutional framework for sustainable development have focused on international environmental governance ("IEG"). The Nairobi-Helsinki Outcome Document proposes a reform agenda for institutions such as the UN Environmental Programme ("UNEP"), the UN Commission on Sustainable Development ("UNCSD"), and the Economic and Social Council.[12] A second tier of concerns under this theme addresses the fragmentation of Multilateral Environmental Agreements ("MEAs"), funding mechanisms, and Secretariats.[13]

Currently, there are limited and inadequate mechanisms for access to information held by UN bodies, especially relating to trade.[14] There has been more significant progress with the World Bank and International Financial Institutions ("IFIs").[15] However, current deliberations before the UNCSD have failed to deliver a visionary approach to the creation of a new international environmental governance system that includes mechanisms for accountability.[16] Within the IEG discussions there has been insufficient emphasis on the need to make these international institutions and governments themselves more transparent and accountable to the citizens they are intended to serve.[17]

At the same time, there has also been little effort toward reviewing and reforming national institutions. While international institutions have critical roles in formulating and coordinating policy on international environmental governance, their reform will have little impact on those national level institutions where citizens are still struggling to participate in decisions affecting their environment.

The Nairobi-Helsinki Outcome Document, for example, does not make any mention of compliance mechanisms to ensure implementation and monitoring of Multilateral Environmental Agreements and environment obligations by citizens.[18] This is a glaring omission. Without mechanisms to ensure a means of government accountability, governments may continue to fail to fulfill their obligations under international environmental law. Possible mechanisms for consideration include:

- Peer review. Since 1992 the Organization for Economic Co-operation and Development ("OECD") Group on Environmental Performance ("GEP") has developed and implemented a process to conduct reviews of the environmental performance of OECD member countries with respect to both domestic policy objectives and international commitments.[19]
- Independent evaluation and complaint mechanisms. The North American Commission for Environmental Cooperation has taken a multi-pronged approach to promoting environmental enforcement and compliance.[20] Central to the agreement is a commitment by the parties to effective enforcement of their respective environmental laws, reinforced by two formal procedures: 1) a procedure for citizen submissions asserting ineffective enforcement by a party, to which the secretariat may respond by requesting a response from the party and developing a factual record, and 2) a procedure for claims by a party that another party exhibits a persistent pattern of failure to effectively enforce its environmental law.
- Dispute resolution processes. Under the Kyoto Protocol, states are considering a procedure that would give private investors a right to appeal decisions by the Clean Development Mechanism that go against their interest, and under the World Bank Inspection Panel affected citizens can trigger inspections of alleged failures of the Bank to follow its own policies.[21] Finally, under the WTO dispute settlement process, and under several bilateral investment agreements, civil society organisations have been allowed to submit amicus curiae briefs to influence the outcome of decisions.[22]

In his background paper for Ministerial consultations at the 26th session of the Global Ministerial Environmental Forum, Executive Director of UNEP Achim Steiner noted that to deal with the accountability challenge, it would be necessary to make review a key function of the Global Ministerial Environment Forum.[23] He also emphasized the implementation of independent third-party reviews and performance monitoring, the creation of incentives for performance and early action, and the establishment of a global version of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.[24] Thus, IEG discussions need to move away from the current negotiations and refocus on areas that can engender greater transparency and accountability, acknowledging achievements and compliance

with international commitments, and also acknowledging where capacity and political will have been lacking.

Progress to Date on Principle 10

The 1992 Rio Declaration has seen mixed success on the global level in the area of access rights.[25] Unlike many other areas in the Declaration, no global legal instrument — such as a treaty or convention — on access rights in the environment has been developed. It is only recently, mostly in the context of the Rio 2012 process, that this has even been discussed.[26]

UN bodies have also been slow in addressing the issue. In 2010, after nearly twenty years, the UNEP Governing Council finally adopted guidelines ("the Bali Guidelines") on how governments should develop national laws in relation to Principle 10.[27] The guidelines are intended to assist national governments by "promoting the effective implementation of their commitments to Principle 10 of the 1992 Rio Declaration on Environment and Development within the framework of their national legislation and processes."[28] However, the guidelines are largely unknown and while there are commitments by UNEP and other bodies to provide assistance and training, the efforts appear currently to be on a very small scale.

The efforts of the UN Economic Commission for Europe ("UNECE") have been more successful. The UNECE has adopted two ground-breaking treaties based on the Declaration.[29] Of primary interest to this paper, the Declaration was the starting point for development of the first legally binding international treaty on access rights — the 1998 Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (commonly known as the "Aarhus Convention"). The Aarhus Convention places ratifying nations under a series of important obligations including collecting information held by private bodies and requiring public bodies to affirmatively make information available to the public, respond to requests, and provide strong rights of appeal.[30] It also established rules for public participation, appeals, and access to justice measures.

Additionally, the Aarhus Convention requires that signatories "promote the application of the principles of this Convention in international environmental decision-making processes and within the framework of international organisations in matters relating to the environment."[31] UN Secretary General Kofi Annan described it as "the most ambitious venture in the area of environmental democracy so far undertaken under the auspices of the United Nations."

As of November 2011, the Aarhus Convention has been ratified by forty-five countries from Western Europe to Central Asia and has been incorporated into EU law through a directive. The Compliance Committee has now heard over fifty cases, nearly all filed by the public or civil society organisations.[32] In 2003, a follow-up instrument to the Aarhus Convention, the Kiev Protocol on Pollutant Release and Transfer Registers, was adopted.[33] This Protocol holds corporations accountable for disclosing information on the toxins they release into the environment, and has been ratified by twenty-six countries.[34]

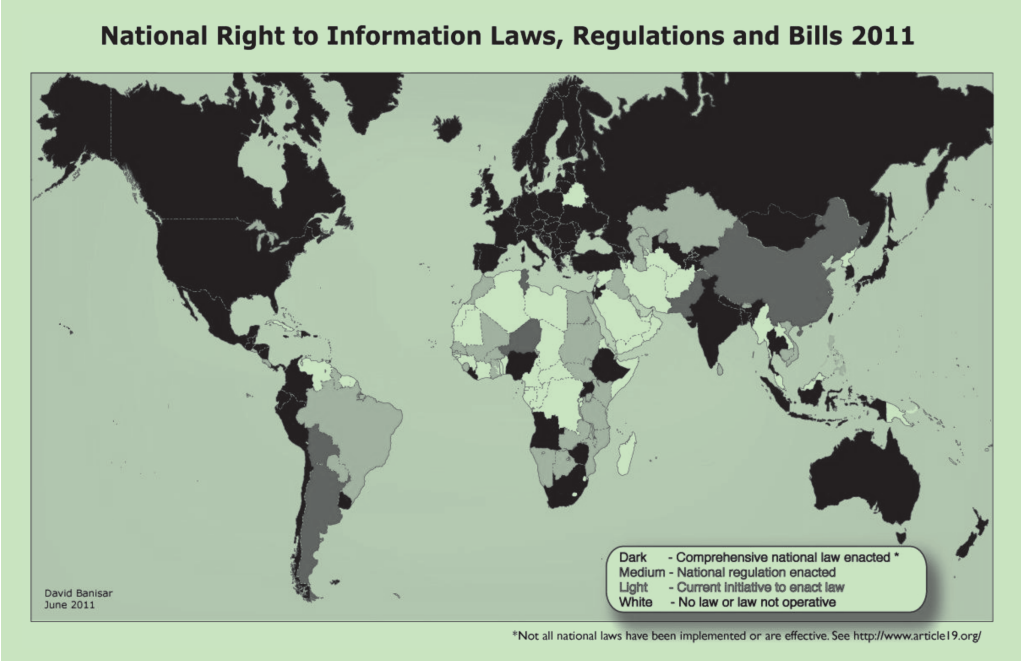
In addition to the Aarhus Convention, Principles 17 and 19 of the Rio Declaration also resulted in the creation of the 1991 UNECE Convention on Environmental Impact Assessment in a Transboundary Context ("Espoo EIA Convention").[35] This convention creates requirements for state parties to assess the environmental impact of major projects early on and to notify other countries when the project will have a transborder effect.[36] It has been signed by forty-five countries and ratified by thirty countries.[37]

Access to Information

Sustainable development relies on accurate information on a range of environmental matters, including those related to the green economy and climate change. Disclosure of information is therefore clearly in the public interest and serves to enhance the effectiveness of sustainable development programmes.

Since the 1992 Rio Earth Summit, there has been a dramatic increase in recognition of the right to access information by nations. Over ninety countries have adopted framework laws or regulations for access to information, including in the past few years China, Indonesia, Nigeria, Chile and Mongolia.[38] Over eighty countries have the right to information enshrined in their constitutions.[39] Many others including Brazil have adopted specific environmental information access statutes or provisions in general environmental protection laws.[40]

Map 1: Right to Information Laws, 2011.



As the map above shows, there are significant disparities between regions. While most of the nations of Europe, the Americas, and a significant portion of Asia have the laws in place, individuals in most Middle Eastern, African, Pacific, and Caribbean countries do not yet have this right incorporated into national law. Furthermore, practice lags behind laws in the majority of these countries. Causes for this gap vary, including lack of detailed administrative rules and operational policies, inadequate public capacity to use the laws, and insufficient official capacity to implement laws.

Another positive trend with respect to access to information is the increased adoption of Pollutant Release and Transfer Registers ("PRTR"s), which require governments to collect information on pollution releases and make that information publicly available through databases. PRTRs have been shown to be one of the most effective means of getting pollutant related information out to the public while simultaneously reducing pollution.[41] There has been a steady increase of countries providing registers and it is estimated that the number of national registers is likely to double over the next ten years.[42] There are now single registers covering all of North America[43] and Western Europe.[44]

Outside of these successes, however, there are many gaps remaining for access to information. These include:

- Populations are still being denied access to essential information about climate change and the environment.[45] Denial of access to information stems largely from the absence of freedom of information legislation and the institutional secrecy of numerous state authorities, coupled with legislation in place preventing access to information, including state secret laws, national security laws, and anti-terrorism legislation.[46]
- Globally, few laws exist that require governments to proactively release environmental information, including basic information on air quality and drinking water quality.[47] Meaningful access to environmental information requires governments to proactively gather, analyse, and disseminate this information.[48] Where databases exist at the international level, there are no requirements that this information is disclosed to the public.
- Many countries performed poorly in providing environmental information during and after emergencies.[49] Mandates to produce and disseminate such information are generally weak despite recent international disasters.[50]
- Few countries make attempts to publicize the results of environmental reports through the mass media or in a usable format.[51]

Public Participation

Progress on public participation is more complex to assess at the policy, planning, and project levels. In many countries, planning processes are now designed to ensure that the public has procedural rights to intervene and to ensure that public bodies have a duty to take this into account when making their decisions. One key aspect of this area is Environmental Impact Assessments ("EIAs"), which require the assessing of the environmental and social impact of projects prior to their approval. There has also been a substantial up-take of laws requiring Environmental Impact Assessments in recent years. Currently, over 120 countries have adopted legal provisions on EIAs.[52]

However, in practice, there are many gaps remaining in public participation. [53] These gaps include:

- Public participation has not been fully incorporated at the project level through EIA procedures in many countries. Often there are hurdles to meaningful participation, including insufficient lead-time or unavailable project documents, even where there are open participatory processes in place. Consultation is often held too late in the project development cycle to make a significant difference in project design or selecting outcomes.
- Framework public participation laws are still new to many governments despite progress in their adoption in a number of countries, e.g. Thailand and Indonesia.
- Implementation of EIA processes has also been criticized as weak. Often sequencing of EIA and permitting processes excludes participation in the scoping and screening exercise**,** as well as in the determination of permit conditions. In some countries, copies of EIAs are only provided to citizens at a substantial cost, while restrictions to access based on claims of commercial confidentiality are evident in other countries.
- Conflicts of interest in the public hearing process, the technical nature of EIAs**,** access to non-technical summaries in local languages, and claims of lack of independence of systems to develop and review EIAs are also evident.

At a higher level, Strategic Environmental Assessments ("SEAs") are a mechanism for incorporating environmental considerations into policies, plans**,** and programmes. The World Bank describes SEAs as "including mechanisms for evaluating the environmental consequences of policy, planning, or program initiatives in order to ensure that they are appropriately addressed in decision making on par with economic and social considerations."[54] The strengths of SEAs include a general availability of documents relating to proposed policies. A recent EU directive attempted to require that all EU member states incorporate SEAs into national law.[55] SEAs have also been incorporated within national legislation in a number of countries in Latin America and the Southeast Asia region.[56]

Access to Justice

The access to justice pillar of the Aahrus Convention is arguably an area that has experienced the least improvement. Increasingly, countries have created or enhanced environmental courts and tribunals with specialized functions.[57] In 2010, there were over 300 environmental courts and tribunals in 41 countries.[58] Recently, India established a Green Tribunal and Malawi created an Environmental Tribunal.[59]

However, there remain many bumps in the road to improving access to justice. Issues of timeliness,[60] intimidation, and costs should be highlighted. The risk of seeking injunctive relief is also significant. There are improvements in many countries in

which the rules for legal standing have been relaxed.[61] However, there are still concerns about legal standing in regional legislative processes such as planning.

Capacity Building and the Media

Legal mandates are insufficient to ensure the implementation of access rights. Governments need the infrastructure and capacity to *supply* access. Additionally, public and civil society organisations must have the ability to *demand* access and participate. Government officials need knowledge of the legal framework and officials must possess practical skills and financial resources for access across all relevant ministries. To address the needs of indigenous peoples, vulnerable communities, and the poor, governments must be innovative in how they provide and disseminate access to information.[62] These communities in particular continue to be excluded from decision-making, and specific entitlements are needed to facilitate their participation and achieve inclusiveness.[63]

In addition, a free and independent media plays a key role in increasing awareness of environmental protection and sustainable development to those most likely to be effected by these policies. Article 19 of the Universal Declaration of Human Rights declares that everyone has the right to freedom of opinion and expression. This right includes freedom to hold opinions without interference and to seek, receive, and impart information and ideas through any media and regardless of frontiers.[64] Information access effects how and what media covers. With legal protections, a free and independent media can monitor and strengthen the transparent and accountable delivery of funds for environmental goals on a diverse range of issues including climate change, protected areas, species endangerment, and protection of coastal resources. An effective, free, and independent media translates complex information into meaningful, understandable, and actionable formats for public consumption. Media facilitates discussion and debate between citizens and officials about sustainable development and green policies. The media has the ability to relay back key messages from affected communities to officials.

Furthermore, media plays a key role in disaster mitigation through advanced warning systems.[65] Indeed, in many areas affected by natural or other disasters, the mass media are the only means by which crucial information is quickly and widely disseminated.[66] In order to be able to perform this role, the media must be able to access accurate and timely information from credible sources. Local media outlets, including community radios, newspapers, and even television services, have a central role to play not only in disseminating information from official sources but also in ensuring an effective two-way flow of information underpinning effective participation.

How Rio 2012 Could Strengthen Principle 10

There is a compelling need to ensure that Principle 10 of the UN Global Compact is fully implemented in all countries. While UNEP made some progress in 2010 with the adoption of Bali Guidelines on national legislation discussed above,[67] this development is not sufficient by itself. Bolder action involving the development of new and revised international instruments to promote Principle 10 is needed.

There are a number of approaches at the international level that should be considered to strengthen Principle 10. These approaches are not exclusive but rather complementary and should be considered as part of a package that can be advanced simultaneously:

1. **A New Global Convention on Principle 10:** Drafting and adopting a new, global, legally binding instrument incorporating the access rights of Principle 10, is the most far-reaching option. Such an instrument would be a global platform to engage worldwide discussion on the subject of access rights**,** as has been done for other environmental issues. It could also ensure that Principle 10 is uniformly adopted worldwide. However, there are a number of challenges associated with the development of a global legally binding instrument such as a convention on access rights. The proposal of such an instrument may encounter resistance from some states and there is a risk that such an initiative would lead to the adoption of minimal standards. Considerable development time would likely be necessary. Finally, there may be difficulties regarding how such an instrument would affect parties to the Aarhus Convention**.**
2. **Regional Principle 10 Conventions:** A more scaled down approach would focus on the development of new, regional, legally binding instruments similar to the UNECE Aarhus Convention. This approach has the potential to encourage greater involvement of all countries in each region during development of the regional instrument's text. This would differ to the development process of an international agreement, which would limit discussion to major countries. As such, a regional approach would provide the opportunity to take account of regional specificities and create a sense of regional ownership. In addition, countries within a region often share common political, cultural and linguistic ties, potentially simplifying the negotiations and making it easier to reach consensus. Finally, regional conventions would likely strengthen existing regional institutions and processes to reduce resource constraints.
3. **Opening Up the UNECE Convention to All States:** The last option is to encourage accession to the Aarhus Convention by states outside the UNECE region.[68] The Treaty is well respected and has a functioning oversight system, and has already been ratified by 44 countries.[69] However, no states outside the UNECE region have acceded to it. There are political and practical obstacles to accession including the procedure for accession itself and reticence from many governments towards adopting a treaty viewed as "European-centric."

Considering these three options, the best way to strengthen Principle 10 is to begin the process of negotiating regional and sub-regional instruments using the UNECE Aarhus Convention as a model. This approach is guided by a pragmatic belief that a new global convention would be too slow to develop and

is likely to be substantially watered down in the process. The Aarhus Convention has been recognized as a model that should be considered for other regions.[70] However since its adoption in 1998, no other nation outside the UNECE region has signed it. This suggests it is not likely to significantly expand in terms of accession without substantial incentives, which have not yet been forthcoming.

There are risks to a regional and sub-regional approach — some regions may be unlikely to adopt legally binding instruments at the regional level in the foreseeable future. However, the possibility for progress toward agreement on their merits, drafting, and adoption at the sub-regional level remains. The development of regional treaties could further strengthen efforts to create a global instrument in the future as has happened in the field of anti-corruption.[71]

Opportunities in Latin America

Latin America and the Caribbean region are ideal candidates for implementation of a regional approach. In both regions there has been a normative convergence around Principle 10. There have been relevant developments in various areas:

- ***Regional Support***. The Declaration of Santa Cruz +10 reaffirmed the commitment of the members of the Organisation of American States ("OAS") to Principle 10 as well as the importance of public participation in sustainable development decision-making.[72] The Inter American Court of Human Rights recognizes the right of citizens in the region to have access to information and participate in decisions that affect their rights,[73] while the OAS Secretariat recently released a Model Law on Access to Information.[74]
- ***Free trade agreements***. Such agreements between several North and South American states recognize the importance of environmental assessments and the need to harmonize environmental regulations and standards.[75] The Central American Commission on Environment and Development ("CACED") along with the UN Institute for Training and Research developed tools for a national strategy to guarantee access rights in Nicaragua, Honduras, and the Dominican Republic. ECLAC proposed activities in its 2011 programme of work to help states implement Principle 10.
- ***National Developments***. A number of countries in the region have already adopted laws improving access rights including Chile, Jamaica, Peru, and Mexico, while Brazil is currently about to adopt one.[76] Jamaica has just undergone an extensive review of its Access to Information Law to improve implementation, proactive disclosure, and development of a mandated public interest test.[77] Mexico has one of the most advanced access to information regulatory systems, with one of the most effective oversight and enforcement agencies in the world, and has developed its own pollutant release and transfer register.[78] Some countries have increased their efforts to promote public participation. For example, Chile is in the process of revising environmental impact regulations that will take public participation to the next level — to proactively include poor and marginalized groups in decision-making by requiring proponents of projects and the government to adapt their strategies of information dissemination and to adopt methods of citizen participation that take into account the social, economic, cultural, and geographic characteristics of the affected population.[79] Draft regulations require making special efforts to adapt procedures, taking into account vulnerable and geographically/territorially isolated communities, indigenous communities or those with ethnic minorities, and communities with a low educational level.[80] What is particularly exciting about this new draft regulation is that it is the first time a Latin American country has brought the notion of environmental justice in public participation into standard practice within the framework of a law. And last, Brazil leads the way with innovative strengthening of the justice system to provide relief for environmental harms through public prosecutors and environmental courts.

Conclusion and Recommendations

Experience and research have demonstrated that freedom of expression, access rights (including access to information, public participation, and access to justice), transparency, and civic engagement are fundamental to sustainable development and achieving the Rio Principles. While there has been significant progress over the past twenty years, billions of people around the world still do not have these rights.

If Rio 2012 is to be successful and bring the world closer to building a green economy and ensuring sustainable development, these fundamental principles must be at the heart of the *Outcome Document* and consecutive commitments by governments to advance Principle 10 at the international, regional, and national levels.

This article offers four key recommendations. First, all states should codify Principle 10 of the Rio Declaration in their national laws and commit to improve their laws, institutions, and practices for implementation of Principle 10. Particularly states should establish a legal and regulatory framework to protect freedom of expression, freedom of information, freedom of association, freedom of assembly, access to administrative and judicial remedies, and political freedom. This legal regulatory framework should also enshrine principles of maximum and proactive disclosure of environmental and green economy information as well as the right to broadly participate in environmental and natural resource decision-making. The media, civil society groups, scientists, and members of the general public must not be hindered in their efforts to gain access to information on development and environmental issues and to report and express their opinions. Whistleblowers, especially those reporting environmental hazards, must be afforded adequate legal protection. Further, all obstacles preventing people living in poverty, vulnerable groups (such as women and minorities) and indigenous peoples from accessing information on development and environmental policies must be removed. Proactive measures must also be taken to promote these groups' participation in the design and execution of development strategies.

Second, the Rio 2012 *Outcome Document* should call for new international instruments to provide global and regional standards for, and oversight of, the implementation of Principle 10 into national law. This would include a resolution by all member states mandating UN regional bodies in Asia, Africa and Latin America and the Caribbean, as well as UNEP regional offices and other regional bodies to take steps to negotiate and conclude legally binding regional or sub-regional conventions modelled on the UNEP Principle 10 Guidelines. The Aarhus Convention Secretariat should intensify its efforts to convince governments in other regions of the world to either adopt the Convention or take it as a model for regional or sub-regional efforts.

Third, the Rio 2012 *Outcome Document* should include a commitment by all international organisations and agencies working on sustainable development to codify Principle 10 of the Rio Declaration in their rules and procedures, including by proactively disclosing information, providing for the participation of civil society in their decision-making processes, and establishing redress mechanisms for individuals affected by their policies and activities. International financial institutions should adopt comprehensive standards as proposed by the Global Transparency Initiative.

Fourth, the Rio 2012 *Outcome Document* should include specific and time measured information regarding the implementation of the Bali Guidelines recently adopted by the UNEP Governing Council. This programme should identify target countries and specify long term funding sources as well as a timetable for UNEP to provide assistance to developing countries to bring their laws, institutions, and practices in line with the Guidelines. The programme should include capacity building programmes, opportunities for mentoring of public officials, and mechanisms for civil society organisations to share experiences on the development of new legal instruments to create and implement access rights.

Endnotes: Moving from Principles to Rights: Rio 2012 and Access to Information, Public Participation, and Justice

1 In addition to Principle 10, the Rio Declaration Principle 11 asserts that States should "enact effective environmental legislation." Principle 15 speaks about the precautionary principle. Principle 17 states that "[e]nvironmental impact assessment[s] are a national instrument" and should "be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority." Principles 20 and 22 recognize that women and indigenous people play a vital role in environmental management and that their participation is essential to achieve sustainable development. United Nations Conference on Environment and Development, Rio de Janiero, Braz., June 3-4, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), Annex I (August 12, 1992), http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm.

2 *See id.*

3 *See* Foti J. et al., World Resources Institute, Voice and Choice: Opening the Door to Environmental Democracy 1, 78 (2008), http://www.accessinitiative.org/sites/default/files/voice_and_choice.pdf.

4 *See Rio Declaration on Environment and Development*, *supra* note1.

5 See Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A1CONF.151/26 (1992).

6 *See* U.N. Department of Economic and Social Affairs, Division for Sustainable Development, Johannesburg Plan of Implementation of the World Summit on Sustainable Development 2 (1992), http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl (reaffirming a commitment to the principles of Rio and the implementation of Agenda 21).

7 *See* Foti J. et al., *supra* note 3, at 78.

8 U.N. Secretary General, *Objective and Themes of the United Nations Conference on Sustainable Development: Rep. of the Secretary-General*, 4, 7-8, U.N. Doc. A/CONF.216/7 (Dec. 10, 2010), http://www.uncsd2012.org/files/prepcom/SG-report-on-objective-and-themes-of-the-UNCSD.pdf.

9 U.N. Secretary General, supra note 8, at 4.

10 U.N. Secretary General, supra note 8, at 25.

11 U.N. Secretary General, supra note 8, at 5.

12 Second Meeting of the Consultative Group of Ministers or High-level Representatives on International Environmental Governance, Nairobi-Helsinki Outcome (Nov. 23, 2010), http://www.unep.org/environmentalgovernance/Portals/8/documents/Events/NairobiHelsinkifinaloutcomeedited.pdf

13 *See* UNEP Division of Environmental Law and Conventions, Fragmentation of Environmental Pillar and its Impact on Efficiency and Effectiveness 1, 4, http://www.pnuma.org/forumofministers/18-ecuador/InstitutionalFrameworkforSustainabledevPAPER2.pdf (discussing the inability of various Multilateral Environmental Agreements inabilities to address environmental issues in a unified approach).

14 Roberts, *Id.*

15 *See generally* Accountability and International Financial Institutions — Deepening Transparency and Opening Political Space, http://www.ifitransparency.org/index.shtml (describing a report from the Centre for Law and Democracy stating that International Financial Institutions have made progress towards access to information).

16 U.N. Secretary General, *supra* note 8, at 25.

17 *See, e.g.,* Alasdair S. Roberts, *A Partial Revolution: The Diplomatic Ethos and Transparency in Intergovernmental Organizations*, 64 Public Administration Review 408-422 (Jul 2004).

18 *See* Second Meeting of the Consultative Group of Ministers High-level Representatives on International Environmental Governance, Nairobi-Helsinki Outcome , *supra* note 12, at 1, 4 (explaining the Nairobi-Helsinki's failure to include compliance mechanisms for the effective implementation of Multilateral Environmental Agreements).

19 *See* Organisation for Economic Co-Operation and Development, OECD Environmental Performance Reviews — A Practical Introduction, OCDE/GD(97)35 (1997), http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=OCDE/GD(97)35&docLanguage=En.

20 See Commission for Environmental Cooperation, Bringing Facts to Lights: A Guide to Article 14 and 15 of the North American Agreement on Environmental Cooperation 1, 14 (2000), http://www.cec.org/Storage/41/3331_Bringing%20the%20Facts_en.pdf (discussing the mechanisms for citizens' submissions of complaints).

21 Peggy Rodgers Kalas & Alexia Herwig, *Dispute Resolution under the Kyoto Protocol*, 27 Ecology L.Q., 53, 58 (2000).

22 Kalas et al., *id.,* at 68.

23 U.N. Governing Council of the United Nations Environment Programme, *Twenty-Sixth Session of the Governing Council/Global Ministerial Environment Forum, Item 4 (b) of the Provisional agenda Policy Issues: Emerging Policy Issues*, UNEP/GC.26/17/Add.2 (Feb. 2011).

24 *Id.*

25 The 1992 Rio Declaration was signed by 178 States. There has been notable progress both internationally and nationally since its adoption. However, many gaps remain.

26 *See, e.g.,* Article 19, The London Declaration for Transparency, the Free Flow of Information and Development (Aug. 2010), http://www.article19.org/data/files/medialibrary/1798/London-Declaration.pdf (addressing the commitment of 150 countries to adopt eight millennium development goals and to meet their target by 2015).

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The New Protectors of Rio: Global Finance and the Sustainable Development Agenda

*by Ariel Meyerstein**

Introduction

In this twentieth anniversary year of the Rio Earth Summit of 1992,[1] the United Nations is hosting a Conference on Sustainable Development ("Rio +20"). As a supplement to Rio+20, the U.N. Global Compact will organize the Rio+20 Corporate Sustainability Forum in cooperation with the Rio+20 Secretariat, the UN System, and the Global Compact Local Network Brazil.[2] The Corporate Sustainability Forum is a prime example of contemporary global governance — what some have termed transnational "new governance"[3] — in that it will be a multi-stakeholder affair sponsored by international organizations, transnational corporations, and NGOs. As such, the Corporate Sustainability Forum is a fitting addition to Rio+20, since much of the sustainability agenda since the 1992 Earth Summit has been driven by interactions with the private sector and, as this Article will describe, much of its future rests in the hands of the private sector — particularly with global financial institutions.

After Rio: The Revolt Against "Big Development" and the Rise of Private Development Finance

Since its earliest formulations, a tension has resided at the heart of the concept of sustainable development between the need of developing countries for economic growth and the simultaneous advancement of increasingly progressive approaches (through the development of international environmental law) to constraining the negative impacts of industrial development on the environment and society. When the United Nations' General Assembly called for what would become the Rio Earth Summit, it described it as a conference on the "environment *and* development."[4] The Earth Summit was intended to advance " international environmental law, taking into account the Declaration of the UN Conference on the Human Environment, *as well as the special needs and concerns of the developing countries*."[5] These special needs and concerns were the worries that newly established international environmental law and policy would create trade restrictions that would be prioritized over poverty reduction efforts.[6]

For decades before the Earth Summit, development policy was dominated by exogenous growth theory,[7] which led the World Bank Group's International Bank for Reconstruction and Development ("IBRD") to focus nearly forty percent of its lending activity on large infrastructure projects.[8] Since at least the 1970's, however, local and transnational civil society groups have protested the adverse impacts some large projects have had on local populations and ecosystems, including the forceful dislocation of politically marginalized, often indigenous people from their homes, ancestral lands and way of life, and in some instances threatening to destroy irreplaceable cultural sites, unique habitats or species.[9] Such "problem projects" often result from the incapacity of the regulatory systems in project host countries to properly assess environmental and social impacts and enforce compliance with national and international laws.[10] According to United Nations High Commissioner for Human Rights, Navi Pillay, "many of the estimated 370 million indigenous peoples around the world have lost, or are under imminent threat of losing, their ancestral lands, territories and natural resources because of unfair and unjust exploitation for the sake of 'development.'"[11] Problem projects can also be found at the epicenters of many national and international conflicts throughout the world, some of them violent.[12]

The IBRD's fetish for large project financing continued with intensity until a few years after the Earth Summit, when such lending declined sharply to less than thirty percent of the IBRD's total lending.[13] This departure from the scene was mirrored by a drastic decline in other official sources of aid to governments, which dropped 40% between 1991 and 1997.[14] The decline in public development finance has been attributed to the emergence of a global market for private investment in infrastructure spurred by the privatization and deregulation of many industrial sectors, as well as the continued globalization of financial markets through the harmonization of tax regimes and the lowering of restrictions on foreign capital.[15] Although these changes to global markets were likely the main force behind the IBRD's partial (and temporary) retreat from infrastructure lending, another significant contributing factor was the substantial reputational costs that had been imposed on the bank by its history of developing infrastructure projects in an unsustainable fashion.[16]

By the mid-1990s, civil society demands led to the creation of accountability mechanisms and continually evolving social and environmental risk review policies within the multilateral development banks, specifically the World Bank's Inspection Panel.[17] As the World Bank's private lending arm, the International Financial Corporation ("IFC"), picked-up the IBRD's slack in financing large projects (often in syndicates along with commercial lenders), it too saw a backlash of civil society protest that gave way to an accountability mechanism

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— the Compliance Advisor Ombudsman — and a host of continually updated environmental and social policies.[18] These mechanisms have provided some limited means for affected communities to have project approval processes reviewed, but the mechanisms have been criticized for not truly protecting project-affected populations from undue harm.[19]

Despite these advancements at multilateral development institutions, at the turn of the new millennium there remained a gap between the level of scrutiny applied to project finance transactions by development banks and the processes (or lack thereof) for environmental and social risk review deployed by commercial banks. With this gap in mind, civil society groups sought to build on their accomplishments vis-à-vis multilateral development banks and focus on private financiers of large development projects.[20] NGOs launched a series of public advocacy campaigns directed at the leading commercial lending institutions, all of which were invested to varying degrees in problem projects.[21]

At the World Economic Forum in Davos in January 2003, a coalition of NGOs launched the Collevecchio Declaration on Financial Institutions and Sustainability.[22] The Collevecchio Declaration recognized the "role and responsibility" of financial institutions ("FIs") in globalization, stating that FIs are "channeling financial flows, creating financial markets and influencing international policies in ways that are too often unaccountable to citizens, and harmful to the environment, human rights, and social equity," and called on them to "promote the restoration and protection of the environment, and promote universal human rights and social justice," which principles "should be inherent in the way that they offer financial products and services, and conduct their businesses."[23] The Collevecchio Declaration remains the benchmark against which civil society actors measure multilateral and private financial activity.[24]

A core group of four banks who had been subject to aggressive public advocacy campaigns before the Collevecchio Declaration already formed a working group in late 2002 to explore the creation of an industry standard for environmental and social risk management procedures.[25] The group decided to base their new framework on the IFC's Performance Standards because of the utility of having one global standard applicable throughout the entire project finance industry.[26] After further refinement, on June 4, 2003, the senior executives of ten commercial banks met at the IFC in Washington, D.C and formally adopted the "Equator Principles" ("EPs").[27] The goal, as the name suggests, was to "level the playing field" by establishing one standard of project review that would apply globally, i.e., on both sides of the Equator.

The Equator Principles' Preamble states that they were adopted "in order to ensure that the projects we finance are developed in a manner that is socially responsible and reflect sound environmental management practices."[28] Accordingly, the Preamble declares that "negative impacts on project affected ecosystems and communities should be avoided where possible, and if these impacts are unavoidable, they should be reduced, mitigated and/or compensated for appropriately."[29] Significantly, the banks were never coy about the mutual benefits of this approach, i.e., their faith in the "business case" for sustainability, noting further in the Preamble that "[w]e believe that adoption of and adherence to these Principles offers significant benefits to ourselves, our borrowers and local stakeholders through our borrowers' engagement with locally affected communities."[30] The Preamble then hints at the potential for such regimes: "[w]e therefore recognise that our role as financiers affords us opportunities to promote responsible environmental stewardship and socially responsible development."[31]

The regime has grown from ten initial founding members with about thirty percent of the *global* market share[32] to seventy-six institutions from over thirty countries.[33] The EPFIs claim that over seventy percent of all *emerging* market project finance transactions are covered by the EPs.[34] The EPFIs' ranks include commercial banks, export credit agencies, and development finance institutions.[35] As much as the EPs have grown to become an industry standard, they have thus far not deeply penetrated institutions in key emerging markets where a tremendous amount of project finance and some of the largest individual deals. Thus, while the EPs have expanded tremendously in their eight years of existence, the global playing field still has some uneven patches on it, and those patches are where a significant amount of development is taking place and where some of the most vulnerable populations reside. Although the global spread of the EPs is a significant measure of their utility as a regime, others have theorized about what specific attributes of a regime are necessary conditions for effective governance, which this article explores below.

The Equator Principles as a "Transnational 'New Governance'"

Defining Transnational "New Governance"

The transnational civil society movement that encouraged institutional change at the World Bank simultaneously led to the creation of the World Commission on Dams ("WCD"), which was brokered between the World Bank and the World Conservation Union ("IUCN"). The WCD is perhaps underappreciated now for what it was: among the very first examples of multi-stakeholder global governance,[36] a transnational merging of the governmental, civil society, and private sectors, though a decade later it had already become more commonplace.[37] The broader contribution of the WCD, some have argued, was its role as an agent of normative change, as it proposed that infrastructure decision making should be a procedurally dense process imbued with "a "[human] rights and risks" perspective organized around "disclosure, consultation, and dialogue."[38] These concepts have informed the development of the development finance institutions' approaches to project review and risk mitigation and are at the core of the EPs, although not yet as robustly as they could be, in the views of the EPs' key NGO interlocutors.[39]

Twenty years later, the phenomenon that began with the WCD has gone "viral." The diverse regulatory phenomena that have emerged in response to global regulatory gaps have been typologized as transnational "new governance"[40] and "civil

regulation" or "private regulation."[41] They are direct public and private responses to a series of missed opportunities by State actors to collectively create effective regimes of global international business regulation. For example, the Forest Stewardship Council emerged directly out of the frustration by environmental groups at what they considered to be the complete failure of governments at the 1992 Rio Earth Summit to conclude a binding international treaty on forestry issues.[42]

What has resulted, however, is a "new global public domain" that does not "replace states" so much as "embed systems of governance in broader global frameworks of social capacity and agency that did not previously exist."[43] As political scientists Kenneth Abbott[44] and Duncan Snidal[45] have argued, these new arrangements of regulatory power constitute the emergence of a complex "governance triangle,"[46] in which international standards are now created, implemented, monitored, and enforced by varying combinations of states, firms, and NGOs seeking to transform whole supply chains and global networks of operations spanning multiple jurisdictions.[47] There are now over 300 such initiatives attempting to introduce governance into nearly every major global economic sector, including energy, the extractive industries, forestry, chemicals, textiles, apparel, footwear, sporting goods, coffee, and cocoa.[48]

Governance Effectiveness and Competencies

But how are we to measure the effectiveness of such diffuse regulatory regimes? Abbott and Snidal propose that regulatory processes occur in roughly five stages (although they do not always occur in an orderly fashion): *Agenda-setting*, *Negotiation*, *Implementation*, *Monitoring*, and *Enforcement* (a process they short-hand as "ANIME").[49] Truly effective regulatory schemes, they argue, must address all five stages.[50] In addition, they explain that throughout these stages, the actors involved (states, firms, and NGOs) can exhibit four competencies to varying degrees at different stages: independence, representativeness, expertise, and operational capacity.[51] All of these competencies — which vary in their importance depending on the stage of the ANIME process — are necessary, though not necessarily sufficient, for a regime to be effective.[52]

In transnational settings, however, Abbott and Snidal argue that no single actor — even an advanced democracy — has the competencies required for effective regulation at *all stages* of the regulatory process.[53] While different actors may develop additional competencies over time through hiring experts, employees or consultants, certain capacities are beyond both firms' and NGOs' reaches; for example, firms cannot be truly independent, but they can improve the perception and fact of their independence by hiring separate monitoring departments or enlisting external monitors.[54] Given these limitations, Abbott and Snidal conclude that "single-actor schemes, whose competencies are primarily derived from their sponsors, are implausible as transnational regulators."[55] Accordingly, they argue that the "most promising strategy may be collaboration," i.e., "assembling the needed competencies by bringing together actors of different types."[56]

In this regard, even when states do not regulate directly, they can nonetheless play substantial roles indirectly by shaping the bargaining among different actor groups that leads to the formation and shaping of transnational governance regimes.[57] A primary example of such indirect influence is in standard-setting by states and international organizations; standards "shape the expectations and normative understandings that guide other actors engaged in [regulatory standard setting]."[58] They create levers by which NGOs hold firms accountable and focal points that simplify bargaining over the content of standards and reduce its cost."[59] Indeed, states and international organizations can even play an "entrepreneurial role[]" in "enhancing the competencies and bargaining power of other actors and modifying the situational factors" relevant to the bargaining among actors.[60]

Despite the efforts by NGO-and-firm-based schemes to innovate and create their own standards, they often root these standards in state-generated norms or eventually return to international norms as benchmarks.[61] This is primarily due to the legitimacy conferred by norms developed through state or inter-state processes. These actors' representativeness almost certainly encompass a broader range of interest and preferences than do the narrow missions of either NGOs or firms, and thus, state-generated norms carry more legitimacy and by referring to or relying upon them, NGOs and firms can confer greater legitimacy on their regulatory schemes.[62] The use of legitimate public standards also helps to shift the balance of power between firms and NGOs in the creation of regulatory schemes: by relying on the more legitimate state-based standards, NGOs make it harder for firms to resist their demands. This is clearly what has occurred with respect to the relationships among the IFC, the Equator Principle Financial Institutions ("EPFIs"), and NGOs, although in complex ways.

The Equator Principles' Effectiveness

Agenda-setting, Negotiation and Implementation

All of the relevant actor groups — the Equator Principle banks, the IFC and the NGO community have been instrumental in agenda-setting, negotiation of the applicable standards and implementation of more sustainable practices by private actors. Between 2004 and 2006, the EPFIs and NGOs participated in the IFC's review and update of its Performance Standards.[63] When in February 2006 the IFC adopted its new Performance Standards, the EPFIs conducted a further consultation from March to May 2006 with NGOs, clients, industry associations, and export credit agencies which led to the substantially revised Equator Principles II ("EPII"), also based on the IFC's updated Performance Standards.[64] EPII launched on July 6, 2006, at which time forty institutions re-adopted the EPs. The most important revisions in EPII arguably made them much more effective than they were previously. These changes included lowering the project cost threshold from fifty to ten million;[65] the extension of the EPs to banks' advisory activities;[66] and the inclusion of upgrades and expansions of existing projects (including those not built under EP review) under the regime's coverage.[67] Perhaps the most important change was the EPs'

first set of "teeth," Equator Principle 10, which established the requirement to report annually on progress and performance and more robust public consultation standards.[68] When the IFC later updated its Environmental Health and Safety Guidelines in April 2007, the EPFIs incorporated this revision into the EPs as well.[69]

The resulting ten Equator Principles correspond loosely to the various phases of the project finance lending cycle, which also relate to the banks' project development cycle. The first phase is the lender's due diligence (EPs 1, 2, 3, & 7), which occurs during the pre-construction activities of project design and permitting.[70] The second phase is loan negotiation and documentation (Principles 4 & 8).[71] The third phase is portfolio management (Principle 9), which correlates with project implementation.[72] The disclosure, consultation, and grievance mechanism requirements (Principle 5 and 6) may apply throughout the lending cycle, depending on the anticipated extent of impacts on local communities.[73] All requirements flow from the first Principle 1, EP1 on the categorization of projects, which dictates that borrowers categorize projects as either Category A (projects with potential significant adverse social or environmental impacts that are diverse, irreversible or unprecedented), Category B (projects with potential limited adverse social or environmental impacts that are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures), or Category C (projects with minimal or no social or environmental impacts).[74]

According to Equator Principles 3, the choice of the standards or law applicable to project risk review and mitigation depends on the categorization of the project: when developing projects in high-income Organization for Economic Co-operation and Development ("OECD") countries, borrowers' environmental and social risk assessment must comply only with national law.[75] When developing projects in low-income or non-OECD countries, the IFC's Performance Standards are the applicable environmental and social standards governing project risk assessment and mitigation.[76] However, even in high-income countries, national law is not necessarily an ironclad guarantee against problem projects. Regardless, when a project is being developed in an emerging market context, i.e., a non-OECD country or low-income OECD country, the EPs insist that project sponsors also take into account the International Financial Corporation's Performance Standards on Social and Environmental Sustainability, which include detailed environmental and social assessment policies and procedures related to specific thematic areas, each of which is interpreted by Guidance Notes.[77] In addition to the Performance Standards, the EPs also reference the World Bank's Environmental, Health and Safety ("EHS") Guidelines, which identify specific performance levels and technical guidance for sixty-three sectors.[78]

Shortly after the launch of the EP Association in June 2010, the EPs underwent a seven month-long Strategic Review led by external consultants that overlapped in time with the IFC's comprehensive overhaul of its Performance Standards.[79] The EP Association offered a response to the Strategic Review, but now that the 2011 revision of the IFC Performance Standards has been finalized, the EP Association has incorporated the revised Performance Standards and has launched a further complete update — towards Equator Principles III — to be completed by late-2012.[80]

Thus, in the two substantial updates of the IFC Performance Standards, the EPFIs — as the most common end-users of the Performance Standards ("PS"), played an unusually large role in shaping their evolution.[81] Furthermore, any changes to the PS will almost certainly have to be accepted and incorporated writ large by the EPFIs now that they have relied on the PS for their normative content for over seven years.[82] Arguably the linkage to the IFC's Performance Standards caused the EPs to "ratchet-up" their requirements more quickly than they might otherwise have done if the banks were only facing-off against their NGO interlocutors, which could have led to more of an entrenched stalemate than already has emerged at times. From this perspective, the first few EPFIs certainly achieved one of their purported goals in forming the EPs, namely, to have a seat at the table when discussion of standards occur in the project finance sector. The EPs have also taken on the role of global standard-bearer in ways that complement the IFC's own efforts: the EP banks "coordinate closely" with the IFC on outreach activities in the emerging markets,[83] which according to an IFC staffer, allows the IFC to extend its reach with commercial banks in those regions more easily. This collaboration has at times been read in different ways as well by the NGOs: according to Banktrack, the EPFIs had used the ongoing PS review as a justification for *inaction* on certain issues.[84] Nevertheless, it cannot be denied that the triangulated efforts of these actors has contributed to the formation and proliferation of the EPs.[85]

Monitoring and Enforcement

Although the EPs have dramatically changed the regulatory landscape of global project investment and development, like any regulatory regime, they are far from perfect. From the start there were concerns that the EP regime did not go far enough in meeting the ideals expressed in the Collevecchio Declaration.[86] In the months following the creation of the EPs (January 2004), a new coalition of NGOs — Banktrack — formed to monitor sustainability practices in the financial sector.[87] Banktrack quickly designated itself as a watchdog of the EPFIs, releasing report after report analyzing the banks' implementation and apparent commitment levels.[88] Banktrack later devoted a special section of its website to featuring "dodgy deals," serving as a clearing-house for information on controversial projects, including NGO activities and complaints as well as an opportunity for banks to respond to concerns.[89] It must be emphasized, however, that the NGOs' ability to perform this function — which some suggest they do only reluctantly — is impeded by the EPFIs' unwillingness thus far to do more extensive project-level disclosure.[90]

The NGOs' complaints about the Equator Principles have remained fairly constant from the start, although some of them have been addressed partially or completely by the EPFIs, leading the perceived legitimacy of the regime to wax and wane over time — at least in the eyes of their NGO interlocutors.[91] Indeed,

the long-standing relations between the EPFIs and the Banktrack network of NGOs reached its lowest point in early 2010 when the NGOs announced a boycott of the EPFIs' large annual meetings at which the NGOs had become regular participants.[92] Banktrack stated that they no longer believed these large annual meetings to be productive fora for advancing their objectives and announced that they would not participate in them until real progress was made by the EPFIs.[93]

The major persisting criticisms in the NGOs' eyes are the EPs' insufficient transparency on the project, institution, and regime levels;[94] and the related lack of an independent monitoring, verification, or enforcement mechanism.[95] NGOs are also dissatisfied with the EP's insufficient project level grievance mechanisms,[96] particularly their limited scope of application only to project finance transactions as opposed to all project-related transactions regardless of financing structure[97] and their failure to proactively address climate change.[98] It is beyond the scope of this Article to address these complaints in depth, but it suffices to note that whether the NGO community likes it or not,[99] they have assumed the role of policemen and in the process, have created a kind of uneasy alliance — a quasi hybrid governance scheme, demonstrating the wisdom of Abbott and Snidal's insight that to achieve effective governance the best strategy might be collaboration and "assembling" the various competencies of different actors.

Independence, representativeness, expertise, and operational capacity.

Looking more closely at the four competencies described by Abbott and Snidal, we see that if we broadly construe the activities of governance related to project finance in the private sector, the EPs do have most of the competencies covered, particularly if its supporting governance actors — the NGOs and the IFC — are included as part of the "governance" structure, or "triangle."[100]

Representativeness. Though both NGOs' and banks' representativeness would ordinarily be subject to some criticism,[101] this is offset somewhat by the inclusion of the IFC — a multilateral institution with over 140 Member States — and its significant influence on both standard-setting and ongoing assistance in technical advisory services and outreach.[102] Although true representativeness, one that would include the views of impacted populations, is far from being achieved, the most recent revision of the Performance Standards took considerable steps in this direction, and the EPs may very well follow suit.

Operational Capacity and Expertise. The EPFIs provide sufficient operational capacity individually and are continually ramping-up their collective capacity and resources. Originally the "Management Structure" consisted of the Steering Committee members (about a dozen banks) and a modest secretariat staff (of one person) that divided-up the work of administering, strengthening, and growing the EP regime.[103] This governance structure includes subcommittees known as Working Groups that focus on various substantive aspects of maintaining and enhancing the EP regime, including Working Groups on (a) adoption, (b) best practice, (c) climate change, (d) outreach (divided again by region), (e) scope review — corporate loans, (f) scope review — export finance, (g) social risks, (h) stakeholders — NGOs, (i) stakeholders — socially responsible investment, and (j) stakeholders — industry outreach.[104]

Responding once more to NGO concerns, in July 2010 the EPFIs launched the "Equator Principles Association," a legally binding governance structure complete with bylaws, voting mechanisms, membership dues.[105] This enhanced formalization also responded in part to another of the NGOs' concerns, as it introduced a de-listing procedure for removing EPFIs who are not compliant with the annual reporting requirement in EP 10.[106] With the launch of the Association, the EPs have drastically improved their operational capacity, as they now collect membership dues and have formal rules to govern their relations with one another.[107] Nevertheless, there remains much room for improvement.

Independence. While the independence of the EP Association from its individual members remains an open question, this, along with the issues of monitoring and enforcement, are being counter-balanced by persistent NGO monitoring, engagement and activism (and, on project-specific issues, independence is increased by EP 7's requirement that on Category A and B projects the banks must hire an external independent consultant).[108]

In sum, when viewed in isolation, the EPs can be characterized as fitting Abbott and Snidal's positive model predicting that single-actor governance schemes will provide only modest self-regulation; the newly-formed EP Association has some of the competencies described as necessary by Abbott and Snidal (expertise, operational capacity, and some representativeness), while primarily lacking demonstrated independence.[109] Arguably, however, this is to take too myopic a view of the overall "governance triangle" operating with respect to the project finance sector. When the combined effects of the IFC and NGOs are included a different picture emerges with the various actor groups collectively providing all four competencies, albeit imperfectly and in an ever-evolving schema of hesitant collaboration.

Conclusion: Financiers as Setting the Sustainability Agenda

Perhaps the most interesting aspect of the EPs' growth and development is the way in which they have made themselves an indispensible party to future debates on sustainable development and the specific articulation of standards key to economic growth — the IFC's Performance Standards. Such developments are not limited to the EPs, however. In fact, there have been signs that the financial sector is assuming a considerably more active role in directing the global governance of their own activities, and by extension, much of the global economy. For example, leading into renewed climate negotiations in Cancun in late 2010, 259 investors from Asia, Africa, Australia, Europe Latin America and North America with collective assets under management totaling over $15 trillion[110] called for governments to take action

on climate change. These investors were not necessarily united by their passion for the environment, but more likely by their realization of the financial risks related to climate change, which they claimed could amount to GDP losses of up to 20 percent by 2050, as well as the economic benefits of shifting to low-carbon and resource-efficient economies.[111]

Similarly, in 2005 U.N. Secretary-General Kofi Annan helped launch the Principles for Responsible Investment.[112] Not unlike the EPs, the PRI provide guidance to investors in how to integrate issues of environmental and social governance into their investment policies. As of April 2012 over 1000 investment institutions from over 45 countries have become signatories, with assets under management equaling approximately US$ 30 trillion.[113] A particularly active group of PRI signatories have in fact turned-up the pressure on the largest but also most criticized[114] U.N.-sponsored initiative — the Global Compact, which has more than 10,000 participants, including over 7,000 businesses in 140 countries, although over 3,100 companies have already been expelled for noncompliance and 750 are expected to be expelled in the second half of 2012.[115] In January of 2008, a coalition of 38 investors worth over US$ 3 trillion wrote letters to the CEOs of 130 major listed companies that are signatories of the UN Global Compact.[116] In their letters the investors praised twenty-five Global Compact signatories for meeting their obligations under the Compact to produce an annual "Communication on Progress," but simultaneously identified over 100 other companies as "laggards," who were mainly based in emerging markets, and demanding them to comply with their obligations.[117] The investors pointed out that they represented a "critical mass of institutional investors who believe management of corporate responsibility or [Environmental, Social and Governance] issues is highly relevant to the long-term financial success of their investments" and that the Compact's reporting system provided an important measure of companies' performance on these issues.[118]

The NGOs' 'nudges' continue to have some impact, even if the progress is slower than they might wish. In the absence of coordinated multilateral action from governments on climate change, the NGOs and the EP Strategic Review called upon the EPs to adopt policies addressing the issue.[119] A few banks have responded by separately creating the Carbon Principles, which aim "to provide a consistent approach for banks and their U.S. power clients to evaluate and address carbon risks in the financing of electric power projects" and in the process have articulated a set of Principles and an "Enhanced Environmental Due Diligence Process" to help create industry best practice in the energy sector in the United States.[120] In addition, the EPFIs, in collaboration with the World Wildlife Fund and the Business and Biodiversity Offsets Program, has launched "B4B" — the Biodiversity for Banks program — which is "designed to help financial institutions overcome the challenges of incorporating risks associated with biodiversity and ecosystem services — all of the valuable resources provided by nature including safe drinking water — into their lending decisions."[121]

The initiation of these conversations among financiers on climate change and biodiversity — and the demands on companies from investors for real improvement, not just lip service on these issues — offer a glimpse of what we might see at Rio+20's Corporate Sustainability Forum.[122] Unlike the first Rio Earth Summit, which was driven principally by government negotiation and attended by NGOs,[123] the Corporate Sustainability Forum provides a unique opportunity for the private sector — and financiers and investors in particular — to set the sustainability agenda for the next twenty years.

Endnotes: The New Protectors of Rio: Global Finance and the Sustainable Development Agenda

1 *See generally* Earth Summit, http://www.un.org/geninfo/bp/enviro.html (last visited Apr. 15, 2012).

2 *See* Rio + 20 Corporate Sustainability Forum, http://unglobalcompact.cvent.com/events/rio-20-corporate-sustainability-forum/event-summary-251b87a2deaa4e56a3e00ca1d66e5bfd.aspx http://unglobalcompact.cvent.com/events/rio-20-corporate-sustainability-forum/event-summary-251b87a2deaa4e56a3e00ca1d66e5bfd.aspx(last visited Apr. 15, 2012).

3 Kenneth Abbott & Duncan Snidal, *Strengthening International Regulation through Transnational New Governance: Overcoming the Orchestration Deficit*, 42 Vand. J. Transnat'l L. 501, 520 (2009); *see also* Tim Büthe, *Private Regulation in the Global Economy: A (P)Review*, 12 Bus. & Pol. 1, 3 (2010); David Vogel, *Private Global Business Regulation,* 11 Annu. Rev. Polit. Science 261, 264 (2007).

4 G.A. Res 42/187, ¶1, U.N. Doc. A/RES/42/187 (Dec. 11, 1987).

5 Nico Schrijver, The Evolution of Sustainable Development in International Law: Inception, Meaning and Status 66 (2008) (emphasis added).

6 *Id.*

7 Robert M. Solow, "*A Contribution to the Theory of Economic Growth*," 70 Q.J. Econ. 65, 67 (1956).

8 Christopher Wright, *Setting Standards for Responsible Banking: Examining the Role of the International Finance Corporation in the Emergence of the Equator Principles, in* International Organizations and Global Environmental Governance 51, 56 (F. Biermann, B. Siebenhüner & A. Schreyrogg eds., 4th ed. 2007); *see* Infrastructure Network, Discussion Paper, *Infrastructure: Lessons of the Last Two Decades of World Bank Engagement,* 2 (Jan. 30, 2006).

9 *See generally* Sanjeev Khagram, Dams and Development: Transnational Struggles for Water and Power (2004); Marc Darrow, Between Light and Shadow: The World Bank, the International Monetary Fund and International Human Rights Law (2003).

10 Miles Scott-Brown & Marcello Iocca, *Environmental Governance in Oil-Producing Developing Countries: Findings from a Survey of 32 Countries*, 17 World Bank: Extractive Industries Dev. Series 10 (2010); Robert Wade, *Greening the Bank: The Struggle Over the Environment, 1970-1995, in* The World Bank: Its First Half Century 611, 619 (Davesh Kapur, John P. Lewis & Richard Webb eds., 1997); Natalie Bridgeman & David Hunter, *Narrowing the Accountability Gap: Toward a New Foreign Investor Accountability Mechanism,* 20 Geo. Int'l. Envtl. L. Rev. 187, 190 (2008).

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Compulsory Licensing in TRIPS: Chinese and Indian Comparative Advantage in the Manufacture and Exportation of Green Technologies

*by Rishi R. Gupta**

Challengers to the United States' global influence, such as Brazil, China, and India, have criticized heavy polluters like the United States and the United Kingdom for significantly contributing to the world's total carbon emissions but failing to share its green technologies with the rest of the world.[1] Utilizing Rio+20 to redefine Article 31(b) of the World Trade Organization's Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement should create an international framework for transfer of green technology through a patent process called compulsory licensing.[2] Compulsory licensing allows a country to bypass a patent and create a generic copy of a technology by licensing it within its borders.[3]

Currently, the United States holds the largest number of patents for green technology in various sectors, including: wind, solar photovoltaic, concentrated solar power, biomass-to-electricity, and carbon capture and storage.[4] Unfortunately, given the long statutory periods provided to patent holders and the high costs of entering the green technology market, these patents effectively provide the patent holder with a twenty year monopoly.[5] Thus, this intellectual property barrier inhibits financially strapped developing countries from acquiring the newest and most effective technologies, preventing them from mitigating the environmental consequences of their rapid growth.[6] At the same time, China and India have a comparative advantage in the manufacturing of green technologies over companies in the United States and are able to produce these technologies at much lower costs.[7]

While a compulsory license typically requires a country to prove that it attempted and failed to secure a voluntary license, the TRIPS agreement waives this requirement in cases of national emergency, circumstances of extreme urgency, or for public non-commercial use.[8] Specifically, the WTO should use Rio+20 to recognize that greenhouse gas emissions are a circumstance of "extreme urgency."[9] In 2003 at Doha, the WTO extended compulsory licenses to the exportation of pharmaceuticals, allowing a country with the requisite manufacturing capacity to obtain a compulsory license to manufacture pharmaceutical products that alleviate public health problems.[10] Brazil and Thailand have used the WTO's 2003 decision to spread cheaper AIDS medication and put pressure on patent holders to decrease their prices.[11] This manufacturing and exportation model of compulsory licensing could be similarly employed in countries like China and India for transfer and dissemination of green technology.[12]

However, this type of compulsory licensing is often criticized because of its potential harm to economic growth in patent holding countries and the expansion of future green technologies.[13] Critics argue that strong patents reward patent holders for their innovations, thereby incentivizing future innovations in green technology.[14] These enforceable patents are generally regarded as necessary to guarantee profits for the patent holder.[15] Some of this impact would be mitigated, however, because compulsory licensing requires that the licensor pay the patent holder adequate remuneration, which typically takes the form of royalties.[16] Moreover, the need for compulsory licenses usually arises in countries where the patent holder has chosen not to make its green technology available, so there is not a significant loss in either profits or incentives to innovate because these countries were already shut out of the market.[17]

Beyond economics, the environmental impact of compulsory green technology licenses in China and India would be extremely positive for the entire globe. Primarily, technology transfer through compulsory licensing would speed up global green technology development by allowing companies in China and India to begin innovating and improving on currently held patents without having to wait the full twenty years.[18] Indeed, by impeding research and development in China and India, the current intellectual property regime severely limits the possibility of follow-on innovations that could lead to further breakthroughs in the field.[19]

The proliferation of advanced green technologies in the economically developing countries of China, the world's largest emitter of greenhouse gas emissions, and India, the fourth largest emitter, would be felt immediately. [20] Other developing countries could attain greater means to reduce their emissions because compulsory licensing would significantly reduce high start-up costs by allowing China and India to manufacture significantly cheaper green technologies.[21] Smaller, developing countries would also see a significant decrease in the cost of green technology due to China and India's cheaper manufacturing capabilities in wind and solar energy. [22]

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International Investment Law and Arbitration, Sustainable Development, and Rio+20: Improving Corporate Institutional And State Governance

*by Perry E. Wallace**

Introduction

The 2012 United Nations Conference on Sustainable Development ("Rio+20") will provide "a historic opportunity to define pathways to a safer, more equitable, cleaner, greener and more prosperous world for all."[1] Rio+20 comes twenty years after the 1992 Earth Summit in Rio, where participating governments agreed to several historic accords to promote a more sustainable environment.[2] Subsequent conferences followed suit with more accords aimed at improving and augmenting preceding commitments.[3]

One of the most important documents that resulted from the 1992 Earth Summit was Agenda 21,[4] a planning-oriented framework on redefining economic growth while also promoting social equity and ensuring environmental protections.[5] The United Nations ("UN") has affirmed and seeks to expand upon this and similar accords in pursuing its action plan for Rio+20.[6] Reflecting upon these past efforts, participants at Rio+20 should come to the conference wiser than ever in planning to meet the challenges of sustainable development, which is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[7] Most commentators agree that although some of these steps in sustainable development have been "deeply inspiring examples of progress," they have also faced setbacks due to challenges such as food insecurity, biodiversity loss, and climate change.[8] Rio+20 seeks to improve this record by creating a consensus among international governments and institutions on ways to reduce poverty, promote sustainable jobs, clean energy, and create an equitable distribution of resources.[9]

International investment law and arbitration are increasingly the source of major decisions about national and regional development policies and practices. Consequentially, emerging institutions in this field can enable activities that have impacts on the economic, social, political, and environmental well being of communities around the world. Not surprisingly, developing countries and emerging economies, because of their circumstances and needs, tend to experience the greatest amount and intensity of these impacts. At the same time, however, these nations may also be least able (or inclined, as the case may be) to strike a just balance and array of benefits and burdens of development in their investment agreements with other nations and with corporate partners. Significantly, this calculus lies at the heart of the sustainable development concept.

For these reasons, the major actors and institutions in this arena should be brought together at the Rio+20 conference for purposes of "secur[ing] … [their] political commitment for sustainable development, reviewing progress and remaining implementation gaps and assessing new and emerging challenges."[10] This article examines the status of international investment law and arbitration in the framework and dynamics of sustainable global development. Specifically, the article highlights the interrelationship of sustainable development and investment, the challenges and threats posed to sustainable development by international investment law and arbitration, and recommends key issues for discussion at Rio+20. A useful start would be to make international investment law and arbitration one of the topics for discussion at the June "Corporate Sustainability Forum" meetings.[11] This Forum, which is a collaborative effort intended to enhance the progress made at the actual Rio+20 conference,[12] presents the proverbial "golden opportunity." Given the dominant role that business and industry play in the world's development activities, in particular through international investment law and arbitration, other actors such as national governments and non-governmental organizations should be and will be present be at the table in these discussions and planning regarding sustainability.[13] With this beginning step, investment law and arbitration could become part of a very important process in international environmental governance, one promising significant benefits from the intelligent, committed exploration and planning for sustainable development that will take place at Rio+20.

Sustainable Development and the Role and Impact of Investment

In charting a path toward agreement, the UN has identified the conference's objective as "secur[ing] renewed political commitment for sustainable development, reviewing progress and remaining implementation gaps and assessing new and emerging challenges."[14] This objective will be pursued "through the

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lenses" of the conference's two themes: 1) a green economy in the context of sustainable development and poverty eradication; and 2) the institutional framework for sustainable development.[15] Achieving the objective of Rio+20 through these two themes will require the concerted and collaborative efforts of all stakeholders in a well-functioning, sustainable world. In addition to national governments, the UN has also identified "major groups" that comprise particularly important stakeholders.[16] These major groups include "women, children and youth, indigenous peoples, non-governmental organisations, local authorities, workers and trade unions, business and industry, the scientific and technological community, and farmers."[17] In focusing on the role of business and industry in promoting this initiative, the UN recognizes that the private sector plays an important role in moving towards sustainable development, specifically in building a green economy and to eradicating poverty.[18]

The UN has also recognized that investments by business and industry are fundamental to sustainable development. For example, Agenda 21 describes the central role of international investments in providing financial assistance for developing countries:

> Investment is critical to the ability of developing countries to achieve needed economic growth to improve the welfare of their populations and to meet their basic needs in a sustainable manner …Sustainable development requires increased investment, for which domestic and external financial resources are needed.[19]

While the pivotal role of investment in fueling development is generally well established, modern (particularly post-Earth Summit) formulations of this basic precept often invoke some expanded notion of "sustainability." This includes pronouncements by such august bodies as the 2002 World Summit on Sustainable Development in its Johannesburg Plan of Implementation (seeking "an enabling environment for investment");[20] the G8 Heads of State 2009 declaration Responsible Leadership for a Sustainable Future ("[F]oreign direct investments …represent an important source of financing and a driver of [sustainable] economic growth and integration"); and the 2009 G20 Heads of State declaration on Core Values for Sustainable Economic Activity ("We … are partners in building a sustainable and balanced global economy in which the benefits of economic growth are broadly and equitably shared.").[21] Thus, the "hard" and "soft" law and policy of sustainability have been rather thoroughly established and accepted.[22]

In contrast to sustainable development law and policy, however, investment law and policy have not been as solicitous to the notion of sustainable development. The general consensus is that foreign direct investment is necessary for sustainable development.[23] However, considerable work remains to guarantee that the current regulatory framework for international investment law properly promotes sustainable development.[24] As commentators point out:

> [I]n international investment law, sustainable development remains challenging to implement. The challenge is to ensure that new international and domestic rules that are being developed to encourage investment by providing additional protection for investors from capital exporting States also provide sufficient policy flexibility and incentives to encourage sustainability.[25]

As noted above, there has been some difficulty in bringing the policies and practices of sustainability and investment law (including arbitration) together.[26] The next section describes the rationale and structure of investment law and the section after that one elaborates on this problem.

Investment Law and Arbitration; Rationale and Structure

Foreign investment, in some form or another, "likely dates back to the days of the pharaohs in Egypt with investment being made by the state itself or by merchants from Egypt, Phoenicia and Greece in other countries."[27] Its historical course parallels that of the history of many civilizations, great and small, and has often been a fateful element in those histories.[28] Fast forward to modern foreign direct investment (FDI) in the mid-nineteenth century, two significant phenomena revolutionized methods of raising and spending capital: rapid technological invention and the growth of major corporations.[29]

Thus enabled, foreign companies and their investments boomed and began contributing to expansive economic growth and development around the world, including the finance, construction, and operation of large infrastructure projects. As this happened, conflicts frequently arose between investors and either host countries or other internal political forces.[30] Often these major undertakings were interdependent with the welfare and security of the host country and its citizens, and this at times sparked nationalist concerns about the dangers of foreign control.[31] Expropriation and other forms of interference with investments became a major problem. However, the traditional remedies have proven woefully inadequate, namely resort to national courts, diplomatic protection, and military force.[32]

In the great series of initiatives and attempts to develop solutions to global investment conflicts, international treaties and contracts providing for specific relevant protections have emerged as one of the better alternatives, such as dispute resolution by an independent body. Investment treaties include thousands of bilateral investment treaties ("BITs") and investment chapters in broader trade and economic cooperation accords, began to appear. Numerous well-known frameworks for foreign investment protection and arbitration of disputes have emerged by the 1990s. They include:

- BITs between nations;
- World Bank Convention on the Settlement of Investment Disputes between States and Nationals of Other States ("ICSID" Convention or "Washington Convention");
- International Chamber of Commerce, International Court of Arbitration, Rules of Arbitration;

- International Centre for Dispute Resolution ("American Arbitration Association");
- United Nations Commission on International Trade ("UNCITRAL") Model Law on International Commercial Arbitration and UNCITRAL Arbitration Rules;
- North American Free Trade Agreement ("NAFTA");
- Energy Charter Treaty ("ECT");
- Asia-Pacific Economic Cooperation ("APEC") Non-Binding Investment Principles; and
- Association of Southeast Asian Nation ("ASEAN") Framework Agreement on the ASEAN Investment Area.

While investment treaties differ in their specific terms, there are certain core provisions that are common to most of them. The following are core commitments that host countries and foreign investors tend to agree to:

- Fair and equitable treatment/ minimum standard of treatment;
- Full protection and security;
- Compensation in case of direct or indirect expropriation;
- National treatment (treatment no less favorable than that given to domestic investors);
- Most-favored nation treatment (treatment no less favorable than that given to investors from other countries);
- Freedom from "performance requirements" as a condition of entry or operation (e.g., requirements to transfer technology, to export a portion of production, or to purchase inputs domestically);
- Free transfer of capital;
- A blanket obligation, or "umbrella clause," to respect any legal or contractual obligations it may have to the investor; and
- The right to bring arbitration claims against the host country.[33]

A number of the these protections afforded investors in investment law, as well as certain aspects of international investment arbitration, have at times created tensions and conflicts for attainment of sustainable development. The next section analyzes the challenges posed by these rights that directly affect implementation of sustainable development policies and principles.

Investment Law and Arbitration: Challenges to Sustainable Development

Fair and Equitable Treatment/Minimum Standard of Treatment

The fair and equitable treatment provision is as prominent as it is controversial in investment agreements. It has been called a "catch-all" clause, not only because of its breadth but also because it has often been invoked as the basis of claims where expropriation, non-discrimination, and other claims could not fairly be advanced.[34] Its broad and opaque language has resulted arbitral tribunals rendering differing interpretations of its scope and applicability.[35]

One example of an interpretation applying a strict, high standard for host countries can be found in *Tecmed vs. Mexico*.[36] There, the arbitral panel stated that a host country must conduct itself in such a manner as to "not affect the basic expectations that were taken into account by the foreign investor to make the investment" and that is consistent, "free from ambiguity[,] and totally transparent."[37] On the other hand, various panels appear to have endorsed a somewhat different standard for this concept. UNCITRAL opined that the standard should not be applied in a way that imposes "inappropriate and unrealistic" obligations on the host country, and that investor expectations should be reasonable and legitimate "in light of the circumstances prevailing in the host country."[38]

From a sustainable development perspective, the fair and equitable treatment clause and the decisions interpreting it have created uncertainty about how states should apply the concept and about what would be the outcome of a potential arbitral claim. Indeed, states fear that the clause "could act as a black box within which [investment agreements] might contain unwanted surprises."[39] To the extent a more strict, *Tecmed*-like standard applies, developing countries might not have the financial, technical, and human resources to comply since their regulatory regimes are, essentially, works-in-progress.[40] Furthermore, the true worry is that the specter of a hefty arbitral award against it might have a chilling effect on the healthy evolution of that country's regulatory evolution — particularly to the extent it seeks to protect environmental and other similar values in the public interest.[41]

Some progress has been made in addressing these concerns regarding the fair and equitable treatment clause. For example, several countries have chosen not to include the clause at all, as exemplified in the investment chapter of the trade agreement between Singapore and India.[42] Others have sought to align its interpretation with that of the customary international law "minimum standard" for the treatment of aliens, which sets a basic floor for country conduct.[43] Unfortunately, these measures have hardly served to add true clarity and certainty to the matter. Therefore, the challenges for host countries — and for sustainable development — continue as there is no definite framework to guide their conduct.

Expropriation

States may legally take possession and ownership of property lying within their jurisdiction under certain circumstances.[44] Historically, the taking of an investor's property by a host country was one of the main reasons for the creation of protective investment regimes.[45] The central issue in these cases is whether the state has "expropriated" the property such that it must compensate the investor for the taking.[46]

Although some investment treaties do not make this distinction, expropriations can be classified as "direct" and "indirect."[47] Direct expropriation takes the form of a physical taking of ownership of property (such as the nationalization of a company by a state), whereas indirect (including regulatory) expropriation, usually referring to a state's interference in one's enjoyment of the benefits of property even without a physical taking, is a more complex and elusive concept.[48] The definition and scope of indirect expropriation is important to achievement of sustainable development. Thus, where the state engages in regulatory

activity to protect the environment or the public welfare, that state may well implement its laws much more restrictively under a broad definition of indirect expropriation.[49] That is, the threat and expense of an expropriation could diminish the political will of the state to regulate assertively.[50]

Tribunals have applied different methods in analyzing the applicability of the indirect expropriation concept. For example, the "sole effect" approach looks at the end result of the government's measure on the investor and *not* at the purpose for which the measure was intended.[51] An example of this approach can be found in the case *Waste Management v. United Mexican States,*[52] where the arbitral tribunal rejected a claim of expropriation by a waste disposal services company based on the reasoning that the "effect" of governmental action was not to cause an indirect expropriation.[53] Notwithstanding that particular outcome, however, it could be problematic from a sustainable development standpoint to have a test that does not allow consideration of a governmental purpose for expropriation, which could include environmental regulation.[54] Thus circumstances where the "sole effect" test is applied can constrict a government's ability to promote beneficial environmental regulation.

The "purpose" or "proportionality" approach requires a comparison of the benefits of a government's expropriation action with the negative impact, or burden, on the investor. For example, in the *Tecmed* case, the tribunal determined that purpose of a governmental denial of a hazardous waste facility license (which was ostensibly for environmental protection purposes but was actually due to social and political pressures) outweighed the burden on the investor, and ordered Tecmed to completely shut down the plant.[55] This is in contrast with *Metalclad Corporation v. United Mexican States,* where the arbitral tribunal found that Mexico had, through the environmental regulatory acts of a local municipality, effectively expropriated the property of a U.S. investor that had secured all required permits from Mexican federal authorities to construct and operate a hazardous waste facility.[56] Ironically, although the parties all agreed that the "purposes" test would apply, the tribunal completely ignored this mutual agreement, stating that it "need not decide or consider the motivation or intent of the adoption of the Ecological Decree."[57]

Another concept that may come into play in regulatory expropriation cases is that of "police powers." In *Methanex v. United States,* an executive order by the governor of California required that gasoline additive methyl tertiary butyl ether ("MTBE") be removed from gasoline by the end of 2002.[58] Methanex was the Canadian parent of a U.S. subsidiary and a producer of MTBE.[59] Methanex commenced an arbitration proceeding against the United States on July 2, 1999, charging that this order and related measures were tantamount to an expropriation of that investment under Article 1110 of NAFTA.[60] The tribunal rejected Methanex's claim and provided the following explanation:

> [A]s a matter of general international law, a non-discriminatory regulation for a public purpose, which is enacted in accordance with due process and, which affects, inter alia, a foreign investor or investment is not deemed expropriatory and compensable unless specific commitments had been given by the regulating government to the then putative foreign investor contemplating investment that the government would refrain from such regulation.[61]

Thus, the police powers "carve-out" holds some promise as a basis for defending sustainable development regulatory measures.[62] However, much of the implementation of this carve-out depends on the nature of the facts and the government's approach to regulation. Obviously, sound policies that are fairly applied are more likely to yield positive results in the event of a challenge. These would be particularly important elements, given the relatively difficult task of defining what is an indirect expropriation.

It is worth noting that some countries have restricted the scope of this concept and provided factors to be considered in determining the existence of indirect expropriation. Prominent examples are the Canadian and American Model Acts; the 2009 ASEAN Comprehensive Investment Agreement); the 2007 Investment Agreement for the COMESA Common Investment Area ("COMESA CCIA"); the 2008 Austrian Model Investment Treaty and subsequent treaties that have imitated them.[63] These are examples that not only improve the law generally, but reflect some willingness on the part of states to provide at least for the possibility of progressive sustainable development measures.

National Treatment

At first blush, the national treatment obligation for host countries to treat domestic and foreign investors the same seems rather simple and direct. A typical example is Article 3 of the 2004 U.S. Model Bilateral Investment Treaty:

> Article 3: National Treatment
>
> 1. Each Party shall accord to investors of the other Party treatment no less favorable than that it accords, in like circumstances, to its own investors with respect to the establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments in its territory.[64]

This non-discrimination provision, however, is more complex than might appear. Among other things, the determination of what are "like circumstances" can vary. Such a determination is important because it directly bears on how free governments are to differentiate between foreign and domestic entities.[65] For example, a broad interpretation of the term allows a tribunal to consider the circumstances of more foreign and domestic investors to be "like," and thus captures a broader variety of regulations with which to take issue.[66] This broad interpretation, however, would limit a state's ability to apply different rules to foreign companies — perhaps even if the difference is

grounded in a legitimate public purpose.[67] Thus, some commentators have expressed the concern that:

> [A] distinct leaning towards expansive interpretations has been detected within the reasoning of arbitral awards in investor-State disputes, the effect of which is to create standards of protection that go well beyond shielding investors from arbitrary or bad conduct, and instead operate as a form of insurance against the impact of future legitimate public welfare regulation.[68]

In the arbitral partial award of *S.D. Myers, Inc. v. Canada*, the tribunal observed that the "phrase 'like circumstances' is open to a wide variety of interpretations in the abstract and in the context of a particular dispute."[69] There, the tribunal found that Canada had violated its national treatment obligations under the investment chapter of NAFTA (or "Article 1102") when it made certain decisions purportedly to protect the environment.[70] The American company claimant, SDMI, had established a subsidiary in Canada to export a certain hazardous waste product ("PCBs") into the United States for remediation at its Ohio facilities.[71] SDMI enjoyed a competitive advantage over both American and Canadian competition because of its low prices and expertise.[72]

Although the tribunal's decision in favor of the American investor was disappointing to environmentalists, the case may have a few positive features. The tribunal was fully willing to consider a wide range of pertinent elements and policies — including a favorable embrace of the NAFTA environmental "side agreement" and other relevant environmental measures — and not merely a more narrow range of just commercial considerations.[73] Even in the absence of a *stare decisis* principle in arbitration, the tribunal's willingness to acknowledge such a range of considerations should be noted for further efforts to encourage greater awareness and inclusion of such an approach in future arbitral deliberations.[74]

Additionally, one should consider other factors that may have tipped the balance in favor of the investor, such as the dealings between the principal Canadian competitor and the Canadian government as well as the particular way the government handled this matter.[75] Looking at those facts, one could reasonably query whether the tribunal members may have discerned some impropriety — or perhaps even collusive behavior that suggested discrimination. Canada, in fact, may have come within the prescription of *Pope & Talbot v. Canada*, which stated that a government's differential treatment violates its national treatment obligation, unless it established a rational nexus between this treatment and government policies that do not discriminate between foreign or domestic companies or violate the spirit and objectives of NAFTA.[76]

The point for consideration here is whether some aspects of *S.D. Myers* provide any insight in its analysis that, on a more favorable set of facts and circumstances, a court might yield a decision more supportive of sustainable development. In light of some of the difficulties inherent in the analysis of national treatment provisions, some countries have specifically inserted relevant reservations and limitations in their treaties. This includes such approaches as placing exceptions allowing more favorable treatment for certain persons, groups, or industries.[77] The potential benefit of this approach is that the deliberative process for consideration of it would be *open and democratic* — more so than an arbitral proceeding,[78] thus providing opportunities for public participation and advocacy — again, more so than exists in an arbitral proceeding.

Most-Favored Nation Treatment

Like national treatment, most-favored nation ("MFN") treatment is a non-discrimination obligation, although a MFN obligation applies to prevent more favorable treatment to other foreign states and their investors. This is an example of such a provision taken from the investment chapter ("Chapter 10") of the Dominican Republic-Central America-United States Free Trade Agreement:

> **Article 10.4: Most-Favored-Nation Treatment**
>
> 1. Each Party shall accord to investors of another Party treatment no less favorable than that it accords, in like circumstances, to investors of any other Party or of any non-Party with respect to the establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments in its territory.[79]

Like national treatment, the "like circumstances" language in the MFN obligation not only provides a qualifying effect but also introduces interpretive challenges. One of the most recent challenges in the MFN investment area is the phenomenon whereby investors may seek to "import" rights against host states based on *other* investment treaties.[80] Perhaps the best-known case is *Maffezini v. Spain,* in which the tribunal allowed an Argentinean investor claimant, based on the MFN clause of the Spain-Argentina BIT, to avail himself of dispute resolution provision of the Spain-Chile BIT.[81] The *Maffezini* decision, as well as others like it, has been the source of some concern. This practice of "cherry-picking" arbitration rights is seen by some as distorting the treaty negotiation process and introducing much greater uncertainty in the obligations host countries owe to investors.[82] For this reason, a number of tribunals have rejected investor requests for similar treatment.[83] Some states have taken steps to preclude the practice, in some instances by excluding MFN clauses entirely, and in others by drafting in specific exceptions or limitations.[84]

Performance Requirements

Host countries attach performance requirements as a pre-condition to a business's establishment, operation, or enjoyment of an opportunity or privilege to invest in a host state. Performance requirements can also be offered as significant incentives rather than as mandatory obligations.[85] They may relate to sales, production, percentage of ownership by host nationals, transfer of technology, domestic purchases, local hiring, etc.[86] Structurally, investment treaties take varying

approaches to incorporating performance requirements, such as not mentioning them in some instances or specifically addressing them in others.[87] While most treaties do not mention this topic, member states of the World Trade Organization (WTO) do include performance requirements and are limited by the structures that the WTO Agreement on Trade-Related Investment Measures (TRIMS) imposes on a number of types of performance requirements.[88]

Notwithstanding TRIMS, states have the legal right to strike a wide range of bargains, such as affirming the applicability of TRIMS, rejecting some or all of its strictures, or even adding to them.[89] From a sustainable development perspective, a state that preserved its right in an investment treaty to require the transfer of technology can avail itself of the kinds of environmental technology that would accelerate its progress in attaining sustainable development goals.[90] This perspective also applies to various other relevant standards, such as those concerning research and development.[91]

Umbrella Clauses, Stabilization Clauses, and Their Interplay

To understand the umbrella clause, it is useful to pose this question: can an investor, in arbitration proceedings brought based on the terms of an *investment treaty*, also make claims for violations of a specific *investment contract*? The following is an example of an umbrella clause, taken from the US-Argentina Treaty: "Each Party shall observe any obligation it may have entered into with regard to investments."[92]

Tribunals have answered the question in various ways, ranging from limited acceptance of the right to make a contract claim only upon clear and convincing evidence of mutual consent in the contract to do so, to a broader acceptance of the of the contract claim itself as transformed into a treaty claim.[93] Importantly, however an umbrella clause may come to be included in treaty arbitration, it may have considerable implications.[94] An umbrella clause provides an investor the estimable machinery of international investment arbitration to enforce contract claims, which might themselves obligate the state under a range of domestic legislative, contractual, and treaty measures.[95] This can cut both ways for sustainable development purposes. Whether such a clause expands or contracts the public space available for a state to promote sustainable development depends directly on what obligations and duties are incorporated through that clause.

Stabilization clauses in investment contracts may (1) "freeze" the law of a host state throughout the duration of a contract; (2) provide for "economic equilibrium" by requiring investors to comply with new laws, but providing compensation for compliance costs; or (3) include some "hybrid" form of the first two.[96] Obviously, such a clause could thwart the evolution of environmental and other sustainable development regulations. Further, in regard to actual treaty rights, stabilization clauses could alter or diminish the police powers of the state to regulate and help frame, and thus weaken, the "legitimate expectations" that undergird the fair and equitable treatment obligation.[97] Finally, the combination of umbrella and stabilization clauses poses a particular concern for any true progress in achieving sustainable development.

International Investment Arbitration

International investment arbitration is crucial to investment treaty and contract regimes, as arbitral tribunals resolve disputes and questions between states and investors about the applicability of those investment measures. Given the significant nature of the kinds of projects involved, their interrelation with the governance of the host countries involved, as well as the numerous challenges posed to efficacious interpretation of treaty provisions as discussed herein, one can begin to appreciate the gravity of the tasks placed before the arbitrators in these disputes.

Notwithstanding the challenges that inhere in the investment treaties and contracts themselves, international investment arbitration itself has given rise to significant questions and controversies. The following list identifies major areas of concern and criticism, particularly as raised by advocates in the environmental and human rights communities:

- Exclusion of preliminary requirements to exhaust local remedies, while avoiding potential problems of unfairness to the investor, diminishes valuable opportunities for the development and nurturing of legal institutions and the rule of law, particularly in developing countries;[98]
- Arbitrators may have "perverse incentives' to encourage arbitrations and conflicts of interest that compromise their judgments and decisions;
- They may be tempted to encourage investor claims, for example, by deciding overwhelmingly in favor of investors or by broadly interpreting their jurisdiction to make claims;
- They often serve as arbitrators in some cases and legal counsel in other cases (and their law firms may specialize in arbitration matters)[99]
- The parties to the arbitration typically each choose one arbitrator, raising questions about arbitrator impartiality and independence;[100]
- The mechanisms for choosing arbitrators has resulted in an elite and narrow coterie of persons, and the lack of diversity — whether of gender, ethnicity, geography, culture, ideology or race — impairs their ability to decide cases properly and justly in an increasingly complex world with increasingly myriad stakeholders in the outcome of arbitral cases;[101]
- There are limited mechanisms for challenging arbitral awards, and often errors of law or fact cannot be corrected;[102]
- Arbitral decisions can be highly inconsistent, and there is no binding rule of precedent or meaningful appeals process to lend consistency to them;[103]
- Access to information about arbitrations is typically limited, and much information is unavailable to the public;[104]
- Public participation in arbitrations is very limited, usually being confined to the acceptance of *amicus curiae* briefs by outside parties. The limitation is most consequential where a host state lacks the political will to act properly in the public interest, yields to the often-superior "bargaining power" of a more powerful state or company, or is simply corrupt.[105]

While this list does not purport to be exhaustive, it provides a sense of the tone of the growing debate about the nature and effects of international arbitration. Advocates of sustainable development and other causes seeking social and economic justice are active participants in that debate.

Conclusion

The Corporate Sustainability Forum is being held in conjunction with Rio+20, and its objectives are to strengthen the business contribution to sustainable development globally — seeking to bring greater scale to responsible business practices, to advance and diffuse sustainable innovation, and to stimulate broader collaboration between companies, governments, civil society and the UN.[106]

This article has discussed the dynamics between sustainable development and international investment law and arbitration. Modern phenomena, including the powerful march of economic globalization, have vested international law and arbitration with unprecedented power to affect and shape international development. If that development is to be "sustainable," it will not happen by accident, or by continued isolation of the stakeholders in their own worlds, but through concerted, collaborative action by all affected interests. Beginning with participation in the Corporate Sustainability Forum, and continuing into Rio+20, those responsible for the creation and implementation of these investment institutions should grasp this special opportunity to address and overcome challenges, including those presented in this article.

Endnotes: International Investment Law and Arbitration, Sustainable Development, and Rio+20: Improving Corporate Institutional and State Governance

1 *See* United Nations, The Future We Want 5 (Sept. 2011), http://www.un.org/en/sustainablefuture/pdf/conf_brochure.pdf.

2 *See* United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3-14, 1992, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), Annex I (Aug. 12, 1992), http://www.unesco.org/education/information/nfsunesco/pdf/RIO_E.PDF.

3 *See* United Nations, *The History of Sustainable Development in the United Nations*, UNCSD2012.org (2011), http://www.uncsd2012.org/rio20/history.html (setting out UN sustainable development initiatives and accords occurring both before and after the Earth Summit).

4 International Union For Conservation of Nature and Natural Resources Commission on Environmental Law, Agenda 21: Earth's Action Plan §38.1 (Nicholas A. Robinson ed., 1993), http://www.un.org/esa/sustdev/documents/agenda21/english/Agenda21.pdf (hereinafter AGENDA 21].

5 The Future We Want at 2.

6 United Nations, *The Future We Want — zero draft of the outcome document*, http://www.uncsd2012.org/rio20/futurewewant.html [hereinafter *Zero Draft*].

7 U.N. World Comm'n on Env't & Dev., *Report of the World Commission on Environment and Development: Our Common Future*; *Annex 1: Summary of Proposed Legal Principles for Environmental Protection and Sustainable Development Adopted by the WCED Experts on Group Environmental Law*, U.N. Doc. A/42/427 (Aug. 4, 1987), http://www.un-documents.net/a42-427.htm.

8 *See Zero Draft, supra* note 5, at ¶10-16; Implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the outcomes of the World Summit on Sustainable Development, G.A. Res. 64/236, U.N. Doc. A/RES/64/236 (Mar. 31, 2010), http://www.uncsd2012.org/files/OD/ARES64236E.pdf.

9 *Id*. at 2.

10 U.N. Secretary General, *Objectives and Themes of the United Nations Conference on Sustainable Development*, p.3, U.N. Doc. A/CONF.216/PC/7 (Dec. 22, 2010), http://www.uncsd2012.org/rio20/content/documents/N1070657.pdf.

11 *Innovation and Collaboration for the Future We Want*, Rio+20 Corporate Sustainability Forum, http://csf.compact4rio.org/events/rio-20-corporate-sustainability-forum/custom-125-251b87a2deaa4e56a3e00ca1d66e5bfd.aspx (last visited Apr. 18, 2012).

12 *See* United Nations Global Compact, *Corporate Sustainability Forum*, Rio+ Corporate Sustainability Forum, http://csf.compact4rio.org/events/rio-20-corporate-sustainability-forum/custom-121-251b87a2deaa4e56a3e00ca1d66e5bfd.aspx (last visited May 10, 2012) ("With over 2,000 expected participants, the Rio+20 Corporate Sustainability Forum will give business and investors an opportunity to meet with governments, local authorities, civil society and UN entities in dozens of highly focused workshops and thematic sessions linked to the Rio+20 agenda.").

13 Markus Gehring & Andrew Newcombe, *An Introduction to Sustainable Development in World Investment Law*, *in* Sustainable Development in World Investment Law 6, 9 (Marie-Claire Cordonier Segger, Markus W. Gehring, & Andrew Newcombe eds., 2011).

14 U.N. Secretary General, *Objectives and Themes of the United Nations Conference on Sustainable Development*, p.3, U.N. Doc. A/CONF.216/PC/7 (Dec. 22, 2010), http://www.un-documents.net/ ocf-a1.htm [hereinafter *Our Common Future*].

15 *Id.*

16 *Zero Draft, supra* note 5, at ¶17-20.

17 *Id.* at ¶17.

18 *Id.* at ¶19.

19 Agenda 21, *supra* note 4, at ¶2.23.

20 Plan of Implementation of the World Summit on Sustainable Development, Sept. 4, 2002, U.N. Doc. A/Conf.199/20, Annex I, Ch. XI, http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf.

21 G8 Ministers, Responsible Leadership for a Sustainable Future ¶49 (2009), http://www.g8italia2009.it/static/G8_Allegato/G8_Declaration_08_07_09_final,0.pdf; G20 Heads of State, Core Values for Sustainable Economic Activity (2009), http://www.reuters.com/article/2009/09/25/us-g20-communique-annex-sb-idUSTRE58O6W520090925.

22 Marie-Claire Cordonier Segger, *The Role of International Forums in the Advancement of Sustainable Developmen*t, Sustainable Dev. L. & Pol'y, Fall 2009, at 4.

23 Markus Gehring & Andrew Newcombe, *supra* note 9.

24 *Id.*

25 *Id.* at 6.

26 *Id.*

27 *A Brief History of Foreign Investment*, *in* Foreign Investment Disputes 2 (R. Doak Bishop, James Crawford, & W. Michael Reisman eds., 2005).

28 *Id.*

29 *Id.*

30 *Id.*

31 *Id.*

32 *Id.* at 3.

33 Nathalie Bernasconi-Osterwalder et al., *Investment Treatment Treaties & Why They Matter to Sustainable Development*, International Institute for Sustainable Development (2012), http://www.iisd.org/pdf/2011/investment_treaties_why_they_matter_sd.pdf [hereinafter IISD].

34 *Id.* at 17.

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Sustainable Development and the Legal Protection of the Environment in Europe

*by Luis A. Avilés**

Sustainable development has gained considerable attention from environmental and supranational organizations, including the United Nations and the European Union ("EU"), since the concept was first discussed in the mid 1970s[1] and then defined by the United Nations as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[2] Environmentalists hoped for a shift in policy and lawmaking that would balance present and future needs by accounting for environmental externalities resulting from economic development.[3] They also hoped that the concept of sustainable development would spawn legal rules and principles that would resolve legal disputes without sacrificing the interests of either the environment or development.[4] This hope has yet to materialize and environmentalists now think sustainable development has become a euphemism for naked development.[5] This article traces the adoption of sustainable development principles by the United Nations in the 1992 Rio Declaration and by the European Community and the European Union. Specifically, the article analyzes the concept of sustainable development under the primary and secondary law along with its treatment in the Court of Justice of the European Union ("CJEU"). The review illustrates that sustainable development has become a general principle in the European legal order, incorporated into the field of environmental protection via a set of sub-principles. The European legislature and the CJEU could further strengthen these principles by striking a balance between economic development and environmental protection, the dual underpinnings of sustainable development.

Sustainable Development: From Stockholm 1972 to Rio 1992

Sustainable development has eluded concrete definition since its inception. Nonetheless, its importance is evident from its inclusion by the United Nations in the Stockholm Declaration on the Human Environment and in the establishment of the World Commission on Environment and Development ("CED").[6] In 1987, the CED issued a report entitled *Our Common Future* (also known as the "Brundtland Report"), recommending "sustainable development" as a perspective for addressing the relationship between economic development, the environment, and the divide between rich and poor countries.[7] Under this definition,[8] the report identified two key priorities in making sustainable development decisions: assuring the needs of the poor[9] and protecting natural resources to ensure present and future growth of civilization and technology.[10]

The United Nations 1992 Rio Declaration on Environment and Development clarified the two priorities of sustainable development. The Declaration proclaimed twenty-seven principles in the hope of forming an "equitable global partnership" among international stakeholders.[11] The first four principles are of particular importance in defining sustainable development:

> Principle 1: Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.[12]
> Principle 2: States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.[13]
> Principle 3: The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.[14]
> Principle 4: In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.[15]

In Principle 1, the word "entitled" could be understood as part of the State's duty or positive obligation to protect the human right to health and life. Principle 2 articulates a "good neighbor policy," recognizing the State's sovereign right to exploit its natural resources, while also imposing a responsibility to ensure that this exploitation does not damage other States. Principle 3 limits the State's development right with an inter-generational equitable duty to balance current needs with the needs of future generations. Finally, Principle 4 integrates environmental protection and development into a single process, insinuating the necessity for environmental regulation at all steps — from planning to execution — in the development process.

The Community of Nations' announcement of these principles led to immense debate[16] among policy makers considering international cooperation, human rights, trade, economics,[17] and urban and strategic planning.[18] As a result, policy makers have been unsuccessful in adopting sustainable development principles, even when balancing development and environmental

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concerns appears logical.[19] Translating ideology into practice is not an easy task.[20]

Sustainable Development: Policy Goal, Legal Principle, or Legal Rule?

Any modern discussion about the difference between legal rules and legal principles ought to consider the ideas of legal philosopher Ronald Dworkin. According to Dworkin, rules are "applicable in an all-or-nothing fashion"[21] while principles have "the dimension of weight or importance."[22] Furthermore, a principle is "a standard to be observed, not because it will advance or secure an economic, political, or social situation, but because it is a requirement of justice or fairness or some other dimension of morality."[23] Judges use legal principles to justify their reasoning when deciding a case and these principles are always weighed against other principles.[24] Policy, on the other hand is a "kind of standard that sets out the goals to be reached, generally an improvement in some economic, political, or social feature of the community."[25] While courts use legal principals to weigh their decisions, the development of policies is the realm of legislatures and government agencies. Unfortunately, legal observers frequently intermingle principles and policies, resulting in confusion of the two terms.

Discussion about the "vagueness" of sustainable development and its inability to produce tangible results has been attributed to: 1) failure to strike a concrete balance among principles and policies when applied to actual situations, and 2) the difficulty of deriving legal norms or legal rules that create duties or obligations subject to review by courts.[26] Regarding the first observation, author J.B. Ruhl rejects the either-or dichotomy between developers (whom he calls "resourcists") and environmentalists arguing that a third variable, social equity must be included in the sustainable development decision process.[27] Social Equity, both in its geographic (local to global) and time (intra-generational and inter-generational) dimensions This third consideration is necessary to balance development with environmental concerns.[28] Hans Vedder, a frequent commentator on EU environmental law, notes that while "[e]nvironmental protection and sustainable development continue to occupy a prominent place in the objectives of the European Union . . . , [a]n issue that remains unresolved is the exact weight to be given to the various objectives where they are at odds with each other."[29]

Regarding the second observation, some scholars theorize that the integration of sustainable development and the legal system may result in three types of legal roles.[30] These roles are: 1) a standard of behavior, 2) a guiding principle that decision-makers must rely on when making decisions, and 3) a general framework under which to interpret a given law.[31] Most of the legislation aimed at achieving sustainable development utilizes the second and third roles. The main issue with making sustainable development a legal standard of behavior involves the difficulty of defining the parameters of legal behavior. As Ruhl observed, sustainable development is a balance of economic, environmental, and equity considerations.[32] However, there is no widely accepted scientific model that can formulate a standardized equation from such a multiplicity of interconnected variables whose informational quality varies considerably.[33]

Another author, John Gillroy, notes that, although sustainable development is recognized as a general principle of international law, it has little relevance in the resolution of international disputes.[34] To resolve a legal dispute, a legal principal must be recognized and capable of generating rules.[35] However, the legal principal of sustainable development is not capable of generating rules because it remains a collection of competing sub-principals.[36] According to Gillroy, instead, the legal principle of sustainable development is a meta-principle of law comprised of four substantive and four procedural sub-principles that are sometimes at odds with each other. The four substantive principles are: 1) prevention, 2) precaution, 3) the right to equitable development, and 4) the right to use internal resources so as not to harm other states.[37] Gillroy's four procedural principles are: 1) integration of environment and development, 2) concern for future generations and their welfare, 3) a common but differentiated responsibility, and 4) the polluter-pays.[38] Gillroy argues that the frequent conflict between and among the procedural and substantive principles inhibits the meta-principal of sustainable development from generating legal rules that courts may use to resolve legal disputes.[39] This is because the principles themselves are fundamentally unclear as to which should bear greater weight on a conceptual or legal scale. For instance, if precaution against environmental harm and prevention of environmental degradation are of critical importance, do these principles then place legal limits on a State's right to develop or use its internal resources? Or, if preservation for future generations is seen as the end goal of sustainable development, should there be any limitation on the polluter-pays principle or the idea that development and environmental interests can ever be integrated? These questions simply highlight the ambiguity inherent in the current state of sustainable development's definitional and legal evolution.

Given these ambiguous, and often conflicting, principles, is it fair to draw the same conclusion when the legal principle of sustainable development is applied to the resolution of disputes in a supranational court such as the Court of Justice of the European Union ("ECJ")? The next section of the article considers how the ECJ has articulated the elusive principle of sustainable development when resolving disputes under various EU treaties.

European Union's Commitment to Sustainable Development

The tumultuous evolution of environmental protection within the EU began in the 1970s with the European Commission's ("Commission") "First Communication on Environmental Policy."[40] In this policy report, the issue of whether environmental problems should be addressed at the State or community level was put forward with Member States eventually agreeing to adopt community legislative measures.[41] Just a year after the 1987 release of the Brundtland Report, the

European Council began to shift its focus from environmental protection alone by considering additional issues related to sustainable development.[42] However, almost a decade passed before the European Community incorporated sustainable development into law when the Treaty of Amsterdam promulgated the concept as an objective[43] by including the principle of a "balanced and sustainable development."[44] However, the Treaty of Amsterdam referred to sustainable development as a "general principle" but did not provide a definition of the concept.[45] Despite the lack of definition, a principle of environmental protection emerged because of the Treaty's focus on careful usage of natural resources.[46] The purpose was to balance the economic and environmental interests of present and future generations.[47] Additionally, the European Community incorporated a "high level of protection and improvement of the quality of the environment" as an objective of the Treaty.[48]

Pursuing the theme of sustainable development under the 1992 Rio Agenda, EU institutions commenced an aggressive legislative program[49] based on the Fifth Environmental Program in 1998, which aimed to "review []the European Community programme of policy and action in relation to the environment and sustainable development 'towards sustainability.'"[50] Despite high hopes for this program, the European Commission reported that little progress had been achieved since 1992.[51] However, the review found that the EU did change its focus on development from "environmental protection" to "environmental sustainability" by shifting its attention from the negative environmental impacts of using natural resources to long-range planning for sustainable use of natural resources.[52]

Following this trend, the Commission unveiled its Sixth Environmental Action Program ("6EAP") a few months before issuing the EU Rio+10 report, emphasizing the concept of "environmental sustainability" rather than "sustainable development."[53] The 6EAP encouraged the use of the "integration principle" proposed in Article 11 of the Treaty on the Functioning of the European Union (TFEU)[54] to incorporate the EU's environmental goals into the secondary legislation.[55] The 6EAP also emphasized transparency in its encouraging the public to participate in decisions effecting the environment and promoting access to environmental information.[56] However, a recent report from the European Institute for Environmental Policy draws less than optimistic conclusions on the achievements and future of the 6EAP, indicating that political forces at the Member State level may be to blame for the lack of paradigmatic changes to the legal protection of the environment since the Rio+10 report.[57] Most problematic is the delay in implementation of the "Thematic Strategies" that target environmental goals related to air, marine life, waste management, urban development, natural resources, pesticide usage, and soil.[58]

Currently, Article 3(3) of the Treaty on the European Union ("TEU")[59] mandates the establishment of an internal market based on the "sustainable development of Europe" based on three objectives: 1) balanced economic growth and price stability, 2) a highly competitive social market economy aimed at achieving full employment and social progress, and 3) "a high level of protection and improvement of the quality of the environment."[60] Thus, the historical objective of the EU — the creation of an internal market — must be accomplished incorporating sustainable development's principles of balancing economic growth in a social market economy with a high level of environmental protection. This goal marks a paradigm shift from the ordoliberal principles underlying the original Treaty of Rome.[61] Additionally, Article 3(3) defines sustainable development in the EU context by outlining the three objectives described above.[62] Article 3(3) echoes the Rio 1992 Declaration, emphasizing the conviction that a pursuit of a sustainable development strategy will work to eradicate world poverty and manage the world's natural resources.[63]

However, sustainable development is not only the paradigm for the internal market. Article 3(5) of the TEU requires the EU to contribute to "the sustainable development of the Earth" through its international relationships.[64] Additionally, Article 21(2) of the TEU mandates EU States to "foster the sustainable economic, social, and environmental development of developing countries, with the primary aim of eradicating poverty."[65] Furthermore, sustainable development must be ensured using international cooperation to "preserve and improve the quality of the environment and the sustainable management of global natural resources."[66]

Article 6(1) of the TEU incorporates into law a recognition of "the rights, freedoms and principles of the Charter of Fundamental Rights of the European Union . . . which shall have the same legal value as the Treaties."[67] Article 37 of the Charter provides that "[a] high level of environmental protection and the improvement of the quality of the environment must be integrated into the policies of the Union and ensured in accordance with the principle of sustainable development."[68] This principle, now integrated into EU law, is similar to Gillroy's sub-principle mandating a high level of environmental protection.[69]

The integration clause of Article 11 of the TEU provides a framework under which EU institutions may pursue compliance with Gillroy's procedural sub-principle of integration of the environment and development.[70] This clause requires the integration of environmental protections into EU polices and activities to promote sustainable development.[71] The Treaty on the Functioning of the European Union provides specific guidance on the environmental objectives of these policies and activities.[72] Article 191(1) of the TFEU identifies the following objectives:

> preserving, protecting and improving the quality of the environment, protecting human health, prudent and rational utilisation of natural resources, promoting measures at international [sic] level to deal with regional or worldwide environmental problems, and in particular combating climate change.[73]

Article 192(2) TFEU establishes that "a high level of [environmental] protection" will be achieved by "taking into account the diversity of situations in the various regions of the Union. It shall be based on the precautionary principle and on the principles that preventive action should be taken,

that environmental damage should as a priority be rectified at source and that the polluter should pay."[74] Thus the "high level of protection and improvement of the quality of the environment" principle that defines the sustainable development of the EU's internal market in accordance with Article 3(3) TEU, must incorporate the: precautionary principle,[75] the source principle, the polluter pays principle, the prevention principle, and the safeguard clause. Any EU policy must integrate elements that correspond to the high level protection envisioned by the protection principle as shaped by its corresponding sub-principles. Otherwise, the policy and the secondary legislation that articulates it, infringe the Treaties.

A host of secondary legislation issued as Directives to Members States has also incorporated the objective of sustainable development.[76] One directive, the Water Framework Directive ("WFD"), incorporates the "river basin approach" to environmental water management and attempts to integrate a multi-sided sustainable development approach in its structure.[77] Commentators applaud such an approach to secondary legislation, while continuing to criticize the apparent lack of political will from Member States to speedily embrace such legislation.[78]

The European Union's sustainable development mandate is not only limited to the European arena; it is also part of its international agenda.[79] In addition to the EU efforts, individual Member States have attempted to incorporate sustainable development into their domestic legal systems. The United Kingdom, for example, has incorporated the concept into urban planning.[80]

Sustainable development continues to elude environmental lawyers who operate in a command-and-control regulatory system that already affords effective legal protection to the victims of environmental harms.[81] While sustainable development is part of the EU primary and secondary law, legal tribunals must still weigh the concept's role when deciding disputes where the EU objectives of economic development, social development, and environmental protection clash. Thus, we must consider how the ECJ has articulated the legal principle of sustainable development in the resolution of these disputes under the Treaties.

The ECJ and the Principle of Sustainable Development

The ECJ has not shied from discussing sustainable development principles in its decisions.[82] Of all principles addressed in the ECJ, the principle of assuring a high level of environmental protection is the most integral to the implementation of sustainable development in the EU.[83] The ECJ has even pronounced this principle in cases where the relevant treaties were quiet on the issue. In the *Danish Bottles* case,[84] for example, the ECJ declared that the Member States may limit the free movement of goods under the *Cassis de Dijon*[85] doctrine if it is necessary to protect the environment.[86]

Two recent cases also demonstrate the ECJ's approach toward the interplay between the polluter pays principle, the prevention principle, and the precautionary principle. In the Grand Chamber decision of *Raffinerie Meditarranee*,[87] the Court interpreted the polluter pays principle under Directive 2004/35/EC, which outlined the environmental liability surrounding the prevention and remedying of environmental damage.[88] There, the Italian court imposed penalties on the polluter parties that required remedial action beyond that established under the consultative process of the Directive.[89] The remedial action was implemented "without that authority having carried out any assessment, before imposing those measures, of the costs and advantages of the changes contemplated from an economic, environmental or health point of view."[90] In addition, the Court issued preventive orders to parties whose lands were not polluted or had been decontaminated before the effective date of the Directive.[91] These measures afforded a higher level of environmental protection than the one required by the Directive, a stretch, but not prohibited by a literal reading of Article 193 of the TFEU.[92] The Court further held that the polluter pays principle could be incorporated into even more protective national measures:

> Articles 7 and 11(4) of Directive 2004/35, in conjunction with Annex II to the directive, must be interpreted as permitting the competent authority to alter substantially measures for remedying environmental damage which were chosen at the conclusion of a procedure carried out on a consultative basis with the operators concerned and which have already been implemented or begun to be put into effect. However, in order to adopt such a decision, that authority:
>
> – is required to give the operators on whom such measures are imposed the opportunity to be heard, except where the urgency of the environmental situation requires immediate action on the part of the competent authority;
>
> – is also required to invite, inter alia, the persons on whose land those measures are to be carried out to submit their observations and to take them into account; and
>
> – must take account of the criteria set out in Section 1.3.1 of Annex II to Directive 2004/35 and state in its decision the grounds on which its choice is based, and, where appropriate, the grounds which justify the fact that there was no need for a detailed examination in the light of those criteria or that it was not possible to carry out such an examination due, for example, to the urgency of the environmental situation.[93]

Under this precedent, national authorities could impose a higher level of protection than originally devised under the Directive, provided they give the relevant parties the opportunity to be heard, invite the participation and comments of adjacent landowners, and the national measure is grounded in the need for urgent preventative action. The orders against the landowners whose lands were not polluted also validates the measures

under the precautionary principle and the general principle of proportionality:

> Directive 2004/35 does not preclude national legislation which permits the competent authority to make the exercise by operators at whom environmental recovery measures are directed of the right to use their land subject to the condition that they carry out the works required by the authority, even though that land is not affected by those measures because it has already been decontaminated or has never been polluted. However, such a measure must be justified by the objective of preventing a deterioration of the environmental situation in the area in which those measures are implemented or, pursuant to the precautionary principle, by the objective of preventing the occurrence or resurgence of further environmental damage on the land belonging to the operators which is adjacent to the whole shoreline at which those remedial measures are directed."[94]

In a second case decided the same year, *Afton Chemical Limited*,[95] the ECJ affirmed the level of judicial review to be applied to institutional actions relying on complex environmental issues while further clarifying the role of the precautionary principle under European legislation. Afton, a chemical company was seeking to invalidate the limits imposed by Directive 2009/30 to the additive MMT on grounds of the precautionary principle, pending a full assessment of its health and environmental impacts.[96] Regarding judicial review, the ECJ affirmed that:

> [I]n an area of evolving and complex technology . . . the European Union legislature has a broad discretion, in particular as to the assessment of highly complex scientific and technical facts in order to determine the nature and scope of the measures which it adopts, whereas review by the Community judicature has to be limited to verifying whether the exercise of such powers has been vitiated by a manifest error of appraisal or a misuse of powers, or whether the legislature has manifestly exceeded the limits of its discretion. In such a context, the Community judicature cannot substitute its assessment of scientific and technical facts for that of the legislature on which the Treaty has placed that task.
>
> ***
>
> However, even though such judicial review is of limited scope, it requires that the Community institutions [that] have adopted the act in question must be able to show before the Court that in adopting the act they actually exercised their discretion, which presupposes the taking into consideration of all the relevant factors and circumstances of the situation the act was intended to regulate.[97]

Regarding the precautionary principle, the Court in *Afton* prescribed its application as follows:

> A correct application of the precautionary principle presupposes, first, identification of the potentially negative consequences for health of the proposed use of [Methylcyclopentadienyl manganese tricarbonyl ("MMT")] and, secondly, a comprehensive assessment of the risk to health based on the most reliable scientific data available and the most recent results of international research . . . [w]here it proves to be impossible to determine with certainty the existence or extent of the alleged risk because of the insufficiency, inconclusiveness or imprecision of the results of studies conducted, but the likelihood of real harm to public health persists should the risk materialise, the precautionary principle justifies the adoption of restrictive measures, provided they are non-discriminatory and objective (see Commission v France, paragraph 93 and case-law there cited) In those circumstances, it must be acknowledged that the European Union legislature may, under the precautionary principle, take protective measures without having to wait for the reality and the seriousness of those risks to be fully demonstrated.[98]

Ultimately, the Court held that the temporary restrictions on MMT additives in combustion fuels, pending a full scientific assessment, was objective and non-discriminatory and, therefore, a proper use of the precautionary principle.[99]

Conclusion

The *acquis communitaire* demonstrates that the principle of sustainable development occupies a privileged position in the European legal order. The principle is a foundation of the EU Treaty, encompassing sub-principles — the precautionary principle, the source principle, the polluter pays principle, and the prevention principle — and promoting a balanced growth imperative via the safeguard clause of Article 192 TFEU.[100] European institutions have incorporated these principles in the secondary legislation of the EU and the Court of Justice of the European Union has commenced the long process of embroidering these principles into the legal fabric of the EU.

Even though the Court of Justice has embraced adjudicating European law on the principles of environmental protection, articulation of these principles as sub-tenants of sustainable development remains absent. The European legislature ought to "put flesh to the bones" of the general environmental protection principles by noting that integration of these principles in a particular act or legislation satisfies the Treaties' objective sustainable development.[101] The principle of sustainable development should also see the Court of Justice continue to apply environmental sub-principles. In doing so, the Court of Justice needs to provide a coherent interpretation of these principles to clearly establish the balancing between economic development and environmental protection that sustainable development

calls for. This consistent application will ensure that sustainable development as a legal principle will continue playing a key role in the development of European environmental law and will perhaps inspire other legal systems to follow suit.[102] As the legal community takes up this trend, it will guide the evolution of the European Union in its quest to create "an ever closer union among the peoples of Europe, in which decisions are taken as openly as possible and as closely as possible to the citizen."[103]

Endnotes: Sustainable Development and the Legal Protection of the Environment in Europe

1 *See generally* Robert L. Stivers, The Sustainable Society: Ethics and Economic Growth (1976).

2 World Comm. on Env't and Dev., *Our Common Future: Report of the World Commission on Environment and Development*, ¶ 1, U.N. Doc. A/42/427 (Aug. 4, 1987) [hereinafter *Our Common Future*].

3 *See e.g.*, James L. Huffman, *Markets, Regulation, and Environmental Protection*, 55 Mont. L. Rev. 425, 430 (1994) (noting that environmentalists hoped that command-and-control to limit private interests that are damaging the environment). *But see*, David Barnhizer, *Waking from Sustainability's "Impossible Dream": The Decision Making Realities of Business and Government*, 8 Geo. Int'l Envtl. L. Rev. 595, 588–89 (2006) (arguing that purely sustainable development is impossible to achieve because human self interest will always stand in opposition).

4 *Cf.* Barnhizer, *supra* note 3, at 613 (discussing how environmentalists want to establish an equal balance between human needs and natural systems).

5 *Cf. id.* at 670–71 (arguing that corruption is a primary reason for the failure of laws protecting the environment).

6 *See* United Nations Conference on the Human Environment, *Declaration on the Human Environment*, ¶¶ 4–5 U.N. Doc. A/Conf.48/14/Rev. 1 (June 16, 1972) (declaring that developed and developing countries must ensure that their growth protects the interests of the environment).

7 *Our Common Future*, *supra* note 2, at ¶¶ 4–15 (describing sustainable development as a means to growth in which both developed and developing countries work together to responsibly use the earth's resources so that they will continue to be available in the future).

8 *Id.*

9 *See id.* at ¶ 42–47 (declaring that the basic needs of the poor must be addressed including food, employment, energy, housing and sanitation).

10 *See id.* at ¶ 65–71 (addressing the need for continued growth of technology that is harmonized with the needs of the developing world and also the environment).

11 *See generally* Gen. Assembly, *Report of the United Nation Conference on Environment and Development*, U.N. Doc. A/CONF. 151/26 (June 13, 1992).

12 *Id.* prin. 1.

13 *Id.* prin. 2.

14 *Id.* prin. 3.

15 *Id.* prin. 4.

16 *See*, Gregory A. Daneke, *Sustainable Development as Systemic Choices,* 29 Pol'y Stud. J. 514, 514–15 (2001) (arguing that the economic and environmental balancing act that underlies sustainable development has led to continual re-conceptualization which has, in turn, made the idea a "vague agenda rather than a serious set of policy mechanisms").

17 *See* Lawrence Wai-Chung Lai & Frank T. Lorne*, The Coase Theorem and Planning for Sustainable Development*, 77 Town Plan. Rev. 41, 41 (2006) (arguing that the Coase Theorem, used to model transactions costs when analyzing market failures, should be used in sustainable development planning); *see also* David W. Pearce & R. Kerry Turner, Economics of Natural Resources and the Environment 24 (1990) (defining sustainable development as maximizing the benefits of economic development, including all elements of social welfare, while maintaining the services and quality of natural resources in the future).

18 *See generally* Susan E. Batty, *Planning for Sustainable Development in Britain: a Pragmatic Approach,* 77 Town Plan. Rev. 29, 31 (2006) (analyzing how urban planners in the U.K. have adopted sustainable development principals and looking specifically at failures of policy, institutions and politics).

19 *See id.* at 39 (arguing that strong public concern for the environment is necessary before policy makers will make significant strides towards sustainable development).

20 Nico Schrijver & Friedl Weiss, International Law and Sustainable Development: Principles and Practice 7 (2004).

21 Ronald Dworkin, Taking Rights Seriously 24 (1978).

22 *Id.* at 26.

23 *Id.* at 22.

24 *Id.* at 65.

25 *Id.*

26 John Martin Gillroy, *Adjudication Norms, Dispute Settlement Regimes and International Tribunals: The Status of "Environmental Sustainability" in International Jurisprudence*, 42 Stan. J. Int'l L. 1, 13 (2006) (discussing how the twenty-seven principles pronounced in the Rio Declaration negotiated by various conflicting interests resulting in an incoherent notion of sustainable development).

27 J.B. Ruhl, *Sustainable Development: A Five-Dimensional Algorithm for Environmental Law*, 18 Stan. Envtl. L.J. 31, 36 (1999).

28 *Id.*

29 Hans Vedder, *The Treaty of Lisbon and European Environmental Law and Policy*, J. on Envtl. L., 285, 287-288 (2010).

30 Bruce Pardy*, Sustainable Development: In Search of a Legal Rule*, 28 J. Bus. Admin. and Pol'y Analysis 391 (2001).

31 *Id.*

32 Ruhl, *supra* note 27, 35-36.

33 *See id.* at 61 (noting that models use to design sustainable development are poor because they rely on non-methodical judgments and expertise).

34 Gillroy, *supra* note 26, at 2 (recognizing that because sustainable development remains only a principle of international jurisprudence, it plays a minimal role in resolving international disputes).

35 *Id.*

36 *See id.* (arguing that the reason sustainable development has not resulted in dispositive legal rules is that the concept itself is not sufficiently definitive due to competing and contradictory principles and sub-principles that dilute the clarity necessary to transform the principle into legal rules).

37 *Id*. at 12.

38 *Id*.

39 *Id.* at 2.

40 Noah Vardi & Vincenzo Zeno-Zencovich, *From Rome to Nice: A Historical Profile of the Evolution of European Environmental Law*, 12 Penn St. Envtl. L. Rev. 219, 221-22 (2004).

41 *Id.*

42 William M. Lafferty & James Meadowcroft, Implementing Sustainable Development: Strategies and Initiatives in High Consumption Societies 307 (2000).

43 Treaty of Amsterdam, art. 2, Oct. 2 1997, 1997 O.J. (C 340) 1, 37 I.L.M. 56.

44 Vardi & Zeno-Zencovich, *supra* note 40, at 223.

45 *Id.*

46 *See id.* (noting that the Treaty's language has been interpreted to govern economic and environmental interests because of its focus on careful use of natural resources).

47 *Id.* at 236.

48 *See id.* at 236-37 (suggesting that such language precludes the adoption of any regulatory measures by Member States that aim at only achieving a "minimum common denominator of environmental protection" because the Treaty suggests that the entire Community must attain a high level of environmental protection).

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China in Africa: Curing the Resource Curse with Infrastructure and Modernization

*by Jeremy Kelley**

Seven billion is the number of human beings on this planet and that number is growing. How to provide food, clean water, shelter and jobs for this population, in ways that enhances and nurtures the Earth's natural resources and ecosystems while supporting our survival, is the challenge of our times. Ever since the first Earth Summit in Rio de Janeiro in 1992, we have known that sustainable development is the way to meet this challenge. Sustainable development is living within our means, leaving plenty for our grandchildren, and ensuring everyone has a reasonable opportunity to lead a decent living. However, the lack of political will on the part of governments, social and environmental irresponsibility on the part of corporations, and inertia to adopt a sustainable life style on the part of citizens, have collectively contributed to this failure. To succeed in sustainable development at the quality, scale and speed needed to meet the challenge, we need strong working partnerships between governments, corporations and citizens based on trust. Trust among partners is built through openness, accountability, and participation.[1]

Introduction

Africa is a continent of nation states created without regard to race, ethnicity, or the territorial interests of its inhabitants.[2] Mismanaged for years by imperial powers that were simply looking for ways to reap the benefits of its resource wealth, it is understandable that Africans are sometimes skeptical of Western influence and loan programs — a skepticism that the global South made apparent in the negotiations leading to the 1992 Rio Declaration.[3] With the economic and political rise of China, African nations now have choices that were previously unavailable to them. China represents another source of funding for infrastructure and industrial development in Africa. But how will differences in the way China invests impact African development?

This article will examine what an increase in Chinese investment means for the African continent. Part II examines what is meant by "sustainable development" and considers how it can be achieved. Part III details China's investments in Africa: its history, recent growth, and areas of focus. Finally, part IV returns to the question of how Chinese investment may influence African development.

The What and How of Sustainable Development

Defining Sustainable Development

Development is a value-laden concept and the definition can vary depending on which societies are deemed the benchmark of successful development; often this means 'development' with 'westernization.'[4] Certainly, even from a solely economic perspective, sustainable development entails not only economic growth, but an emphasis on structural change as well.[5] To create sustainable economic gains, the increased share of the industrial sector is important for those developing countries that are typically dependent on primary exports, such as agriculture and natural resources.[6] This is especially apparent in some oil-exporting countries which experience sharp increases in GDP but don't see changes in their economic structure.[7] But, viewing development in purely economic terms ignores many other factors that influence the lives of people in developing nations. These other social and political factors have become an ingrained part of how we now define sustainable development.

The United Nations Conference on Environment and Development ("UNCED"), held in Rio de Janeiro from June 3 to 14, 1992, presented a chance to re-envision development policy and practice following the end of the Cold War.[8] Freed from the "distorting shadow of superpower conflict," the developing countries of the global South began to assert themselves more heavily.[9] While ostensibly focused on environmental issues raised by the North, UNCED was in fact steered toward issues of sustainable development by the South, as reflected by the Rio Declaration which culminated the work at UNCED.[10]

The Rio Declaration highlighted the growing importance of governance in development[11] and the role of state cooperation in developing a sustainably supportive international economic system.[12] Inherent in the Rio Declaration was the notion that development is more than just a factor of economic growth, but must also include active encouragement and participation by civil society,[13] effective access to justice,[14] and an awareness of those traditionally marginalized in society.[15] Above all, the Rio Declaration was a proclamation that developing countries had a right to decide how they would develop[16] and that development was "interdependent and indivisible" with concerns of peace and the environment.[17]

Measuring development should also include "social indicators" such as life expectancy, literacy, nutrition, access to health services, and so forth.[18] A country may grow rapidly in terms of economic growth, but lag behind in these important areas that impact peoples' everyday lives. In his classic work, "Development as Freedom," Nobel Laureate Amartya Sen's broadened development include and to focus on the concept of freedom.[19] Life expectancy, literacy, nutrition, and access

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to health services, after all, are expressions of an individual's freedoms to health and an education. Sen defines five distinct types of freedom: 1) political freedoms, 2) economic facilities, 3) social opportunities, 4) transparency guarantees, and 5) protective security.[20] These freedoms are not only the end goals of development, but they are also the primary means for development.[21] These freedoms are inextricably intertwined. For example, a freer political environment would generally be more conducive to liberal economics and growth than a repressive regime.[22] People will feel more comfortable investing in a country if they know that it is secure from hostile foreign or domestic forces, evincing protective security freedom.[23]

Strong economic growth is not necessary for the advancement of other areas of development.[24] However, it is self-evident that a strong, growing economy can provide more opportunities and resources to address development problems, especially if the solutions are resource intensive, like improving infrastructure. That which encourages political and social freedom will also encourage economic development while the reverse is also true–political and social repression hinders economic development.[25]

The Rio Declaration and the associated principle of socio-political development have come to define a version of sustainable development that calls for something beyond mere economic growth. However, this ethos could be challenged as China experiences an economic boom without the corresponding growth in political freedom.[26] This is already affecting development in Africa because China, unlike many Western countries, does not emphasize the development of other social indicators as preconditions for economic development assistance.

Spurring Economic Growth

While sustainable development encompasses more than just economic growth, it is generally agreed that, especially in the poorest countries, economic growth is a crucial component of development.[27] Economies can grow by promoting a number of factors such as increased efficiency, enhanced education, technological change, accumulation and investment of capital, and the exploitation of natural resources.[28] In many developing countries these "modern" means of economic growth coexist with traditional economic sectors.[29] An inherent problem in dualist economic structures is that they foster economic and social gap between the modern and traditional means of economic growth[30] and, as a result, there are high levels of income inequality.[31] In Africa, one way this dualism can be seen by viewing extractive industries amongst traditional or early-stage modernizing economies.

The way a society approaches dualism and structural change can either promote or hinder growth.[32] For example, reinvestment from agrarian sectors toward industrial sectors, the encouragement of entrepreneurship, and creation of capital can drive a country to the point of establishing sustainable growth.[33] Although less developed countries will initially lag behind more developed countries as they gradually develop traditional sectors into modern ones, those less developed nations can catch, and even overcome, developed countries if they remain committed to this policy.[34] While each country must take its own path toward modernization, all long-term success will undoubtedly involve structural transformation.[35]

It's a Trap! Natural Resources and Bad Governance.

> "With hard work, thrift, and intelligence, a society can gradually climb out of poverty, unless it gets trapped."[36]

A short-sided reliance on the exploitation of primary resources as an engine of growth is a temptation that confronts many African nations and could possibly jeopardize long-term sustainable growth.[37] Primary exports can encourage economic growth in a number of important ways.[38] They can provide a source of surplus foreign currency that eases import of those capital goods and intermediate goods that are needed to modernize an economy.[39] They also provide linkages to other industries, forward and backward, on the chain of production.[40] For example, an oil-exporting nation could develop a refining industry. Primary exports also provide a source of income for local populations which, if spent in the domestic economy, will increase the demand for manufactured goods that can be translated into domestic production.[41] Taxes on primary exports can provide an important source of revenue for poor governments that can be reinvested in other development sectors — social, health, infrastructure, or other programs.[42] However, over-reliance on a single sector of an economy can spell ruin. Without the development of a co-existing industrial sector to offset the exploitation of primary resources, especially extractive industries, an economy can easily fall into the resource trap and its accompanying problems of corruption, misgovernance, and underdevelopment.

The resource trap (or resource curse) consists of three parts: 1) Dutch disease, 2) susceptibility to fluctuations in commodity prices, and () negative political and institutional effects.[43] Under Dutch disease, named after the effects the discovery of gas in the North Sea on the Dutch economy in the 1960s, resource exports cause a country's currency to rise in value against other currencies, making the country's other export activities uncompetitive.[44] In moderation, this affect can be positive for development because the surplus in foreign currency can be used to import goods needed for industry.[45] Taken to the extreme, however, the devaluation of domestically produced goods destroys any existing export market and, as local services, agricultural products, and manufactured items become more expensive, resources are diverted away from production.[46] Instead of building a diverse, modern, industry-driven economy, countries plagued by Dutch Disease find themselves unable to create competitive agricultural or industrial exports, thereby limiting their chances for sustainable economic growth.

Resource-dependent economies are also susceptible to fluctuations in world commodity prices.[47] The result is a boom and bust cycle: the economy is flushed with money when commodity prices are high, but starved for revenue when the prices drop.[48] When there is a great excess of wealth, governments tend to spend on all sorts of projects whether they are needed or

not.[49] During the lean times, living standards start to fall and the government must make tough choices about what must be cut. This cyclical boom and bust makes it difficult for electorates to judge whether the government is making wise use of money or investing in great mistakes.[50]

Above all, "[t]he heart of the resource curse is that resource rents make democracy malfunction."[51] Corruption and misgovernance are the effects of patronage politics that too often become the standard when massive resource rents find their way into a democratic society.[52] Furthermore, the more ethnically diverse a society, the more patronage politics comes into play; this is one reason why Africa experiences such grand corruption.[53]

In a resource state, the government is less accountable to the people. First, because there is less need to tax the population, citizens are less apt to scrutinize how tax income is spent.[54] Second, resource dependence erodes governmental checks and balances, leaving the electoral competition unconstrained and, when combined with patronage and ethnic division, parties can use the resource rents to buy votes, rig elections, or simply force opposition parties out of power.[55]

"The resource-rich, ethnically diverse societies need a democracy that is distinctive in having a strong emphasis on political restraints relative to electoral competition."[56] In the alternative, these countries will likely misuse resources and miss the chance to invest resource income in ways that drive economic modernization and diversification. Caught in a downward spiral of uncompetitive exports and bad governance, the abundance of resources can spell disaster for a developing economy.

Chinese Investment in Africa

Sino-African trade has recently exploded as China's growing economy requires more resources and markets for its manufactured goods.[57] Two-way trade between Africa and China stood at 10 billion U.S. dollars in 2000, rising to $18 billion in 2003, then $50 billion in 2006.[58] During this period the average increase in trade per year was thirty-three percent.[59] Trade surpassed $120 billion in 2010.[60] In the past two years, China has given more loans to poor countries than the World Bank.[61]

History of Chinese Trade in Africa

China has been trading with Africa for centuries, dating as far back as the Tang Dynasty (618-906 AD).[62] Chinese porcelain from the 9th century and coins from the 12th century have been found across East Africa.[63] Early trade, however, collapsed with the death of Emperor Yongle and the resurgence of Confucianism which promoted agriculture to exploration and trade.[64]

Only in the 1960s did China again begin to show interest in Africa. Between 1963 and 1964, Zhou Enlai, then Vice-Chairman of the Communist Party of China, made an extensive tour of Africa to strengthen Sino-African relations.[65] Foreshadowing the concept of South-South cooperation, he advocated mutual economic assistance between "poor friends" and attacked the "maltreatment of small and weak countries by the big and strong."[66] He pledged that Chinese assistance "would respect the sovereignty of the recipient country, would be given on generous terms, and would strive to enhance self-reliance."[67]

Modern Chinese investment in African infrastructure projects was born during this era.[68] The 1860-kilometer Tanzania-Zambia ("Tanzam") Railroad linking Zambia with the port in Dar es Salaam in Tanzania exemplified this new investiture.[69] Employing 50,000 Chinese workers and costing $500 million, it has remained one of the most costly infrastructure investments China has ever made in Africa.[70] However, Chinese investment during this time was more ideologically than economically motivated and focused on supporting the region's guerilla fighters and Socialist regimes, such as Julius Nyere's Tanzania.[71] This ideological approach to investment ended with the death of Mao and the end of the Cultural Revolution, but more economically focused development emerged from the economic reforms undertaken by the Deng Xiaoping regime.[72]

Two key events marked the beginning of the current trend of increasing Sino-African trade.[73] First, the Tiananmen Square demonstrations served to isolate China from the West.[74] Unwilling to criticize China for fear of exposing themselves to criticism and hoping to gain support from China, most African nations remained silent about the events and worked behind the scenes to move into the void that Western isolation had left.[75]

Second, the end of the cold war in 1991 meant that the economic tug-of-war for African allegiance was at an end[76] and, suddenly, aid and loans from Western nations and institutions such as the World Bank and the IMF began to come with attached conditions.[77] African leaders that were once accustomed to maintaining power through patronage systems of Western funds were now faced with the prospect of losing power.[78] Increased investment from China, who does not give the same weight to concerns of governance and human rights, can provide African states with less-encumbered loans and aid, addressing the need for capital in Africa and skirting the very real issue of misgovernance.

Impact of the Financial Crisis — The Need for Capital

The current global economic crisis has dramatically reduced Western foreign direct investment in Africa[79] and has also reduced the value of commodity assets countries once relied upon for export profits.[80] The result has been that it is "virtually impossible" to raise capital for exploration or development of resources.[81] This scarcity of capital has negatively impacted African infrastructure development.[82] According to the World Bank's Public-Private Infrastructure Advisory Facility, the retreat of investment capital from Africa has made "[infrastructure] financing (both debt and equity) more onerous and difficult to secure."[83]

While capital is being withdrawn by western investors, Chinese institutions have been expanding their investment, especially in extractive industries.[84] China's major players in this field are not only private investment banks, but also state-owned policy banks.[85] Jiang Jianqing, Chairman of the Industrial Commercial Bank of China ("ICBC"), expressed that Chinese

investment in Africa is "growing and becoming more diversified, even as the global downturn curbs investment by other countries."[86]

Oil Above All, But There is More

Currently, extractive industries remain the central focus of Chinese investment in Africa. This investment has turned China from the second largest exporter of oil in Asia to the second largest importer of oil in the world in a matter of only nine years.[87] Driven partly by the meteoric increase of cars on Chinese roads (estimated to reach 100 million by 2015) and partly by increased industrial demands, China expects to import between ten and fifteen million barrels of oil *per day* by 2020 — twice Saudi Arabia's total production and equal to that of the entire African continent.[88] Currently, Africa supplies thirty percent of China's oil needs, compared to the fifteen percent of demand Africa satisfies for the U.S.[89] Approximately seventy percent of African exports to China consist of crude oil and an additional fifteen consist of other raw materials.[90]

As a late-comer to the established oil fields such as those in Nigeria and Angola, China has had to work hard to make inroads against established players.[91] For this reason, China is actively seeking new fields in Gabon, Niger, Kenya, Uganda, and other areas often over-looked by Western states.[92] Unlike many Western companies, Chinese companies are willing to take more risk and will work in more politically unstable regions.[93]

Oil is not the only resource China is seeking in Africa. While oil constitutes seventy percent of African exports to China, an additional fifteen percent of exports are in the form of other mineral resources.[94] In particular, China has been active in pursuing sources of cobalt in Africa. Africa produces fifty-one percent of the world's cobalt, of which, eighty-eight percent of that comes solely from the Democratic Republic of the Congo ("DRC").[95] Recently, Chinese companies, China Railway Engineering Corporation ("CREC") and Sinohydro, have entered into an agreement to establish a joint Sino-Congolese venture, named Sicomines, that will provide the DRC with China Export-Import ("EXIM") Bank financed infrastructure in exchange for copper and cobalt mining concessions.[96] The $9 billion venture would provide $6 billion worth of road construction, two hydroelectric dams, hospitals, schools and railway links to southern Africa, to Katanga, and to the Congo Atlantic port at Matadi; the other $3 billion was to be invested by China in development of new mining areas.[97] The deal has recently come under fire as a $23 million signing bonus for Gecamines, the Congolese partner involved, disappeared under allegations of corruption.[98] Such allegations have unfortunately become standard in Chinese-financed programs which typically lack even a modest amount of transparency.

Is Chinese Investment in Africa a Curse or a Cure?

There is no doubt that Chinese investment presents African states with some clear advantages, especially at a time when Western investment has declined. Chinese investment could be the cure for a continent in need of capital-intensive investment in infrastructure and economic modernization. However, it is important to bear in mind that sustainable development is not solely about economic growth. Without examining the potential pitfalls of Chinese investment, particularly the over-investment in extractive sectors and its accompanying problems of misgovernance and dependence on a sole export, the increased economic growth may instead end up as a curse for Africa.

Cures

The Commodities-for-Infrastructure model

"The Chinese Government's strategy in Africa is starting to mimic the approach adopted in the home market itself, one that channels sizeable amounts of capital through state-owned (policy) banks at key sectors."[99] While this strategy has been directed mostly towards direct investment in extractive industries, a shift has begun to focus on infrastructure development in exchange for concessions on resources.[100] In 2006, China spent $7 billion dollars on infrastructure in Africa; in 2007 China invested an additional $4.5 billion dollars.[101]

While Africa has been showing robust growth in recent years, one major constraint on sustainable development has been the poor state of the continent's infrastructure, which depresses productivity by as much as forty percent.[102] It is estimated that Africa needs at least $93 billion to close the infrastructure gap.[103] Another challenge to developing infrastructure is the current cost of transportation in Africa, which is higher than that of other developing regions. According to the United Nations Conference on Trade and Development, "while freight costs for the world on average amount to 5.4 percent of imports, this value is up to five times higher for some African countries."[104] A World Bank study showed that, in 2007, the average cost in U.S. dollars to export a container from Africa was $1,649 compared to the Organization for Economic Co-operation and Development ("OECD") average of $889.[105]

Many African states have received financing for thermal or hydro power projects to facilitate much-needed electrification.[106] By the end of 2007, China had provided $3.3 billion for hydropower amounting to a 6,000 megawatt capacity, which would increase total generation capacity in sub-Saharan Africa by 30%.[107]

Given Africa's need for infrastructure, China's infrastructure-for-concessions policy may be seen as a win-win situation for Africa. As of 2008, China has financed infrastructure projects in over thirty-five African countries.[108] Yet, criticism tugs at the edges of this investment boom. First, Chinese companies often use Chinese labor in places where local labor could be used.[109] Instead of the money for infrastructure projects being pumped into the local economy, much of it is repatriated back to China where it originated. Second, there is little financial or technical investment to maintain the infrastructure constructed by Chinese workers.[110] While African states will benefit from the infrastructure, the money could also be used to finance employment opportunities for African workers. Additionally, there are always potential issues of transparency and corruption associated with

large investments, as indicated in the DRC Sicomines deal, which must be addressed to encourage sustainable development.

Investment in the Industrialization of Africa

"As China Inc.'s knowledge and network in Africa deepens, the diversification of China's investment footprint away from the energy sector in Africa will become an emerging trend in China-Africa commercial ties."[111] There is a hopeful sign in this diversification; Chinese companies are increasingly investing in manufacturing in Africa in addition to the usual extractive industries.[112] "A Chinese government survey shows the growing use of Africa as an industrial base. Manufacturing's share of total Chinese investment (22%) is catching up with mining (29%)."[113] Future Chinese investment in manufacturing could help mitigate the negative effects that heavy investment in extractive industries alone causes to African export industries.

China announced the "Go Global" strategy in 2000[114] as a strategy to both develop markets for China's export products and relieve pressure from the accumulation of foreign currency as well as develop new sources of energy and raw materials[115] Go Global has encouraged Chinese enterprises to establish offshore operations in designated Chinese special economic zones ("SEZ").[116] These zones "promote Chinese foreign commercial interests," "create safe-havens for Chinese capital", and offset "increased protectionist trade practices against Chinese companies."[117]

The establishment of these light industrial zones creates jobs for local citizens and helps offset the criticism that cheap Chinese imports have undermined Africa's weak manufacturing sectors.[118] The African Development Bank recently said of the Chinese SEZs, "The special economic zones are expected to make a significant contribution to industrialization in Africa although their success is by no means guaranteed."[119] This type of industrialization could be conjoined with the extractive industry to establish forward and backward links in production–such as refining and the manufacture of mining machinery–which can help diversify and strengthen local economies.[120]

However, nternational criticism of the SEZs points to the employment of large numbers of Chinese laborers in the construction of SEZs and to the procurement of resources exclusively through Chinese channels.[121] Too heavy a focus on SEZs "could limit progress towards regional integration," as countries compete for investment from China instead of developing local capacity.[122]

Curses

Heavy Investment in Extractive Industry May Exacerbate the Resource Curse

It is not only the Chinese who come to Africa and heavily invest in extractive industries. Western companies have been exploiting African resources since the colonial period and continue to dominate, especially in the oil industry. This has had adverse effects on African economies through the resource curse and its resultant bad governance.

Ghana's Center for Policy Analysis ("CEPA") recently warned that Ghana will likely suffer from the effects of Dutch Disease as it begins commercial production of oil.[123] To mitigate the effects of Dutch Disease, CEPA plans to closely manage the exchange rate, perhaps pegging the Ghanaian Cedi to parity with the US dollar.[124] The economics of Dutch Disease can be offset by efficient management of currency, appropriate pacing of resource exploitation, and concurrent investment in modernizing industry.[125] It is the effects that resource rents have on the governance of a politically divided, weak, or unstable nation that are the most concerning aspect of the resource curse.[126]

Chinese investment in Africa has the potential to exacerbate the misgovernance aspect of the resource curse. While Western countries have demanded more of their companies and criticized them for investment in nations with poor human rights records, China makes no such distinctions. Chinese investment does not require recipient countries to implement any kind of anti-corruption measures, nor does it monitor whether the money is appropriately spent or disappears into the pockets of corrupt leadership.[127]

Addressing the Resource Curse

In general, three interconnecting factors can be addressed to encourage appropriate use of resource revenues: (1) transparency, (2) accountable governance, and (3) economic and political policies which take proper account of horizontal and vertical divisions of power in the society.[128] Even as the Rio Declaration has called for further transparency,[129] new global initiatives have brought transparency in the extractive industries to the forefront of development.

The Extractive Industries Transparency Initiative ("EITI") "aims to strengthen governance by improving transparency and accountability in the extractives sector."[130] It does so by monitoring and reconciling company payments and government revenues at the level of individual countries; to be deemed "EITI compliant," each country needs to implement EITI compliant regulations and establish a multi-stakeholder group of civil society, government, and private industry representatives to oversee implementation.[131]

Under ideal conditions, EITI would be a benefit for all parties involved: governments would benefit from transparency and an anti-corruption stance which would lead to improvements in tax revenue and "enhanced trust and stability in a volatile sector;" companies would benefit from a level playing field where all companies must disclose the same information; civil society benefits from receiving reliable information from the government and companies; and the energy sector would see increased stability which encourages long-term investment.[132]

While it is empirically inconclusive whether EITI enhances a country's development potential, there are many positive signs which have encouraged countries to begin the compliance process.[133] To date, twenty-one African nations have completed or are in the process of obtaining EITI compliance status.[134] One recent case study suggests that, even in the most pervasively corrupt countries, EITI initiatives can shed light on the issues

of governance and accountability, even if it offers no certain answers.[135]

Chinese companies working in an EITI compliant country are following the reporting framework established by that country and, to date, Chinese companies have reported in Gabon, Kazakhstan, Mongolia, and Nigeria.[136] China has expressed its support for the EITI "in several international fora," including the UN General Assembly and the G20.[137] China could benefit from further support of EITI as it would provide more political stability when challenging operational environments and would allow Chinese companies to compete at an equal level with Western companies.[138] Because EITI "affirm[s] that management of natural resource wealth for the benefit of a country's citizens is in the domain of sovereign governments to be exercised in the interest of their national development," China need not worry about moving from its "non-interference" foreign policy.[139] Instead, since EITI is implemented and monitored domestically, Chinese companies are merely complying with domestic law and that law offers benefits for compliance.[140]

Transparency, however, will not solve the problem entirely. A government must be accountable to its citizen if disclosure of potential corruption is to have any effect.[141] Effective anti-corruption initiatives are based upon "mass mobilization" and hold leaders politically accountable for the misuse of state funds.[142] Of course, a multi-party democracy is the most obvious form of accountable governance.[143] However, even in a dictatorship, mass protest to the misuse of resources may impose pressure to reduce corruption.

In order to secure accountability, any development initiative must take into account a country's horizontal and vertical power relationships.[144] This is especially true in multi-ethnic and divided societies; because trust is a powerful factor in governance and corruption, development programs must work to establish institutional and economic ties between horizontally fractured power structures.[145]

Addressing Chinese Investment in Light of the Principles of Sustainable Development

The Rio Declaration urges states to cooperate in promoting sustainable development.[146] It also embeds principles of transparency and accountability.[147] As a direct result, a global network of civil society organizations is working to ensure access to information, participation, and access to tribunals and justice.[148] While gaps still remain, norms of accountability are gaining force.[149]

Rio + 20 looks to further emphasize issues of accountability and governance which affect sustainable development.[150] The High-Level Panel on Global Sustainability recently highlighted the "need to integrate economic, social, and environmental dimensions" in order to achieve sustainable development.[151] The Panel, in the tradition of the Rio Declaration's Principle 1, places humans at the center of sustainable development.[152] Unlike Rio, the Panel calls on humans to "claim their rights and voice their concerns" against "persistent inequality which offends deeply held universal principles of social justice."[153] The socio-economic change needed will only come through transparent and accountable public-private partnerships.[154] The writing is on the wall that transparency and accountability are the new emphasis in development and that China would be wise to turn its investment policy in that direction.

To China, development has been more of an economic concept than it is to Western organizations and as portrayed in the Rio Declaration. While it is China's policy not to interfere with the political situations in the countries where it invests, it must be assured of political stability to ensure the security of its investments. Democracy typically provides stability. Through support for EITI and other governance initiatives, China may not be supporting democracy per se, but is supporting accountable governance.

One promising outlook for African development is the increased practice of corporate social responsibility ("CSR") within Chinese companies.[155] CSR generally means that companies will meet "the legal requirements and broader expectations of stakeholders in order to contribute to a better society through actions in the workplace, marketplace and local community and through public policy advocacy and partnerships."[156] Almost all Chinese business leaders in Africa surveyed in 2010 were familiar with CSR and generally described CSR "in terms of contributing to local economic growth and job creation, complying with local laws and caring for the environment, and making philanthropic donations to support schools and hospitals."[157] Key drivers of CSR growth included Chinese government support for CSR, the adoption of international standards and collaboration (including EITI), and the establishment of CSR training and skills development programs.[158]

It seems Chinese businesses are open to the idea of CSR, but as the 2010 study concludes:

> One key difference between Chinese and western conceptions of CSR concerns the extent to which they are willing to consider whether business practices reinforce or undermine local legal and political institutions, particularly in institutionally weak countries. While the Western model for overcoming state corruption in managing natural resource revenues is based on encouraging transparency, the Chinese model has tended to rely on direct provision of public infrastructure. This is aided by Chinese companies' access to low-cost and long-term capital. However, there is long experience of foreign funded infrastructure projects being developed in Africa, which do not meet local needs, and are not supported with maintenance, which remains a challenge to this model of business in development.[159]

Conclusion — Is Chinese Investment Just Like the Rest? Or Will It Kick-start an African Renaissance?

The central question about Chinese investment in Africa is whether it will be more effective at establishing long-term sustainable development than the Western model, which has

not been as effective as the West would have hoped. Certainly, Chinese investment in Africa is popular amongst Africans, even more so than aid which comes from the West.[160] It is also certain that Chinese and Africa fortunes are tied together as there is a clear correlation between Chinese and African growth since 1999.[161] Chinese investment in infrastructure and modernizing industry has the potential to kick-start stagnant African growth and begin a new era of economic development.

However, economic growth will not translate into sustainable development if it does not deal with Africa's limited diversification, susceptibility to volatile commodity prices, and misgovernance and corruption. While it may not be willing to interfere directly, China will want political stability to ensure its investments pay off and its supply lines remain intact. This may mean supporting authoritarian regimes, as China did in Sudan.[162] Yet, it may also mean supporting new emerging international standards for transparency and accountability such as the EITI.

Significant criticism has been laid on the West's doorstep for the failures that billions of dollars in aid have produced in Africa. Whether Chinese investment creates sustainable development in Africa will be determined not only by the continued diversification and investment in infrastructure, but also by the way African society adapts to and propels the changing economic and social environment. While Chinese development may not expressly include many of the freedoms the West deems to be indicators of development, it remains to be seen whether these freedoms will be the ends and means of a uniquely African sustainable development.

Endnotes: China in Africa: Curing the Resource Curse with Infrastructure and Modernization

1 Lalanath De Silva, Opinion Piece, *Sustainable Development Cannot Happen Without Good Governance*, U.N. Non-Governmental Liaison Service, http://www.un-ngls.org/rioplus20/newsletter/issue4/article8.html (last visited Apr. 18, 2012).

2 *See, e.g.,* W.E. Smith, Nyerere of Tanzania 88 (1974) (quoting Julius Nyere, the father and first president of the modern state of Tanzania as saying, "It is impossible to draw a line anywhere on a map of Africa which does not violate the history or future needs of the people.").

3 United Nations Rio Declaration on Environment and Development (June 13, 1992), 31 I.L.M. 874 (1992). S*ee generally* David Hunter et al., International Environmental Law and Policy 154-57, 163 (4th ed. 2011) (examining the Rio Declaration as the result of "serious divisions" between North and South which resulted in a "grand bargain" between North and South).

4 Adam Szirmai, The Dynamics of Socio-Economic Development 11-12 (2005) (noting that although "Western countries have become models for 'modern' societies" and development and westernization may have become conflated, these ideas are challenged by the shifting center of economic and political gravity toward Asia).

5 *Id.* at 6 ("[E]ven if we limit ourselves to the economic sphere, it is clear that economic development is more than economic growth alone. Economic development refers to growth accompanied by qualitative chances in the structure of production and employment, generally referred to as *structural change*." (citing S. Kuznets, Modern Economic Growth : Rate, Structure and Spread (1966)).

6 *Id.*; *see also id.* at 109-12 (detailing how developing countries may affect structural change through first the development of industry and a later transition into the service sector).

7 *Id. at 23* (placing oil-exporting developing countries in a separate group, cutting across income classification, and noting their central problem in realizing structural change).

8 *See generally* Gen. Assembly, *Report of the United Nation Conference on Environment and Development*, U.N. Doc. A/CONF. 151/26 (June 13, 1992).

9 Hunter, *supra* note 3, at 155.

10 *Id*. at 155, 163 (noting that the "Rio Declaration may be understood as a bargain between the affluent North concerned with global environmental problems and the poor South concerned primarily with development questions," but that the South appeared to gain much leverage and, in the end, "the Rio Declaration seems to highlight development issues more than the environment").

11 *See* Rio Declaration, *supra* note 3, princ. 10 (raising the importance of civil society knowledge of and participation in the decision-making processes); De Silva, *supra* note 1 (describing how "[n]otions of transparency, participation and accountability were embedded in Principle 10 of the Rio Declaration").

12 Rio Declaration, *supra* note 3, princ. 12 ("States should co-operate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation.")

13 *Id*. princ. 10. ("States shall facilitate and encourage public awareness and participation by making information widely available.").

14 *Id.* ("Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.").

15 *Id*. princ. 20 (women); *id*. princ. 21 (youth); *id.* princ. 22 (indigenous people).

16 *Id.* princ. 2 ("States have . . . the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies . . . .").

17 *Id.* princ. 25.

18 Amartya Sen, Development as Freedom 7, 15-16 (1999) (explaining the many 'unfreedoms' people across the world suffer to include social, political, and economic deprivations of freedom).

19 *Id.* at 3 (noting that "[f]ocusing on human freedoms contrasts with the narrower views of development, such as identifying development with the growth of gross national product, or with the rise in personal incomes, or with industrialization, or with technological advance, or with social modernization" but that freedom depends on these other influences as well).

20 *Id.* at 38 (explaining that these freedoms are instrumental because they "contribute to the general capability of a person to live more freely" as well as compliment and strengthen each other).

21 *Id.* at 10, 36 (defining development as "the process of expanding human freedoms).

22 *See id.* at 53 (noting that the "instrumental roles of freedom include several distinct but interrelated components" the development of one is required for and supported by the development of all others).

23 *Id.*

24 *See id.* at 46-48 (exemplifying that life expectancies in China and Sri Lanka in 1994 were above 70 years while GDP per capita lagged back at less than $1000, while in contrast, South Africa and Gabon had GDP per capita around $4000 and yet life expectancy was below 60 years of age in both countries).

25 *See id.* at 3 (emphasizing that economic growth is not merely an end, but there is an inter-relation between other development indicators and economic growth).

26 *See* Shirzmai, *supra* note 4, at 12 (noting that "an emerging China might well become a new model of modernity").

27 *Id.* at 7 (finding in his analysis, that "most authors reached the conclusion that, especially in the poorest countries, growth is a prerequisite for development, which development is more than just growth"); *see also* Sen, *supra* note 18.

28 Shirzmai, *supra* note 4, at 69 (listing these factors which can each "be represented in the form of a basic production function, which relates to the so-called proximate sources of growth" (emphasis omitted)).

29 *Id.* at 78 (explaining that the modern sector is technologically developed and located in or around urban centers, while the traditional sector is predominantly rural and lacks the productive capacity of modern means).

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Shining Sun and Blissful Wind: Access to ICT Solutions in Rural Sub-Saharan Africa Through Access to Renewable Sources

*by Osob Samantar**

Introduction

The United Nations Conference on Sustainable Development ("UNCSD" or "Rio+20") Conference culminates twenty years of sustainable development. Held in Rio de Janeiro, Brazil June 20-22, 2012, the conference marks the 20th anniversary of the 1992 United Nations Conference on Environment and Development ("UNCED"), and the 10th anniversary of the 2002 World Summit on Sustainable Development ("WSSD") in Johannesburg, South Africa. Under the central theme of the green economy, both Information Communication Technology ("ICT") solutions and renewable energy will be addressed.[1] These two sectors' growth are intertwined. As developed and developing countries convene for the Rio+20 conference, they must look to progress in these integrated areas. Sub-Saharan Africa provides an arena in which to view these concepts and take stock of how new principles have evolved and are being integrated into green economies.

Approximately forty percent of the world's population without access to electricity lives in Sub-Saharan Africa.[2] Within rural Sub-Saharan Africa, around eight percent of the population has access to electricity, which is vastly disproportionate to the urban areas where roughly fifty-three percent has access to electricity.[3] As a result, many in rural Sub-Saharan Africa do not enjoy the impact of ICT solutions. The purpose of this article is to highlight the relationship between ICT solutions and greater sustainable development, discuss the access crisis in rural Sub-Saharan Africa, and recommend integration and implementation methods that governments and non-government actors may pursue within the scope of the 1992 Rio Declaration principles. This article highlights three countries: Kenya, Ghana, and Namibia, and assesses their respective green energy efforts. Lastly, this article will discuss how the Rio+20 conference presents the perfect opportunity to incorporate ICT related provisions into the final conference outcome document.

Background

ICT solutions break barriers. Access to energy leads to easier access to ICT and knowledge regarding every aspect of the global community," which in return allows citizens to find solutions to political, social, and economic challenges. Income generation is also made possible through the creation of new ICT related enterprises. Access to energy is vital to sustainable development and the construction of green economies. Moreover, there is a positive correlation between access to energy and development.[4] Although the countries in this study vary with regards to ICT development, all three face issues with access to electricity and power within their rural areas.

Take, for example, the mobile phone ICT solution that improves citizens' standard of living, helps small businesses, and connects families. In Africa, mobile phones facilitate advancements in banking, education, healthcare, agriculture, and the empowerment of women.[5] At the same time, according to the GSM Association ("GSMA")[6], by the end of 2012 there are expected to be around 165,000 mobile base stations across sub-Saharan Africa without a reliable supply of electricity.[7] This totals nearly seventy-nine percent of all base stations across sub-Saharan Africa.[8] Typically, diesel generators power these stations.[9] Sustainable and renewable energy sources can resolve problems of unreliable access to energy by replacing or supplementing existing diesel generators. These energy sources are plentiful in Sub-Saharan Africa because of favorable geographic location and terrain. Integrating them into national energy plans will help states in Sub-Saharan Africa use green economy initiatives to alleviate poverty.

Kenya

Kenya is perhaps the most advanced African country in terms of utilizing ICT solutions. Kenya is located in Eastern Africa, bordering the Indian Ocean, between Somalia and Tanzania.[10] Its population is over fourty-three million with a median age of 18.9 years.[11] At an annual growth rate of thirty percent, Kenya's ICT sector outperforms all other sectors of the economy.[12] Of the three countries, Kenya's civil society is arguably the most active. Kenya has a relatively new Constitution (ratified in 2010), strong internal macro-economic policies, and what some analysts describe as "a favorable regional environment."[13] It is also East Africa's largest economy.[14] Despite recent efforts, Kenya still faces challenges with regards to the distribution of these modern solutions. ICT infrastructure in rural Kenya requires work, with the majority of advancements concentrated in Nairobi and Mombasa.[15]

ICT solutions in Kenya are mainly mobile-based since roughly ninety-three percent of adults use mobile phones.[16] Perhaps the most popular mobile platform in Kenya is Ushahidi. First developed to map reports of post election violence in early 2008, Ushahidi was also used to monitor the 2009 Indian

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elections; track violence in Gaza; map the Gulf of Mexico oil spill; and even monitor emergency response to the earthquake in Haiti.[17] Kenya also has a mobile money transfer service, M-Pesa, which provides banking access to rural citizens that lack access to traditional brick-and-mortar banks.[18] Since 2007, M-Pesa has transferred roughly $1.8 billion, which equals 5 percent of the country's GDP.[19] Agriculture is a source of employment for roughly seventy percent of the population in Kenya[20] and M-Farm solutions allow farmers to use a combination of crowd-sourcing and mobile alerts to identify sale patterns, predict the weather, and stay knowledgeable on other economically viable crops.[21] Even Community Health Workers offer educational lessons on reproductive health and newborn care via mobile applications.[22]

Several factors have forced Kenya's national emphasis on renewable energy and green economy initiatives. Kenya imports most of its fossil fuels.[23] Unlike other states in the South, Kenya is not rich in energy sources like coal and nuclear power.[24] Therefore, in many ways Kenya is constrained in the energy sector. About eighty percent of the population lives in rural areas and about ninety percent of Kenya's rural population lacks reliable access to electricity.[25] Kenya's investment in renewable energy is still in its initial stages. Thus, the amount of electricity being generated currently by renewable energy sources is far less than the potential amount.[26]

In 2004, Kenya inaugurated its E-Government Strategy to "improve service delivery, transform government operations, and promote democracy."[27] Much of this integrates Principle Ten of the 1992 Rio Declaration, in that the government sought to expand public access to government information.[28] In the same year, the Communication Commission of Kenya also funded a Universal Access Report to analyze ICTs in rural areas of Kenya.[29] The report estimated the rural population in Kenya at 18.6 million and found little to no research and development geared towards the needs of this population.[30]

Ghana

Ghana is located in Western Africa and borders the Gulf of Guinea, between Cote D'Ivoire and Togo. [31] Ghana's population is over 25 million, with a median age of 21.4 years. [32] Ghana is making strides in telecommunications. Although Ghana has not reached the level of sophistication of Kenya, it is ahead of Namibia in ICT. Ghana was one of the first African states to "liberalize" its telecommunications sector.[33] As a result, Ghana remains aggressive in incorporating ICTs in the health, education, and agriculture sectors.[34] Predictions also indicate that competition in Ghana's ICT market is set to intensify as more landing rights have been granted to two new submarine cables.[35] However, the environmental impact of these cables has not yet been assessed and the government has not accounted for the possible electronic waste that could result.

Although most discussions about mobile applications only refer to Kenyan products, Ghana's application providers are equally advanced. For example, applications allow individuals to check the authenticity of drugs through SMS messaging.[36] In healthcare, the Mobile Technology for Community Health initiative developed two mobile applications, 'Mobile Midwife' and 'Nurses' that provide training for nurses, alerts to remind women of important check-ups, educational resources, call centers to assist with monitoring, and a data collection mechanism.[37] Following Kenya's example, social activists and bloggers in Ghana plan on monitoring and reporting on the December 2012 elections, which will be the first time Ghana's citizens are engaged in this fashion.[38]

Ghana's ICT for education initiatives is some of the most advanced in Sub-Saharan Africa. ICT supported educational mechanisms are used in Ghana to ensure students are competitive in the global economy. GARNET, Ghana's national research and education network ("REN") creates integrated learning, teaching, and research among all public and private institutions in Ghana.[39] These programs fully integrate the notion that creativity will forge and mobilize global partnerships to "achieve development for all," which integrates Principle Twenty-One of the 1992 Rio Declaration.[40]

ICT solutions in Ghana also assist in creating sustainable livelihoods in the agricultural sector.[41] For instance, in the cashew industry, farmers use software solutions as part of a joint project created by SAP, a German based, multi-billion dollar software and programming company, and the African Cashew Initiative.[42] Through the SAP application, cashew unions get access to farmer contact data, loading information, buying data, and market information.[43] The application directly connects farmers to wholesalers and retailers, and ultimately helps them increase their incomes.[44]

Ghana has the potential to quickly "catch-up" in the ICT sector. Ghana's mobile penetration rate is 85.5 percent.[45] The government in Ghana also incorporated an emphasis on ICT solutions as a central piece to their long-term development strategy.[46] Yet, a recent study conducted by The World Bank found infrastructure disparities in Ghana, with greater ICT infrastructure in the South and Southwest than in the North.[47] Much of the infrastructure challenges could be a result of urban-rural energy disparities in different regions in Ghana.

Unlike Kenya and Namibia, Ghana integrated some of the core principles of sustainable development and green economy before the 1992 Rio Declaration. In 1989, Ghana established a national initiative to power the entire country by 2020 and included renewable energy schemes.[48] To help meet this goal, off-grid renewable energy sources could bridge the gap between centralized grid capabilities and population demands, especially since the cost of energy in Ghana is expected to reach $5.2 billion by 2020.[49]

Namibia

Namibia is located in Southern Africa and borders the South Atlantic Ocean, between Angola and South Africa.[50] Namibia has the lowest population density of the three countries in this article, which stands at roughly 2.1 million, with a median age of 21.7 years.[51] Roughly 60 percent of households are rural

households.[52] There are approximately 127,500 Internet users in Namibia and 1.5 million mobile phones within Namibia.[53]

Few innovative programs exist in Namibia similar to those in Kenya and Ghana geared towards civil activism and development through ICT solutions.[54] None of these programs have the high visibility of Ushahidi or the ICT for education initiatives in Ghana. Still, Namibia only gained its independence two years before the 1992 Rio Declaration.[55] The government in Namibia understands that it lacks the capacity necessary for sustainable development and has incorporated themes of cooperation and partnership embodied in the 1992 Rio Declaration.[56] For instance, Namibia is looking to India to assist with long-term challenges. This partnership with India could enable the ICT sector to provide e-services through distance learning and health resources by connecting Namibia with Indian counterparts thereby allowing direct assistance.[57] Utilizing this assistance, Namibia should pursue learning best practices and green initiatives toward the goal of implementing sustainable development in rural areas.

Access Crisis and the Use of Renewable Energy Planning Solutions

The 1992 Rio Declaration failed to provide a guide for states to deal with the accelerating demands for energy. Estimates show that by 2015, more Africans will have mobile phone access than electricity.[58] Increased demands coupled with lack of national infrastructure to accommodate growth and the high price of fossil fuels have created an energy crisis in Sub-Saharan Africa. For example, in Namibia energy deficits exist whereby demand stands at 550 mega-watts and current capacity is just above 380 mega-watts.[59] Lack of reliable energy stifles rural Sub-Saharan Africa and prevents citizens from enjoying the thriving ICT industries. Currently, approximately eight percent of the rural population in Sub-Saharan Africa has access to electricity, which is substantially lower than in urban areas where fifty-three percent of the population has access.[60]

Most of Sub-Saharan Africa relies on biomass, diesel, and kerosene, all of which are expensive and costly in the long run. In rural areas, high costs of electric grids incentivize the use of diesel and oil, whereas in urban areas, the costs are distributed over larger populations. In Namibia, wood remains the dominant source of energy in the rural areas.[61] Namibia currently relies on purchase agreements with power utilities in neighboring countries, thereby importing over fifty percent of its electricity.[62] In Ghana, high growth rates in demand for power are rapidly outstripping what the Akosombo Reservoir can supply in terms of hydropower; and as a result many must return to oil.[63] Most Kenyan households are still reliant on kerosene lamps, disposable batteries, and diesel generators.[64] These energy sources are very expensive and harmful to human health and the environment.

All states should fully incorporate Principle Four of the Rio Declaration into national energy policies, which requires that "environmental protection constitute an integral part of the development process [that] cannot be considered in isolation from it."[65] This should include acknowledging and implementing renewable energy initiatives as one step in the process of integration. Sub-Saharan Africa is abundant with renewable energy resources and use of these resources would avoid the environmental damages created by deforestation and greenhouse gas emissions. The GSMA predicts that East Africa alone has a potential to create 11,000 community power projects to help supply electricity and communication to rural populations.[66] Countries can replace their reliance on diesel, kerosene, or biomass with solar and/or wind energy.[67] Africa has twenty percent of the world's landmass, and land in Sub-Saharan Africa is plentiful and cheap, making the installation of wind or solar farms in rural Sub-Saharan Africa is more feasible than in other areas of the world.[68] Sunshine is also plentiful and the cost of both wind and solar photovoltaic energy sources is becoming progressively cheaper.[69] Moreover, additional financial resources could be recovered with power sector cost recovery.[70]

Solar Photovoltaics

Photovoltaic cells transform sunlight into electricity while also storing this energy for later use.[71] Meeting household demand depends on the given system size, which is the number of panels necessary to "produce enough power to meet demand."[72] Solar photovoltaics (solar PV) are easily adaptable, use both direct and diffused beams, and the cost is dropping at a faster rate than other technologies.[73] Solar PV is well suited for rural Sub-Saharan Africa. It requires minimal maintenance and the sun in rural Sub-Saharan Africa is especially plentiful year-round. [74] Yet, critics remain hesitant about the viability of solar PV as a long-term solution because solar panels are often shipped internationally, require costly maintenance, and can be difficult to replace locally.[75]

Kenya

Kenya's location allows for fierce, yearlong exposure to sun. The Ministry of Energy estimates exposure at about 4 to 6 kWh per square meter per day, which is comparable to 300 million tons of oil equivalent.[76] Most areas in Kenya also receive around six hours or more of sunlight a day.[77] All thirteen public micro grids in Kenya use diesel fuel to generate electricity and fuel costs are passed through to the consumer.[78] For instance, in November 2009, the fuel cost adjustment accounted for forty percent of the total consumer electricity bill.[79] Diesel generation can be effectively replaced by solar generation in the micro grids to alleviate this burden on the consumer.

Ghana

Similar to Kenya, the Ministry of Energy in Ghana estimates solar exposure at about 4 to 6 kWh per square meter per day.[80] The Ministry also recorded high levels of solar energy in about sixty percent of the total national land mass.[81] Solar PV installations in Ghana can help electrify homes and communities, power rural telephony, power battery-charging stations, support distance education tools, and power other telecommunications tools. Solar battery service stations for community members can be a profitable business venture for rural entrepreneurs in

Ghana.[82] The government can also encourage national energy companies to adopt renewable energy plans to fill disparity gaps.

Namibia

There are few statistics on the exact potential of solar energy in Namibia, but Namibia's solar resource is abundant with some estimates showing 3,300 hours of sunshine per year in Namibia.[83] Furthermore, in 2010, the World Bank estimated that Namibia held the "highest multiple, annual production potential from solar, wind, hydro, geothermal, and biofuels."[84] This potential is about one-hundred times the current energy consumption.[85] In 2005, the government of Namibia asserted its commitment to sustainability through the promotion of natural resources for energy production.[86] This included the establishment of the Solar Electrification Revolving Fund.[87]

Wind Turbines

Wind Turbines extract energy from moving air and enable an electric generator to produce electricity.[88] The amount of energy and the reliability of wind energy vary due to wind velocities and turbine characteristics. However, wind turbines are ideal for rural Sub-Saharan Africa because most feasible wind velocities are concentrated in fairly remote rural areas.[89] Nonetheless, meeting rural demand will depend on many technical factors including determining the ideal hub height and blade size necessary for efficient operation, that in turn affect the total cost of building and operating the turbines .[90]

Kenya

Kenya has one of the highest wind velocities in the world with averages ranging between three and ten m/s (meter per second) and northern Kenya with wind velocities at 11 m/s.[91] The UN Environment Programme estimates that Kenya's wind potential is more than double the national demand, or approximately 3,000 MW.[92] Wind energy can also alleviate the state's reliance on hydropower, which is currently strained by lack of rainfall and environmental degradation of watersheds.[93] Electricity generation from wind can play an important role in rural electrification in Kenya because it is cheaper than oil-fired generation and easily accessible to rural households that are not connected to a national grid.

Ghana

Wind energy potential in Ghana is estimated at 5,600 mega watts.[94] Tapping into this resource will be crucial for Ghana to reach its goal to achieve "10 percent contribution of new renewable sources in electricity generation" by 2020.[95] As it stands, existing power plants are unable to meet the growing demands in Ghana, especially with increased oil prices.[96] Ghana has also invested capital and resources into solar PV solutions, but overlooked ways to incorporate wind energy projects into the national goals of sustainable development. Local wind turbines in Ghana can even use scrap metals, automobile wheel bearings, and axles to produce cheaper alternatives than solar PV.[97]

Namibia

There are few statistics on the exact potential of wind energy in Namibia, but the geography suggests that wind power could provide a great deal of energy. Sources found wind energy potential in Namibia to be significantly high.[98] The coast of Namibia provides favorable wind velocities for turbine operation.[99] Namibia is water stretched, so hydropower is less viable and wind energy requires little to no water.[100] Although wind energy will not provide a majority of Namibia's energy, it can nonetheless help reduce its energy deficit.[101]

Integration and Implementation

The advances currently made in Kenya, Ghana, and Namibia are largely based on 1992 Rio Declaration principles. States take varied approaches at incorporating these principles. Often the initial step involves incorporating principles of renewable energy sources into commissioned reports and then into national energy law. Solar and wind energy policies are relatively young in much of Africa, but governments along with private partnerships are integrating and implementing large-scale projects. Many of these projects are still concentrated in urban areas or connected to the national grid and therefore create disparities between the urban and rural areas. Cooperation among states with regards to scientific expertise and technology transfers can also assist local development processes to achieve sustainable development in areas outside of the energy sector.

Kenya

In 2004, the government released Sessional Paper No. 4, which outlined the government's energy policy through 2023.[102] The government acknowledged the "power system weaknesses" and recognized the "great potential" for solar and wind energy, but also found challenges with "attracting substantial private sector investments."[103] The paper sought to develop local expertise, initiate local adaption of technologies, and adequately fund rural electrification penetration from 2004-2012.[104] In the long run, 2004-2012, the plan proposed greater financial incentives for investors in power generation and the development of "local manufacturing capabilities for advanced renewable energy technologies."[105] Later in 2006, the government passed the Energy Act of 2006, which serves as Kenya's premiere legislation on the consolidated national energy policy.[106] This law emphasizes efficiency and conversion of Kenya's energy sources, and affirms Kenya's commitment to sustainable development.[107] The Minister is also required to promote the "development of renewable energy technologies" and is permitted to inspect factories to analyze whether their energy utilization complies with concepts of efficiency and conservation.[108] The Act created two new bodies — the Energy Regulatory Commission and the Rural Electrification Authority — both of which demonstrate Kenya's commitment to sustainable development.[109] Moreover, the Act integrates 1992 Rio Declaration chapters nine through twenty-two on conservation management of resources in order to hold the Ministry of Energy accountable for ensuring compliance is met.[110]

As a result of the Ministry's rigorous efforts, the government installed more than 300,000 solar systems in Kenyan households.[111] Future projects by the Ministry will mainly focus on schools and health facilities.[112] The government uses solar systems to electrify 220 schools and has plans to electrify an additional 497 institutions.[113] Investment in future solar system projects is estimated at $24.8 million U.S. dollars.[114] Additionally, an initial line of 50 MW will be online in 2014.[115] Moreover, since 2009 Kenya has supported widespread access to ICT services through a universal service fund, which promotes capacity building and innovations in ICT services.[116]

Kenya is in the process of building Africa's largest wind farm in Lake Turkana.[117] The project will construct 365 wind turbines in a 24,000-acre area, which will cost $772 million.[118] The Dutch-led project will generate clean energy to meet more than 20 percent of the country's electricity needs.[119] The wind farm is estimated to add an additional 300 MW to the national grid.[120] Still, many rural communities may not enjoy the benefits of the wind turbines, because they will lack connection to the national grid. Unfortunately, Kenya is also planning to open the country's first nuclear power plant to produce twenty-five percent of electricity needs, despite global fears of nuclear waste and impacts on the environment.[121] Additionally, there are no details as to whether Kenya adhered to the 1992 Rio Declaration, which requires Kenya to assess the "environmental impact" of this new plan on the surrounding area and population.[122]

Ghana

Decentralized and off-grid renewable energy sources in Ghana can serve as an alternative to grid electricity to power much of the industrial and service sectors.[123] Ghana's solar PV programs are moving at a fast pace. As of 2008, over 5,000 solar PV systems were installed in Ghana.[124] Even the Ministry of Energy is connected to a 50kWp Solar PV Grid.[125] One successful project is Ghana's Energy Development and Access Project ("GEDAP") to build local and regional solar capacity, which is funded by the World Bank, the International Development Agency, Global Energy Facility, and the African Development Bank.[126] GEDAP installed solar systems for solar street electrification, vaccination refrigeration, and to power home systems.[127]

Several local wind power projects are successful in Ghana. For instance, the Washington D.C. based EnterpriseWorks Worldwide along with Rural Energy and Environment Systems ("REES") of Ghana, and the UK's Scoraig Wind Electric created a program to train local technicians in manufacturing small-scale wind turbines.[128] The materials for the turbines are found locally and maintained by local technicians. The First of the turbines was erected in Accra.[129] By 2004, the project constructed another eight turbines in six off-grid communities.[130] These projects create jobs for local technicians and are cost-effective because all materials are recycled and locally sourced.

In 2011, Ghana's cabinet approved a vital Renewable Energy Bill to promote the development of renewable energy sources and to make the Energy Commission responsible for implementing all government directives.[131] The Bill is also intended to build greater awareness within the population about the advantages of renewable energy.[132] However, the cabinet should incorporate 1992 Rio principles into the final bill, receive public input on the legislation, and include principles in the upcoming Rio+20 outcome document in order to strengthen this vital piece of legislation.

Namibia

Namibia still requires greater institutional reform and a national policy on renewable energy distribution that integrates the 1992 Rio Declaration. The vast land area and low population density in Namibia create difficult challenges for access distribution. Only four to seven percent of the population has access to ICTs.[133] In 2004, the government initiated the Vision 2030 development plan, which aims to make Namibia a "prosperous, harmonious industrialized state by 2030" by allocating billions of dollars towards the development of different industries.[134] The budget expansion suggests that Namibia is making serious efforts to assess long-term solutions.[135] Unfortunately, the plan also allocates large amounts of money to defense instead of energy efficiency, telecommunications, or specific green economy initiatives.[136] The plan does, however, state that the "creation of an enabling environment is essential for the attainment of sustainable development," but this language remains vague and "an enabling environment" does not necessarily equate to a full integration of the 1992 Rio principles.[137] The plan does address ICT deployment and even designates a series of strategies for the government to promote that will make ICT "the most important sector in Namibia" by 2030.[138] Namibia will still require specific investment in renewable energy solutions to foster the sustainable growth strategies outlined in the Vision 2030 agenda.

The Ministry of Mines and Energy ("MME") originally launched the "Promotion of the Use of Renewable Energy Sources" in 1993 as a bold step after the 1992 Rio Declaration to handle the energy crisis and sustainable development.[139] Currently, Namibia has three turbines at the Ruacana hydropower station and is months away from completing construction on a fourth turbine.[140] Additionally, in late 2011, the government of Namibia held talks with regulators, utility developers, financiers, and NGOs to discuss the future of wind power in Namibia.[141]

Role of Non-State Actors

In many ways the 1992 Rio Declaration was ahead of its time in recognizing the role that non-state actors can play in promoting sustainable development and modernizing societies. The 1992 Rio Declaration, however, could not have predicted the major role mobile penetration and ICT solutions would play in assisting non-state actors to achieve the very principles of the Declaration.

Mobile operators can serve as examples of efficient and conservationist practices. Recently, Safaricom, Kenya's largest mobile operator reported the company would use a combination of wind and solar solutions to power eighty-six base stations.[142] At the same time, non-state actors can work with

rural populations to help with principles of technology transfer. For instance, the United Nations Industrial Development Organization ("UNIDO") along with the government of Kenya launched rural energy centers to spread the use of off-grid renewable energy sources in rural Kenya.[143] The centers will promote small business entrepreneurship and provide ICT training to communities. UNIDO also partnered with Microsoft to provide training in ICT solutions for micro-businesses in rural Kenya.[144] Phase one of the joint efforts deployed resources and energy centers in Bungoma, Siaya, and Karachuonyo while phase two will take place in Meru, Ngong, and Dadaab refugee camp.[145]

Non-state actors can also share scientific advancements that incorporate local input. Currently, organizations like *access:energy* create renewable wind turbines for rural Kenyans.[146] *Access: energy* helps citizens participate in their own development by building wind turbines.[147] The Kenyans along with the Yale University and the EngineerAid network make turbines out of scrap metal and car parts.[148] The turbines generate power at a cost that is two to three times lower than equivalent solar PV panels; they can generate enough power for fifty rural homes (about 2.5 kWh per day); and they can be built using locally sourced materials.[149]

Educating the future generation through the use of ICT solutions can help states achieve competitive advantages. Intel has a program designed to create Africa's first WiMAX connected school in Ghana.[150] HP is creating community-learning centers in Ghana.[151] Additionally, the African Youth Initiative and One Village Foundation has founded CatchIT, which is designed to foster the growth of ICT clubs in Ghana.[152] Also, the World Bank along with the University of Ghana is creating research and education networks to connect researchers and institutions from around the world.[153]

Good state practices with regards to energy projects may become transferable. In August 2011, Juwi Solar and Alternative Energy Systems launched the Tsumkwe Energy Project, one of Africa's "largest off-grid solar systems." [154] This project supplies public buildings and one hundred private households with electricity in a rural village in Northern Namibia.[155] Although the system includes some integrated diesel generators, the plant is innovative, only took six-weeks to create, and similar projects may be transferred to the rest of rural Sub-Saharan Africa.[156]

Civil society organizations and companies may function as driving mechanisms. For example, in Namibia, the Information Communication Technology Association ("NICTA") can work closely with the Ministry of Information and Communication Technology in determining mutual objectives in the ICT sector as well as access to renewable energy. Likewise, the ICT Alliance in Namibia serves as a cabinet advisor to the government and therefore can play an active role incentivizing projects that create green economy initiatives in the rural areas.

Challenges and Criticisms

The major challenges associated with renewable energy sources are costs, human capacity, and lack of knowledge. Capacity for investment is limited in all of Sub-Saharan Africa and governments have faced difficulties raising the capital necessary to accelerate renewable energy sectors. Large wind energy systems and solar PV systems require high initial capital costs. For example, solar PV systems generally only maintain three years of self-sufficient management.[157] In Kenya, the Feed-in-Tariffs introduced by the Ministry of Energy in 2008 are helping to ease this problem.[158] The tariffs essentially, allow "power producers to sell renewable energy sources generated electricity ("RES-E") to a distributor at a pre-determined fixed tariff for a given period of time."[159] This will likely accelerate the investment process because power companies can be more innovative and less constrained by other pressing issues juggled by the government. Unfortunately, the tariffs are currently limited to wind, biomass, and small hydro generators.[160] Replacement costs present another major challenge. The average lifespan of a solar PV panel is thirty years and few states actually compute the replacement costs associated with ensuring reliable systems.[161] Implementing fees may be difficult and requires more innovative techniques. One solution might be to create financial incentives that waive the cost of import duties.[162]

Most of Sub-Saharan Africa's states also suffer from lack of ICT-engineers, technicians, and scientists. In Ghana, the government created the Renewable Energy Education Project ("REEP") to facilitate education to strengthen human resource capacity.[163] The REEP project uses ICT solutions like distance learning to help workers receive courses on renewable energy.[164] Partnerships with Indian or Chinese engineers, technicians, and scientists may also serve as a viable solution to this challenge in Africa. That said, the partnerships should stress the need to develop local capacity and avoid over-reliance on importing technicians.

States will also need to educate rural inhabitants on the benefits of renewable energy sources. For instance, in Ghana many rural citizens will continue to perceive renewable energy sources as a "transition source," until the government can expand a national grid.[165] However, the reality of resources makes grid expansion unrealistic. Solar and wind energy are often more cost-effective than extending grid power, so governments should reach out to rural citizens in the form of workshops to educate citizens and challenge any misconceptions.

Rio+20 Conference

In many ways the original 1992 Rio Declaration was ahead of its time. Yet, a great deal has changed in the global environment since 1992. Sub-Saharan Africa has made great progress in the area of sustainable development. Many states have adopted policies to promote sustainable development.[166] Regional players are now more active than international institutions. New sources of investment are prevalent. Nonetheless, emerging challenges face Sub-Saharan Africa and not all states have adopted the goal to eliminate policies that degrade the environment.[167] Paramount among these challenges is the energy crisis, which includes access to energy by rural Africans. Today, the Rio+20 conference presents an opportunity for forward thinking. Several submissions serve as a good point of reference on the energy crisis

for the Rio+20 conference. For example, the Africa Consensus Statement to Rio+20 stated that "access to sustainable energy facilitates development and contributes to the achievements of internationally agreed sustainable development goals including the Millennium Development Goals."[168] The states in this article have national energy or development policies that incorporate principles of conservation, efficiency, and awareness. Moreover, in 2010 governments in Africa increased investment in renewable energy by 280 percent or $3.6 billion.[169] This is the largest increase among all developing regions. Still, more international implementation principles should be discussed and analyzed at the upcoming Rio+20 conference. The governments in Sub-Saharan Africa should also seek a greater role in the discussion of the green economy in Rio+20 to ensure their needs are met and that an outcome document takes African circumstances into consideration.

The Rio+20 conference is an opportunity for international players to discuss ways of incorporating access to ICT solutions within a more concrete and expansive "means of implementing" section.[170] ICTs can play an increasing role in connecting the three pillars of sustainable development — economic, social, and environmental — while also providing mechanisms to facilitate green economies. ICTs can facilitate the fusion of local knowledge and technological knowledge. A future inclusive outcome document already has a point of reference with regard to incorporating ICTs into the process of promoting green economies. The International Telecommunication Union ("ITU") submission is a comprehensive document detailing that the "sustainability of future growth will rely critically on taking advantage of ICTs as drivers and central elements of a greener, fairer, and more sustainable economy."[171] Moreover, since 1992, numerous international documents have recognized the vital role ICTs play in development, including the World Summit on the Information Society, the Broadband Commission for Digital Development, and the Istanbul Programme of Action.[172] Thus, the outcome document to Rio+20 can consolidate the role of ICTs in sustainable development and green economies.

Although the global governance structure attempts to safeguard the integration of 1992 Rio Declaration principles, Rio+20 should consider other mechanisms that can facilitate green economies. A consensus to transition Sub-Saharan African economies for the purpose of promoting sustainable development for all will require great focus. The Rio+20 Outcome Document should, among other things, consolidate these concerns with access to renewable energy and innovative ICTs. Within the context of Sub-Saharan Africa, the Rio Outcome Document may include concrete measures or provisions dedicated to:

- The challenge of access to renewable energy in rural areas and possible innovative solutions.
- The reality that Sub-Saharan Africa is witnessing initial stages of industrialization and therefore requires a different path to sustainable development.
- The acknowledgement that challenges of sustainable development overlap with the challenges facing the implementation of renewable energy sources in Sub-Saharan Africa — lack of finance or investment, the need for capacity building, and educational awareness or "technology transfer."[173]
- The recognition of the role of ICTs in strengthening civil society and leveraging ICT solutions to build sustainable development and eradicate poverty.
- The implementation of national ICT infrastructure development, human resource development, universal access, ICT literacy, and technological research development in addition to the current goals for developing states.[174]
- A goal addressing access to ICT through renewable energy strategies.

The first step for any outcome document is a clear and measurable definition of the green economy. This definition should consider the reality that Sub-Saharan Africa is industrializing, and therefore requires a language that acknowledges different paths to sustainable development. Recognizing that the energy crisis in Africa has serious implications to this future green economy also requires greater cooperation among states to allow for the sharing of best practices in green economy initiatives. This may include practical examples of political direction or policies that incentivize renewable energy projects. The document should include access to information and mobile penetration. Furthermore, the outcome document should encourage states to leverage ICT solutions to strengthen civil society and to eradicate poverty.

The global governance model has not failed, but innovative solutions should be sought to bring about systemic change in Sub-Saharan Africa through cooperation with younger regional players. In Africa this might involve working closely with the African Union ("AU") on a concrete document concerning the green economy, sustainable development, and energy issues. For example, allocating regulatory authority to the Energy Commission within the AU might be more effective and influential than entrusting this authority to an international institution. Globally, India's increasing role in Africa should be leveraged. India's level of investment in Africa is great, with 2010-2011 investment at $52.81 billion.[175] The outcome document from Rio+20 should emphasize investment not only in human capacity, but possibly the creation of a universal fund to ensure Africa integrates 1992 Rio Declaration principles as well as establishes long-term green economy initiatives.

Conclusion

Africa is witnessing a *trente glorieuses*.[176] Nonetheless, high oil prices coupled with global warming concerns have necessitated the development of renewable energy throughout Africa. Much of Africa understands these concerns, but incentive structures should be set so that states continue to diversify their energy supply.

Another challenge in Sub-Saharan Africa is that few statistics and little information are available about various smaller players. Consequently, little to no data exists on a large scale on access issues or ICT solutions beyond Kenya, South Africa, and Nigeria. Timely and accurate research should analyze needs in

the rest of Sub-Saharan Africa and objectively assess whether or not they are being met.

While most of this paper focuses on access to energy sources as a means to facilitate ICT-related growth, I would be remiss if I failed to note that there are many issues that compete for attention and funding in Sub-Saharan Africa. The creation of a green economy does not only require investment in the energy sector. Growth entails the transformation of society from traditional mechanisms to innovative modes of knowledge. Access to ICTs through the use of renewable energy sources is but one way states may transform their societies.

Endnotes: Shining Sun and Blissful Wind: Access to ICT Solutions in Rural Sub-Saharan Africa Through Access to Renewable Sources

[1] This article will confine ICT solutions to primarily mobile platforms, distance learning or other e-learning mechanisms, and e-health or other health related technologies. Energy in this article will refer to both power and electricity interchangeably; however some statistics refer only to access to electricity or electricity supplies and not other sources of power generation.

[2] Wendy Atkins, *This is Africa: Green Light*, This is Africa Online (Jan. 5, 2012), http://www.thisisafricaonline.com/news/fullstory.php/aid/369/Green_light.html.

[3] Africa Mobile Observatory: Driving Economic and Social Development through Mobile Services 39 (GSMA, A.T. Kearney & Wireless Intelligence 2011).

[4] Inare Akinola, *Africa's Green Energy Revolution*, This is Africa Online (Feb. 26, 2012), http://web.thisisafricaonline.com/print/?pid=1792.

[5] *See generally* Africa Mobile Observatory: Driving Economic and Social Development through Mobile Services, *supra* note 3.

[6] GSMA, GSM Association, is an association of mobile operators and related companies dedicated to supporting the standardizing, deployment, and promotion of the GSM mobile telephone system. GSM Association, http://www.gsma.com.

[7] Africa Mobile Observatory: Driving Economic and Social Development through Mobile Services, supra note 3, at 34.

[8] *Id.*

[9] *Id.*

[10] *Kenya,* CIA World Factbook, https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html (last updated Mar. 22, 2012).

[11] *Id.*

[12] Madanmoham Rao, *Mobile Africa Report 2011: Regional Hubs of Excellence and Innovation*, MobileMonday 35 (March 2011).

[13] *See Id.* at 55.

[14] Christine Mungai, *Is Kenyan African Silicon Valley?*, TalkAfrique, *available at* http://www.talkafrique.com/science-and-technology/kenyan-ict-african-silicon-valley (last visited Apr. 24, 2012).

[15] Infrastructure in this context primarily refers to fiber optic cables, satellite dishes, electric wires, or solar and wind power generators, which allow Internet connectivity, computing, and battery charging.

[16] Gabriel Demombynes, *Is Mobile Technology Over-Hyped*, Worldbank Blogs (Mar. 16, 2012, 1:43 PM), http://blogs.worldbank.org/africacan/node/2107.

[17] *About*, Ushahidi, http://ushahidi.com/ (last visited Apr. 24 2012).

[18] Rao, *supra* note 12, at 28.

[19] *Id.*

[20] Africa Mobile Observatory: Driving Economic and Social Development through Mobile Services, *supra* note 3, at 34.

[21] Rao *supra* note 12, at 54.

[22] Africa Mobile Observatory: Driving Economic and Social Development through Mobile Services, *supra* note 3, at 36.

[23] Interview with CEO of Renewable Energy Ventures Joseph Ng'ang'a, ABNDigital (May 4, 2011).

[24] *Id*.

[25] Warigia Bowman, *Governance, Technology and the Search of Modernity in Kenya*, 1 Wm & Mary Pol. Rev. 87, 114 (2010).

[26] Interview with CEO of Renewable Energy Ventures Joseph Ng'ang'a, *supra* note 23.

[27] Bowman, *supra* note 25, at 99.

[28] *See Rio Declaration on Environment and Development*, UN Conference on Environment & Development principle 9 (1992), available at http://www.unesco.org/education/information/nfsunesco/pdf/RIO_E.PDF.

[29] Bowman, *supra* note 25, at 99.

[30] Universal Access Report, (2004) §§ 2.1.4, 4, (Kenya) available at http://www.cck.go.ke/services/universal_acce ss/downloads/FinalUAreport.pdf.

[31] *Ghana,* CIA World Factbook, https://www.cia.gov/library/publications/the-world-factbook/geos/gh.html (last visited Apr. 24, 2012).

[32] *Id.*

[33] Kofi Mangesi, *Survey of ICT and Education in Africa: Ghana Country Report*, InfoDEV.org 1, 5 (2007), http://www.infodev.org/en/Publication.406.html.

[34] *See Id*.; *see also* World Bank Sustainable Development Department, *Ghana's Infrastructure: A Continental Perspective* 21-22, U.N. Doc. WPS5600 (Mar. 2011), *available at* http://www-wds.worldbank.org/servlet/WDS ContentServer/WDSP/IB/2011/03/17/000158349_20110317145909/Rendered/PDF/WPS5600.pdf.; *see also* Africa Mobile Observatory: Driving Economic and Social Development through Mobile Services, *supra* note 3.

[35] World Bank Sustainable Development Department, *Ghana's Infrastructure: A Continental Perspective* 21-22, U.N. Doc. WPS5600 (Mar. 2011), *available at* http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP /IB/2011/03/17/000158349_20110317145909/Rendered/PDF/WPS5600.pdf.

[36] Africa Mobile Observatory: Driving Economic and Social Development through Mobile Services, *supra* note 3, at 36.

[37] *Mobile Technology for Community Health in Ghana: What it is and What Garmeen Foundation Has Learned So Far*, Mobile Technology for Health (Mar. 2011), *available at* http://www.cs.washington.edu/education/courses / cse490d/12sp/docs/MOTECH.pdf.

[38] Garth Moore, *Interview: Peering into Ghana's Mobile Future with Mac-Jordan Degador*, One.org (Jan. 31, 2012), http://one.org/blog/2012/01/31/interview-peering-into-ghanas-mobile-future-with-mac-jordan-degadjor/.

[39] *Background to the Evolution of GARNET*, GARNET, http://www.garnet.edu.gh/ (last visited Apr. 24, 2012).

[40] *Rio Declaration on Environment and Development, supra* note 28, at ch. 21.

[41] *See Id.* at ch. 29.

[42] Evan Welsh, *Nut Farmers in Ghana Crack Into Mobile Technology*, Forbes, (Sept. 26, 2011), *available at* http://www.forbes.com/sites/sap/2011/09/26/nut-farmers-in-ghana-crack-into-mobile-technology/.

[43] *Id*.

[44] *Id.*

[45] Moore, *supra* note 38.

[46] Africa Mobile Observatory: Driving Economic and Social Development through Mobile Services, *supra* note 3, at 33.

[47] *Ghana's Infrastructure: A Continental Perspective*, *supra* note 35, at 21-22.

[48] *Challenges of Solar PV for Remote Electrification in Ghana*, Ministry of Energy (2004), http://www.zef.de/fileadmin/webfiles/renewables/praesentations/Ahiataku-Togobo_solar%20PV%20Ghana.pdf.

[49] *Id*.

[50] *Namibia,* CIA World Factbook, https://www.cia.gov/library/publications/the-world-factbook/geos/wa.html (last updated Mar. 27, 2012).

[51] *Id*.

[52] European Commission, Country Strategy Paper and National Indicative Programme for the Period 2008-2013 1, 11 (2008), *available at* http://ec.europa.eu/development/icenter/repository/scanned_na_csp10_en.pdf.

[53] *Namibia, supra* note 50.

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4 *See* Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A1CONF.151/26, Preamble §§ 1.1, 1.3 (1992)(emphasis added).

5 *See e.g.*, Kirby, Alex, *Will Rio+20 bring anything new to the table?*, The Guardian (Sept. 30, 2011, 11.32 AM) http://www.guardian.co.uk/sustainable-business/what-will-happen-at-rio-2012-business-sustainablity; Clark, Pilita, *Rio + 20 talks in 'need of vision and direction,'* The Financial Times (Apr. 23, 2012, 11:29 PM) http://www.ft.com/intl/cms/s/0/253d9f90-87c6-11e1-ade2-00144feab49a.html#axzz1ugiyMqtf.

6 Brazil and the European Parliament have both expressed support for the principle of non-regression. *See* Brazil Submission To The Rio+20 Preparatory Process (Nov. 1, 2011) http://www.uncsd2012.org/content/documents/BRAZIL%20Submission%20%20English%201.11.11doc.pdf; European Parliament resolution on developing a common EU position ahead of the United Nations Conference on Sustainable Development (Rio+20) Eur. Parl. Doc. P7_TA(2011)0430 (2011), http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2011-430.

7 , Robert Glicksman, *The Justifications for Nondegradation Programs in U.S. Environmental Law*, The Non Regression Principle In Environmental Law (M. Prieur & G. Sozzo, eds.) (forthcoming).

8 *See e.g.*, *IPCC releases full report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*, International Panel on Climate Change (Mar. 28, 2012), http://www.ipcc.ch/news_and_events/docs/srex/srex_press_release.pdf (concluding that human activities have likely led to increased frequency of certain extreme climate events over past 50 years).

9 *Prospect of limiting the global increase in temperature to 2º C is getting bleaker*, International Energy Agency (May 30, 2011), http://www.iea.org/index_info.asp?id=1959 (IEA estimates energy-related carbon dioxide emissions in 2010 were the highest in history, while an estimated 80% of projected emissions from the power sector in 2020 are already locked in).

10 Walter V. Reid, et al., Millennium Ecosystem Assessment: Ecosystems and Human Well-being Synthesis 1 (2005) http://www.maweb.org/documents/document.356.aspx.pdf.

11 Secretariat of the Convention on Biological Diversity, *Global Biodiversity Outlook 3 5* (2010) http://www.cbd.int/doc/publications/gbo/gbo3-final-en.pdf.

12 Though, as Perry Wallace's article "International Investment Law and Arbitration, sustainable development and Rio +20: Improving Corporate Institutional and State Governance," points out later in this issue, there are still many sectors of the investment community who remain disconnected from the discourse on sustainable development and need to be brought into the discussion.

13 World Bank, *Advancing Sustainable Development: the World Bank and Agenda 21*, Environmentally Sustainable Development Studies and Monographs Series No. 19 (1997) .

14 Norichika Kanie. *Governance With Multilateral Environmental Agreements: A Healthy or Ill-Equipped Fragmentation*, Global Environmental Governance, Center for UN Reform Education 68 (Walter Hoffmann and Lydia Swart eds.) (May 2007) (citing to multiple studies putting the number at around 500); c.f., Gregory L. Rose, *Gaps in the Implementation of Environmental Law at the National, Regional, and Global Level* (Oct. 12-13, 2011)www.unep.org/delc/Portals/24151/FormatedGapsEL.pdf.; *Discussion paper for First Preparatory Meeting of the World Congress on Justice*, Governance and Law for Environmental Sustainability at 6 (Oct. 12-13, 2011) (estimating a total of 700 environmental agreements, including bilateral and regional agreements).

15 Rose *supra*, note 14.

16 Christopher Wood, Environmental Impact Assessment in Developing Countries: An Overview 4 (Nov. 24-25, 2003), www.sed.man.ac.uk/research/iarc/ediais/pdf/Wood.pdf.

17 *Id*. A number of the training materials are now available online. *See e.g.*, http://www.unep.ch/etb/publications/enviImpAsse.php.

18 *Id*. at 20 (evaluating the EIA requirement on criteria including their legal basis, coverage, consideration of alternatives, screening of actions, scoping of impacts, and reporting requirements).

19 Abdul-Sattar Nizami, et al., *Comparative analysis using EIA for developed and developing countries: case studies of hydroelectric power plans in Pakistan, Norway, and Sweden*, 18 Int'l J. Sustainable Dev. & World Ecology 134-142 (2011) http://www.tandfonline.com/doi/pdf/10.1080/13504509.2011.559399; Hummod A. Naser, *Evaluation of the Environmental Impact Assessment in Bahrain*, 3 J. of Envtl. Protection 233-239 (2012), www.scirp.org/journal/PaperDownload.aspx?paperID=17471;Onyenekenwa Cyprian Eneh, *Managing Nigeria's Environment: The Unresolved Issues,* 4 J. Envtl. Science & Technology 250 (2011), http://scialert.net/qredirect.php?doi=jest.2011.250.263&linkid=pdf.

20 For example, the NASA Landsat program has been collecting information from the Earth's surface for nearly 40 years now, generating a historical archive unmatched in quality, detail, coverage, and length. The information generated from this observation has been used to study a wide variety of subject matter, from changes in global urbanization, impacts on coastlines following disasters like hurricane Katrina, and for studies of water consumption from agriculture. *Landsat then and now*, nasa.gov (Jan. 11, 2012), http://landsat.gsfc.nasa.gov/about/.

21 Adal Najim et al., Global Environmenal Governance: A Reform Agenda, 10-11(2006), http://www.iisd.org/pdf/2006/geg.pdf (listing two pages of members of the UN Environmental Management Group as an example of the breadth of different actors engaging in environmental governance activities).

22 *Id*. at 14-17. *See also*, Kanie, *supra* note 14.

23 *See* Marco Sibaja, *Critics: Biggest UN Summit heading toward failure*, foxnews.com (May 11, 2012, http://www.foxnews.com/world/2012/05/11/critics-biggest-un-summit-heading-toward-failure/.

24 D. Hulme & S. Fukuda-Parr, International Norm Dynamics and 'the End of Poverty': Understanding the Millennium Development Goals (MDGs) 14-15 (2009), http://www.eadi.org/fileadmin/MDG_2015_Publications/fukuda-parr_and_hulme_2009_international_norm_dynamics.pdf. *See also*, Jacob Scherr, *Reflections on the Race to Rio: Crowdsourcing Sustainability at Earth Summit 2012*, nrdc blog (May 14, 2012), http://switchboard.nrdc.org/blogs/jscherr/reflections_on_the_race_to_rio.html ("It's easy to feel depressed about the state of the Rio+20 preparations [after two weeks of negotiations]…. The governments managed to reach agreement on less than two dozen paragraphs and have agreed to return for another week of talks at the end of May to tackle the remaining 400.").

25 *Green economy policies, practices and initiatives*, uncsd2012.org, http://www.uncsd2012.org/rio20/gedatabase.html.

26 *Natural Capital Accounting*, worldbank.org, http://go.worldbank.org/R0F611S5F0.

27 Jeff Waage, et al., The Millennium Development Goals: a cross-sectoral analysis and principles for goal setting after 2015 (2010), http://download.thelancet.com/flatcontentassets/pdfs/S0140673610611968.pdf.

28 *Id*.; *see also*, Sumner, Andrew and Thomas Lawo, The MDGs and Beyond: Pro-Poor Policy in a Changing World (2010), http://www.eadi.org/fileadmin/Documents/Publications/policy_wp/EADI_Policy_Paper_March_2010.pdf.

29 Consider also Avilés' discussion in this issue's article "Sustainable Development and the Legal Protection of the Environment in Europe" regarding the difficulty of applying the "vague" principles of sustainable development in the resolution of legal disputes. To the extent that sustainable development is comprised of sometimes competing meta-principles, they may be too complex to break down into meaningful rules of application or metrics.

30 Maria Ivanova , *Institutional design and UNEP Reform: historical insights on form, function, and financing*, 88 Int'l. Affairs 565, 570 (2012), http://onlinelibrary.wiley.com/doi/10.1111/j.1468-2346.2012.01089.x/pdf.

Endnotes: Moving from Principles to Rights: Rio 2012 and Access to Information, Public Participation, and Justice

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[27] *See* UNEP, Guidelines for the Development of National Legislation on Access to Information, Public Participation and Access to Justice in Environmental Matters (Feb. 2010), http://www.unep.org/DEC/PDF/GuidelinesAccesstoJustice2010.pdf.

[28] *Id.*

[29] See *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* (June 1998), http://www.unece.org/fileadmin/DAM/env/pp/documents/cep43e.pdf (referring to the Aarhus Convention, an agreement that encourages public access to information and justice on environmental issues) [hereinafter Aarhus].

[30] Aarhus, *id.* at 5.

[31] Aarhus, *id.* at 5.

[32] *See* United Nations Economic Commission for Europe, *The Aarhus Convention's Compliance Committee Receives 50th Communication* (explaining that the Compliance Committee review cases of alleged non-compliance by a Party to the Aarhus Convention) http://www.unece.org/press/pr2010/10env_p19e.htm..

[33] The Kiev Protocol on Pollutant Release and Transfer Registers (May 2003), http://www.unece.org/index.php?id=2948&type=111.

[34] *See id.*

[35] *See* Convention on Environmental Impact Assessment in a Transboundary Context (Feb. 1991), http://www.unece.org/fileadmin/DAM/env/eia/documents/legaltexts/conventiontextenglish.pdf (referring to the Espoo Convention where parties agreed to prevent, reduce and control adverse transboundary environmental impact).

[36] Convention on Environmental Impact, *id.*

[37] United Nations Economic Commission for Europe, Status of Ratification, http://www.unece.org/fileadmin/DAM/env/eia/ratification.htm.

[38] David Banisar, Freedom of Information Around the World 2006: A Global Survey of Access to Government Information Laws (July 2006), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1707336.

[39] *Id.* at 17.

[40] See, e.g., Const. Art. 225 (Braz.).

[41] Mark Stephen, *Environmental information disclosure programs: They work, but why?,* Social Science Quarterly 190 — 205 (2003).

[42] Steve DeVito, US EPA Toxics Release Inventory International Programs Officer. Personal Communication, February 2008.

[43] North American Pollutant Release and Transfer Register, http://www.cec.org/Page.asp?PageID=924&SiteNodeID=596.

[44] European Pollutant Release and Transfer Register (E-PRTR), http://prtr.ec.europa.eu/.

[45] ARTICLE 19, Changing the Climate for Freedom of Expression and Freedom of Information: Human Rights Responses to Climate Change (Dec. 2009), http://www.article19.org/data/files/pdfs/publications/changing-the-climate-for-freedom-of-expression-and-freedom-of-information.pdf.

[46] ARTICLE 19, Access to Environmental in China: Evaluation of Local Compliance (Dec. 2010), http://www.article19.org/pdfs/reports/access-to-environmental-information-in-china-evaluation-of-local-compliance.pdf.

[47] *See* Foti J. et al., *supra* note 3, at 57.

[48] *See* Foti J. et al., *supra* note 3, at xii.

[49] Foti J. et al., *supra* note 3, at xii.

[50] Foti J. et al., *supra* note 3; ARTICLE 19, Information Saves Lives During Humanitarian Crises (Mar. 2011), http://www.article19.org/pdfs/press/information-saves-lives-during-humanitarian.pdf.

[51] Foti J. et al., *supra* note 3, at x.

[52] John Glasson, Riki Therivel & Andrew Chadwick, Introduction to environmental impact assessment 138 (Routledge, 3rd ed. 2005).

[53] Foti J. et al., *supra* note 3*,* at x.

[54] *See* World Bank, SEAs Overview, http://wbi.worldbank.org/wbi/topic/climate-change (*last visited* May 10, 2012).

[55] Directive 2001/42/EC, http://www.central2013.eu/fileadmin/user_upload/Downloads/Document_Centre/OP_Resources/04_SEA_directive_2001_42_EC.pdf.

[56] These include China, the Philippines, Thailand, and Vietnam.

[57] George Pring & Catherine Pring, The Access Initiative Greening Justice: Creating and Improving Environmental Courts and Tribunals 9 (2009), http://www.accessinitiative.org/sites/default/files/Greening%20Justice%20FInal_31399_WRI.pdf.

[58] *Id*. at 1.

[59] *Id.* at 107-108.

[60] Timeliness refers to the amount of time taken to obtain a remedy.

[61] *See, e.g.,* Const., Art. 22 (2010) (Kenya).

[62] *Voice and Choice, supra* note 3, also found that framework laws on access to information had made significant progress while framework laws on and practice on public participation and access to justice lagged behind.

[63] Foti J. et al., World Resources Institute, A Seat at the Table: Including the Poor in Decisions for Development and Environment 23 (2010), http://www.wri.org/publication/a-seat-at-the-table.

[64] Universal Declaration of Human Rights, Article 19, G.A. Res. 217 (III) A, U.N. Doc. A/RES/217(III) (Dec. 10, 1948).

[65] Article 19, *supra* note 46, at 20, 61.

[66] Article 19, *supra* note 46, at 20, 61.

[67] UNEP Dec. GCSS.XI/11, Environmental Law (Part A), http://www.unep.org/gc/GCSS-XI/proceeding_docs.asp (annexed to the proceedings of the special session).

[68] Non-UNECE States may only accede "upon approval by the Meeting of the Parties." Convention on Environmental Impact Assessment in a Transboundary Context (the "Espoo Convention), U.N. ECE, art. 17, ¶3 (Feb. 25, 1991).

[69] United Nations Economic Commission for Europe, Status of ratification, http://www.unece.org/env/pp/ratification.html.

[70] Stec, et al., U.N. ECE, The Aarhus Convention: An Implementation Guide, v (2000) http://www.unece.org/fileadmin/DAM/env/pp/acig.pdf (Secretary-General of the United Nations, Kofi A. Annan, suggesting that Aarhus Convention may serve as a model for "strengthening the application of principle 10 in other regions of the world").

[71] *See, e.g.,* United Nations Convention against Corruption, G.A. Res. 58/4 (Oct. 31, 2003).

[72] Organization of American States, Declaration of Santa Cruz +10 (Dec. 5, 2006), http://www.oas.org/dsd/Documents/DECLARACTION+10.pdf.

[73] *See, e.g.*, *Reyes et al. v. Chile*, Inter-Am. C.H.R., Inter-American Court of Human Rights, (Sept. 19 2006), http://www.elaw.org/node/2546.

[74] *See generally* Organization of American States, Access to Information, http://www.oas.org/dil/access_to_information.htm (last visited May 10, 2012).

[75] *See, e.g.,* North American Free Trade Agreement, U.S.-Can.-Mex., Dec. 17, 1992, 32 I.L.M. 289 (1993); U.S.-Colom. Trade Promotion Agreement, U.S.-Colom., Nov. 22, 2006 (entry into force May 15, 2012).

[76] Article 19, supra note 46, at 166-167; Lei de Liberdade de Informação, No.12.527, (Braz. Nov. 28, 2011).

[77] Banisar, *supra* note 38, at 93-95.

[78] *See* Foti J. et al., *supra* note 3, at 48.

[79] *See* Organisation for Economic Co-Operation and Development, UN Economic Commission for Latin America and Caribbean, OECD Environmental Performance Reviews — Chile (Jan. 24, 2005), http://www.oecd.org/dataoecd/63/44/34856244.pdf.

[80] *See id*.

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[11] U.N. High Comm'r for Human Rights, Statement for 9 Aug., the International Day of the World's Indigenous People (Apr. 16, 2012), http://www.ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx?NewsID=11284&LangID=E.Aug.

[12] *See, e.g.*, *Salween Dams,* International Rivers, http://www.internationalrivers.org/southeast-asia/burma/salween-dams (last visited Dec.Dec. 18, 2010) (reporting that ethnic minority groups, who are already marginalized and repressed by the Burmese military junta, are "not only being systematically and forcibly moved from their homes, but also robbed, tortured, raped or executed" to clear way for the Salween dams and warning that local ethnic groups, particularly in regions that are not ethnically Burmese and typically enjoy considerable autonomy over their own affairs, could lash back in resentment at what are perceived to be deals that do not provide any local benefits and worse, trample on their rights in the process.); Ben Blanchard, *China Risks Backlash with Myanmar Investments*, Reuters, Jul. 9, 2010, http://af.reuters.com/article/energyOilNews/idAFTOE66804H20100709?sp=true (Indeed, in Apr. 2010, a series of bombs exploded at the site of a controversial hydropower project sponsored by a Chinese company. As one expert explained the violence, "[w]hen you're in a situation where you can't retaliate against your own government, you can retaliate against perhaps investment by outsiders").

[13] *See* Infrastructure Network, *supra* note 8, at 2.

[14] *Id.*; Wright, *supra* note 8, at 56.

[15] *See* Herwig Peeters, *Sustainable Development and the Role of the Financial World*, 5 Env't, Dev. & Sustainability 197, 203 (2003) (finding that between 1990 and 1997, annual project finance volumes grew nine-fold from less than $5 billion to over $50 billion and in 1990, for every dollar of Official Development Assistance from multilateral development banks and the International Monetary Fund, there was less than one dollar of long-term private capital flows of FDI; however, already as of 2003, FDI had eclipsed ODA four times over). *See generally* Benjamin C. Esty, Carin-Isabel Knoop, and Aldo Sesia, Jr, *The Equator Principles: An Industry Approach to Managing Environmental and Social Risks*, Harvard Business School Publishing Case No. 9-205-114 (2005); Infrastructure Network, *supra* note 8; Marco Sorge, *The Nature of Credit Risk in Project Finance,* BIS Q. Rev. (2004).

[16] Infrastructure Network, *supra* note 8, at vii (affirming that since 2003, the Bank's infrastructure lending has been gradually recovering and approaching the level of the 1987-98 period, driven in part by a return to financing hydroelectric dams, such as the Bujagali dam in Uganda, Bumbuna in Sierra Leone, Felous in Senegal, Nam Theun 2 in Laos, and Rampur in India). *See* Leslie Berliant, *World Bank Puts Hydropower Back Into Favor, NGOs Do Not*, Inside Climate News (July 31, 2009), http://solveclimate.com/blog/20090731/world-bank-puts-hydropower-back-favor-ngos-do-not; *see also* World Bank, *Directions in Hydropower: Scaling up for Development*, 21 Water Working Notes ix (June 2009); *World Bank Clings to Fossil Fuels, Stumbles on Clean Energy*, 71 Bretton Woods Project (June 17, 2010), http://www.brettonwoodsproject.org/art-566379 (claiming that the Bank's financing of fossil fuel projects has also reached all-time highs, noting that apparent commitments to limit investment in fossil fuels are belied by other statements suggesting that coal will remain in the mix of the Bank's portfolio for some time into the future, and that these trends may potentially undermine the Bank's attempts to transform its energy portfolio, half of which, according to the SFDCC's projected targets, would go to "low carbon" investments by 2011).

[17] *See generally* Galit Sarfaty, *Why Culture Matters in International Institutions: The Marginality of Human Rights at the World Bank*, 103 Am. J. Int'l L. 647 (2009); Ibrahim F. I. Shihata, The World Bank Inspection Panel: In Practice (2000); Darrow,.*supra* note 9, at 58.

[18] Wright, *supra* note 8, at 66.

[19] *See* Enrique R. Carrasco & Alison K. Guernsey*, The World Bank's Inspection Panel: Promoting True Accountability Through Arbitration*, 41 Cornell Int'l L.J. 577, 594-601 (2008) (canvassing criticisms of the Word Bank Inspection Panel); Bridgeman, *supra* note 10, at 225; Daniel D. Bradlow, *Private Complainants and International Organizations: A Comparative Study of the Independent Inspection Mechanisms in International Financial Institutions*, 36 GEO. J. INT'L L. 403 (2005) (providing a comparative review of the strengths and weaknesses of accountability mechanisms).

[20] Bradlow, *supra* note 19, at 211; *see generally* Niamh O'Sullivan & Brendan O'Dwyer, *Stakeholder Perspectives on a Financial Sector Legitimation Process: The Case of NGOs and the Equator Principles,* 22, Acct., Auditing & Accountability J. 553 (2009).

[21] *See generally*, *id*.

[22] The Collevecchio Declaration, http://www.okobank.hu/doc/collevecchio_declaration.pdf (last visited Apr. 14, 2012).

[23] *Id.* at 1-2.

[24] BankTrack, *Going 'Round in Circles: An Overview of BankTrack-EPFI Engagement on Equator Principles* , 3 (Jan. 2010) (describing Collevecchio as "the first ever NGOs position on what sustainable banking should look like, asking banks to make six commitments to sustainability, do no harm, responsibility, accountability, transparency and good governance" that "[o]utline[d]… basic requirements on all these areas").

[25] Wright, *supra* note 8, at 57.

[26] *Id.*

[27] *See generally* The Equator Principles, http://www.equator-principles.com/resources/equator-principles.pdf (last visited Apr. 15, 2012).

[28] *Id.* at 1.

[29] *Id.*

[30] *Id.*

[31] *Id.*

[32] Benjamin C. Esty, *An Overview of Project Finance & Infrastructure Finance — 2006 Update*, Harvard Business School (2007); Michelle Phillips & Mitchell Pacelle, *Banks Accept "Equator Principles" — Citigroup, Barclays, Others To Shun Projects Hurting Environment, Livelihoods*, Wall St. J., June 4, 2003, at A2.

[33] *See* About the Equator Principles, http://www.equator-principles.com/index.php/about-ep/about (last visited Apr. 15, 2012).

[34] *Id.*

[35] *Id.*

[36] *World Comm'n on Dams, Dams and Development: A New Framework for Decision-Making, International Institute on Environment and Development*, 108 Drylands Programme 6 (2001) (giving an overview of the WCD, which consisted of twelve members chosen from a cross-section of interests, views and institutions, who relied in their work on four regional public consultations, and a permanent Forum of sixty-eight members from thirty-six countries and pioneered a new funding model: fifty-four public, private and civil society organizations contributed to its operations); *see generally* Navroz K. Dubash, *Viewpoint — Reflections on the WCD as a Mechanism of Global Governance*, 3 Water Alternatives 416 (2010).

[37] *See* Marina Ottaway, *Corporatism Goes Global: International Organizations, Nongovernmental Organization Networks, and Transnational Business*, 7 Global Governance 265, 279 (2001).

[38] *See* Daniel Bradlow, *The World Commission on Dams' Contribution to the Broader Debate on Development Decision-Making*, 16 Amer. U. Int'l L. R. 1531, 1546 (2001) (arguing that the WCD contributed to an ongoing shift in development decision-making that blurs the line between political and technical approaches through a procedural approach).

[39] *See generally* BankTrack, *The Outside Job,: Turning the Equator Principles Towards People and .Planet*, (Oct. 2011).

[40] Abbott & Snidal, *supra* note 3, at 520.

[41] Vogel, *supra* note 3, at 262.

[42] *Id.* at 267; *see also* Tim Bartley, *Certifying Forests and Factories: States, Social Movements, and the Rise of Private Regulation in the Apparel and Forest Product Field,* 31 Pol. & Soc'y 433, 452 (2003).

[43] John G. Ruggie, *Reconstituting the Global Public Domain — Issues, Actors, and Practices*, 10 Eur. J. Int'l Rel. 499, 519 (2004) (explaining that a few of the more well-known initiatives were created in close collaboration with state actors, including the Fair Labor Association — originally the Apparel Industry Partnership promoted by the Clinton Administration — the Extractive Industries Transparency Initiative and Ethical Trading Initiative, and the Principles on Security and Human Rights, started with cooperation of the United States and several other governments other initiatives were created under the auspices of multilateral international organizations, such as the Organization for Economic Cooperation and Development's Guidelines for Multinational Enterprises and the United Nation's Global Compact).

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[46] . Kenneth Abbott & Duncan Snidal, *The Governance Triangle: Regulatory Standards Institutions and the Shadow of the State, in* The Politics of Global Regulation 44, 49 (Walter Mattli & Ngaire Woods eds., 2009).

[47] Graeme Auld, Steven Bernstein & Benjamin Cashore, *The New Corporate Social Responsibility*, 33 Ann. Rev. Env't & Resources 413, 424 (2008).

[48] *See Guide to Industry Initiatives in Corporate Social Responsibility*, Ethical Corporation (2009), Oct.www.businessinsociety.eu/resources/3170 (presenting a list of 31 multi-stakeholder industry initiatives); *see generally* Business Regulation and Non-State Actors: Whose Standards? Whose Development (Peter Utting, Darryl Reed & Ananya Mukherjee-Reed eds., 2012).

[49] Abbott and Snidal, *supra* note 3, at 46.

[50] *Id.*

[51] *Id.*

[52] *Id.* at 63.

[53] *Id.* at 48.

[54] *Id.* at 70.

[55] *Id.*

[56] *Id.* at 46.

[57] *Id.* at 75, 86.

[58] *Id.* at 75.

[59] *Id.*

[60] *Id.* at 83.

[61] *Id.* at 64.

[62] *Id.* at 85.

[63] *Do the Equator Principles get Reviewed/Revised Regularly?*, Equator Principles, http://www.equator-principles.com/index.php/all-faqs/42-about/frequently-asked-questions/27 (last visited Apr. 17, 2012).

[64] *Id.*

[65] *Id.*

[66] *Id.*

[67] *See* Memoranda, *The Equator Principles*, Equator Principles, 6, http://www.equator-principles.com/resources/equator_principles.pdf (last updated June 2006) (applying the principles to all new project financings globally with total project capital costs of US$10 million or more, and across all industry sectors. Additionally while the principles intentionally applied retroactively, they will be applied to all project financings covering expansion or upgrade of an existing facility where changes in scale or scope may create significant environmental and/or social impacts, or significantly change the nature or degree of an existing impact. In these cases, EPFIs commit to make the client aware of the content, application and benefits of applying the Principles to the anticipated project, and request that the client communicate to the EPFI its intention to adhere to the requirements of the Principles when subsequently seeking financing).

[68] *See id*.

[69] *See Equator Principles and Citi*, Citigroup, http://www.citigroup.com/citi/environment/equator.htm (last visited Apr. 16, 2012).

[70] *See The Equator Principles*, *supra* note 67 at 2-3, 7.

[71] *Id.* at 3, 5.

[72] *Id.* at 5.

[73] *Id.* at 4.

[74] *Id.* at 2, 7.

[75] *Id.* at 3.

[76] *Id.*

[77] *See Guidance Notes*, International Finance Corporation (Jan. 1, 2012), http://www1.ifc.org/wps/wcm/connect/e280ef804a0256609709ffd1a5d13d27/GN_English_2012_Full-Document.pdf?MOD=AJPERES.

[78] World Bank, Environmental, Health, and Safety (EHS) Guidelines (2007), http://www1.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES.

[79] *See* Suellen Lazarus, *Equator Principles Strategic Review: Final Report*, The Equator Principles (Feb. 17, 2011), http://www.equator-principles.com/resources/exec-summary_appendix_strategic_review_report.pdf.

[80] *See Important Update on the Progress and Timeline of the EP III Update Process*, Equator Principles, http://www.equator-principles.com/index.php/all-news-media/ep-association-news (last visited Apr. 16, 2012).

[81] *See* Letter from Shawn Miller, Chair of EPFI Steering Committee, to Greg Radford, Director, Environmental & Social Development (July 28, 2010), http://www.equator-principles.com/resources/EPFI_Letter_to_IFC_Jul2010.pdf.

[82] Jan.Apr.*See generally History of the Equator Principles*, Equator Principles, http://www.equator-principles.com/index.php/about-ep/history (last visited Apr. 17, 2012).

[83] *See* Motoko Aizawa, *Green Credit, Green Stimulus, Green Revolution? China's Mobilization of Banks for Environmental Cleanup,* 19 Journal of Environment and Development 119 (2010), *available at* http://jed.sagepub.com/content/19/2/119.full.pdf+html.

[84] *See The Outside Job: Turning the Equator Principles Towards People and Planet*, BankTrack 2, 3 (Oct. 2011), http://www.banktrack.org/download/the_outside_job/111021_the_outside_job_final.pdf.

[85] *See The Equator Principles Strategic Review*, Equator Principles, http://www.equator-principles.com/index.php/governance-management/the-equator-principles-strategic-review (last visited Apr. 17, 2012).

[86] *See Unproven Equator Principles*, BankTrack, 1-2 (June 2005), http://www.banktrack.org/download/unproven_equator_principles_a_banktrack_statement/050606_unproven_equator_principles_a_banktrack_statement.pdf.

[87] *See* BankTrack, http://www.banktrack.org/ (last visited Apr. 16, 2012).

[88] *See The Outside Job,*, *supra* note 84, at 34-36.

[89] *See id.*

[90] *See The Outside Job*, *supra* note 84, at 8; Johan Frijns, *Follow up on Washington Meeting*, BankTrack, 3 (June 23, 2009), http://www.banktrack.org/download/follow_up_letter_on_washington_ngo_epfi_meeting/090623_follow_up_letter_to_epfis_on_washington.pdf.

[91] *See generally* Niamh O'Sullivan & Brendan O'Dwyer, *Stakeholder Perspectives on a Financial Sector Legitimation Process: The Case of NGOs and the Equator Principles,* 22 Accounting, Auditing & Accountability Journal 553 (2009), http://search.proquest.com/docview/211296111?accountid=8285.

[92] *See generally What we did in 2010: Summary of BankTrack Activities*, BankTrack, 5, http://www.banktrack.org/manage/ems_files/download/annual_report_2010_41/110322_annual_report_2010.pdf (last visited Apr. 16, 2012).

[93] *Id.*

[94] *See The Outside Job*, *supra* note 84, at 5-7, 10-11.

[95] *Id.* at 7-9.

[96] *Id.* at 8.

[97] *Id.* at 10-12.

[98] *Id.* at 13-14.

[99] *See* O'Sullivan, *supra* note 91, at 553-87 (noting one banker stated EPFIs were "already regulated by the fact that they operate in the glare of the NGO scrutiny," a sentiment echoed by IFC Director of Environmental and Social Development) (explaining resentment of statements saying it is up to "NGOs to keep the pressure on, to make sure things are implemented").

[100] *See* Kenneth Abbott, *The Governance Triangle: Regulatory Standards Institutions and the Shadow of the State*, Princeton University Press, 7-14 (Mar. 2008), http://www.asil.org/files/abbotsnidal_Mar.2008.pdf.

[101] *See* Ottaway, *supra* note 37 (noting that NGOs do not necessarily represent the public or common interests as much as their own private interests and sometimes in contradictory ways, and even when they do have overlapping interests or claim to represent those of others (i.e., globally Northern NGOs representing disenfranchised groups in the global South), this is not without concerns, either about accountability or paternalism; moreover, they note NGOs' are institutions with organizational prerogatives of survival and thus, fundraising, which can come into tension with their missions, and more broadly, as organizations they can develop pathologies. In addition, some NGOs, like unions, have direct material interests in the issues in which they engage themselves).

[102] Nov.*See generally* International Finance Corporation, About IFC, http://www1.ifc.org/wps/wcm/connect/CORP_EXT_Content/IFC_External_Corporate_Site/About+IFC/ (last visited Apr. 17, 2012).

[103] *See The Equator Principles Ass'n — Governance & Mgm't*, Equator Principles, http://www.equator-principles.com/index.php/governance-management/governance-and-management (last visited Apr. 17, 2012).

[104] *See The Equator Principles Working Groups*, Equator Principles, http://www.equator-principles.com/index.php/best-practice-resources/working-groups (last visited Apr. 17, 2012).

[105] *See The Equator Principles Ass'n — Governance & Mgm't*, *supra* note 103.

[106] *See The Equator Principles Ass'n — Governance & Mgm't*, *supra* note 103.

[107] *See generally The Equator Principles Strategic Review*, *supra* note 85.

[108] *See The Equator Principles*, *supra* note 67, at 5 (stating principle 7: "Indepent Review: For all Category A projects and, as appropriate, for Category B projects, an independent social or environmental expert not directly associated with the borrower will review the Assessment, AP and consultation process documentation in order to assist EPFI's due diligence, and assess Equator Principles compliance").
[109] *See* Abbott, *supra* note 100, at 3, 4.
[110] *See Investor Group Representing over US$15 Trillion Calls for Action on Climate Change*, United Nations Environment Programme, http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=651&ArticleID=6830&l=en (last visited Apr, 17, 2012) (more than one-quarter of global market capitalization).
[111] *Id.*
[112] *See About Us*, Principles for Responsible Investment, http://www.unpri.org/about/ (last visited Apr. 17, 2012).
[113] *See Signatories*, Principles for Responsible Investment, http://www.unpri.org/signatories/ (last visited Apr. 17, 2012).
[114] *See* Jon Entine, UN Global Compact: Ten *Years* of *Greenwashing?*, Ethical Corporation (Nov. 1, 2010), http://www.ethicalcorp.com/governance-regulation/un-global-compact-ten-years-greenwashing; Elaine Cohen, *UN Global Compact: Celebrating Ten Years of What?,* CSRWire (Nov. 23, 2010), http://www.csrwire.com/csrlive/commentary_detail/3325-The-UN-Global-Compact-celebrates-10-years-of-what-; Dec.*Ten Years of Setting the Record Straight*, United Nations Global Compact, http://unglobalcompact.wordpress.com/2010/11/04/10-years-of-setting-the-record-straight/ (last visited Apr. 17, 2012); Press Release: UN Global Compact punishes companies for failing to play its greenwash game, but not for violating its Principles (Mar. 29, 2012), http://info.babymilkaction.org/pressrelease/pressrelease29mar12 (arguing that while companies are expelled for failing to submit COPs, other companies, such as Nestlé, a Patron Sponsor of the Rio+20 Corporate Sustainability Forum, "get away with submitting misleading reports and systematically violating the Global Compact Principles").
[115] *See* Jo Confino, *Cleaning up the Global Compact: dealing with corporate free riders*, The Guardian (Mar. 26, 2012), http://www.guardian.co.uk/sustainable-business/cleaning-up-un-global-compact-green-washApr.; *see also About Us*, United Nations Global Compact, http://www.unglobalcompact.org/AboutTheGC/index.html (last visited Apr. 17, 2012).
[116] *See Corporate Responsibility: Investors Give New Twist to Good Cop/Bad Cop routine*, Principles for Responsible Investment, http://www.unpri.org/files/PRI_GCphII_final.pdf (last visited Apr. 17, 2012).
[117] *Id.*
[118] *Id.*
[119] *See Update of IFC's Pol'y and Performance Standards on Environmental and Social Sustainability, and Access to Information Pol'y*, International Finance Corporation (Apr. 14, 2011), http://www1.ifc.org/wps/wcm/connect/fca42a0049800aaaaba2fb336b93d75f/Board-Paper-IFC_SustainabilityFramework-2012.pdf?MOD=AJPERES (revising standards to "introduce[] a resource efficiency concept for energy, water, and core material inputs"; "strengthen[] focus on energy efficiency and greenhouse gas measurement"; "reduce[] greenhouse gas emissions thresholds for reporting to IFC from 100,000 tons of CO2 to 25,000 tons of CO2 per year"; "require[] determination of accountability with regards to historical pollution"; and introduces the concept of "duty of care" for hazardous waste disposal).Jan.Apr.Apr.
[120] *See* The Carbon Principles, http://www.carbonprinciples.com/ (last visited Apr.Apr. 17,Apr. 2012).
[121] *See Biodiversity for Banks Program (B4B)*, Equator Principles, http://www.equator-principles.com/index.php/best-practice-resources/b4b (last visited Apr.Apr. 17,Apr. 2012).
[122] *See* RIO+20 Corp. Sustainability Forum, http://unglobalcompact.cvent.com/events/rio-20-corporate-sustainability-forum/custom-18-251b87a2deaa4e-56a3e00ca1d66e5bfd.aspx (last visited Apr. 15, 2012)*; see generally Financiers Search for Sustainable Future*, EarthSummit2012, http://www.earthsummit2012.org/earth-summit-in-the-press/financiers-search-for-sustainable-future (last visited Apr. 17, 2012).
[123] *See generally http://www.un.org/geninfo/bp/enviro.html* (last visited Apr.15, 2012) (noting that "[s]ome 2,400 representatives of non-governmental organizations (NGOs)" attended).

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Information and technology transfer to China and India through compulsory licensing offers a unique opportunity to exploit the benefits of international trade to promote an environmentally sustainable future. However, international cooperation at the Rio+20 conference will be crucial in promoting this opportunity by finally dealing with the issue of how to maintain intellectual property rights while disseminating the benefits of these technologies. While methods to mitigate short-term economic costs should be considered, Rio+20 must recognize the promise that compulsory licensing holds for reducing emissions in the long run and acknowledge the urgent need to make green technology available to the developing world at an affordable price.

Endnotes: Compulsory Licensing in TRIPS: Chinese and Indian Comparative Advantage in the Manufacture and Exportation of Green Technologies

1 *See* Robert Fair, *Does Climate Change Justify Compulsory Licensing of Green Technology?*, 6 International Law & Management Review 21, 23 (2009) (referencing a joint resolution issued by Brazil, China, and India).
2 *See* Eco-Accord, United Nations Conference on Sustainable Development, Proposals for Rio+20: Sustainable Development Needs a New Impetus ¶ 15 (Nov. 1, 2011), http://www.uncsd2012.org/rio20/index.php?page=view&type=510&nr=525&menu=20; TRIPS: Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 313 (1994), *available at* http://www.wto.org/english/docs_e/legal_e/27-trips_04c_e.htm [hereinafter TRIPS Agreement] (defining that it is appropriate to use compulsory licensing for "extreme urgency").
3 *See* Sarah M. Wong, *Environmental Initiative and the Role of the USPTO's Green Technology Pilot Program*, 16 Marq. Intell. Prop. L. Rev. 233, 243 (2012); TRIPS and Health: Frequently Asked Questions, http://www.wto.org/english/tratop_e/trips_e/public_health_faq_e.htm (last visited Apr. 24, 2012).
4 Bernice Lee et al., Chatham House Report, Who Owns Our Low Carbon Future? Intellectual Property and Energy Technologies 23, 27, 30, 34, 40 (2009) (providing data that of the entire world's green energy patents the U.S. based companies hold 27.2% of wind patents, 40.4% of solar photovoltaic patents, 40.4% of biomass-to-electricity patents, 37.8% of concentrated solar power patents, and 68.4% of carbon capture patents).
5 *See* Kate Nuehring, *Our Generation's Sputnik Moment: Comparing the United States' Green Technology Pilot Program to Green Patent Programs Abroad*, 9 Northwestern Journal of Technology and Intellectual Property 609, 616 (2011).
6 *See generally* Michael Hasper, Note, *Green Technology in Developing Countries: Creating Accessibility through a Global Exchange Forum*, 1 Duke

L. & Tech. Rev. (2009) (explaining the unique hurdle that intellectual property rights create).

[7] *See* Rasmus Lema and Adrian Lema, *Whither Technology Transfer? The Rise of China and India in Green Technology Sectors*, paper prepared for the 8th GLOBELICS International Conference, Kuala Lumpur, Malaysia 17 (2010).

[8] TRIPS Agreement, 1869 U.N.T.S. 313.

[9] *See* Eco-Accord, United Nations Conference on Sustainable Development, Proposals for Rio+20: Sustainable Development Needs a New Impetus ¶ 15 (Nov. 1, 2011).

[10] *See* Robert Fair, *Does Climate Change Justify Compulsory Licensing of Green Technology?*, 6 International Law & Management Review 21, 26 (2009); for how to cite this decision- http://www.wto.org/english/tratop_E/TRIPS_e/implem_para6_e.htm.

[11] *See* Fair, *supra* note 9, at 28.

[12] *See* Wong, *supra* note 8.

[13] *See generally* Tim Wilson, Institute of Public Affairs, Undermining Mitigation Technology: Compulsory Licensing, Patents and Tariffs (2008) (claiming that compulsory licensing would have a negative effect on economic growth and green technology innovation).

[14] *See* Bronwyn H. Hall and Christian Helmers, *The Role of Patent Protection in (Clean) Technology Transfer*, 26 Santa Clara Computer & High Tech. L.J. 487, 492 (2010).

[15] *See id.* at 493.

[16] *See* TRIPS Agreement, 1869 U.N.T.S. 313; Veronique Greenwood, *Who Owns Green Tech?*, Seed Magazine (Jul. 30, 2009), http://seedmagazine.com/content/article/intellectual_property_who_owns_green_tech/.

[17] *See* Jerome Reichman et al., Chatham House, Intellectual property and Alternatives: Strategies for Green Innovation 30 (2008) (noting that compulsory licensing is especially useful when companies refuse to make the technology affordable in a particular country).

[18] Rasmus Lema and Adrian Lema, *Whither Technology Transfer? The Rise of China and India in Green Technology Sectors*, paper prepared for the 8th GLOBELICS International Conference, Kuala Lumpur, Malaysia 19 (2010) (noting the importance of licensing to spur more competition and innovation in China and India).

[19] *See* Cameron Hutchison, *Does TRIPS Facilitate or Impede Climate Change Technology Transfer into Developing Countries?*, 3 U. Ottawa L. & Tech. J. 517, 527-28 (2006) (recognizing that inflexible intellectual property rights regimes can stifle follow-on innovations).

[20] Katy Daigle, Associated press, Rising powers say new bank can help development http://www.google.com/hostednews/ap/article/ALeqM5jcvOCTIx57W9v4p85bhnFNfSCkqA?docId=951a797b59ab4a289d0ac09128eef0c6.

[21] *See* Robert Fair, *Does Climate Change Justify Compulsory Licensing of Green Technology?*, 6 International Law & Management Review 21, 22 (2009).

[22] *See* Joanna I. Lewis, *Building a National Wind Turbine Industry: Experiences from China, India, and South Korea*, 5 Int'l J. Tech. & Globalisation 281, 283-90 (2011); Lema and Lema, *supra* note 18, at 8-13; Ucillia Wang, *Chinese Manufacturers Cement Their Hold on Global Solar Market*, Forbes (Feb. 27, 2012, 1:10 PM), http://www.forbes.com/sites/uciliawang/2012/02/27/chinese-manufacturers-cement-their-hold-on-global-solar-market/.

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[35] Roland Kläger, *'Fair and Equitable Treatment' and Sustainable Development*, *in* Sustainable Development in World Investment Law 241-42 (Marie-Claire Cordonier Segger, Markus W. Gehring, & Andrew Newcombe eds., 2011).

[36] *See generally* Tecnicas Medioambientales Tecmed S.A. v. United Mexican States, ICSID Case No. ARB(AF)/00/2, Award (May 29, 2003).

[37] *Id.* at ¶154 (cited in MTD v. Chile, ICSID Case No. ARB(AF)/01/7, Award, ¶112; Occidental Exploration and Production Co. v. Ecuador, LCIA Case No. UN3467, Award, ¶185 (July 1, 2004).

[38] Saluka Investments BV v. Czech Republic, UNCITRAL, Partial Award, ¶304-05 (Mar. 17, 2006) *See,* IISD, at 17-18.

[39] Kläger, *supra* note 37, at 242.

[40] *Id*.

[41] *See* IISD, *supra* note 35, at 18-19.

[42] *See* Comprehensive Economic Cooperation Agreement Between the Republic of India and the Republic of Singapore, India-Sing., June 29, 2005.

[43] *Id.*

[44] Restatement (Third) of Foreign Relations Law § 206 (1987).

[45] *See generally* United Nations Conference on Trade and Development, *Taking of Property*, U.N. Doc. UNCTAD/ITE/IIT/15 (2000), http://www.unctad.org/en/docs//psiteiitd15.en.pdf.

[46] *Id*.

[47] OECD, "Indirect Expropriation" and the "Right to Regulate" in International Investment Law, International Investment Law: A Changing Landscape (2005).

[48] *Id*. at 46-47.

[49] *Id*. at 44.

[50] *Id*.

[51] Caroline Henckels, *Indirect Expropriation and the Right to Regulate*, 15 J. Int'l Econ. L. 223, 225 (2012) (Fn. 4).

[52] Waste Management v. United Mexican States (Waste Management II), ICSID Case No. ARB(AF)/00/3, Award (April 30, 2004), http://www.state.gov/documents/organization/34643.pdf.

[53] *Id.* at ¶¶ 159,160.

[54] Henckels, *supra* note 53, at 225.

[55] Tecnicas Medioambientales S.A. v. Mexico (TECMED), ICSID Case No. ARB (AF)/00/2, Award (May 29, 2003), http://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&actionVal=showDoc&docId=DC602_En&caseId=C186.

[56] Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award (Aug. 30, 2000), http://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&actionVal=showDoc&docId=DC542_En&caseId=C155.

[57] *Id*. at ¶ 111.

[58] Methanex Corporation v. United States at Part II, Chap. D, ¶ 16.

[59] *Id.* at Part I, ¶ 1.

[60] *Id.*

[61] Methanex, Part IV, Chap. D, ¶ 7.

[62] IISD, *supra* note 35, at 22, 23.

[63] *See* IISD, *supra* note 35, at 23-24.

[64] United States Model Bilateral Investment Treaty, Article 3(1), (2004), http://www.state.gov/documents/organization/117601.pdf. Article 3(2) sets forth the same language, with the exception that the word "investments" is substituted for the word "investors" as it appears in Article 3(1).

[65] Kate Miles, *Sustainable Development, National Treatment and Like Circumstances in Investment Law in* SUSTAINABLE DEVELOPMENT IN WORLD INVESTMENT LAW 265, 268-269 (Marie-Claire Cordonier Segger, Markus W. Gehring, Andrew Newcombe eds., 2011).

[66] *See id.* at 269 (describing a broad interpretation of the term, which in turn captures a range of regulation and governmental decision-making that is virtually limitless).

[67] *Id.*

[68] Miles, *supra* note 67, at 269.

[69] S.D. Myers, Inc. v. Government of Canada, First Partial Arbitral Award, ¶ 243 (Nov. 13, 2000), 8 ICSID Rep. 3 at 52-53.

[70] *Id.* at 55, ¶ 256.

[71] *Id.* at 26, ¶¶ 89-93.

[72] *Id.* at 29, ¶¶ 109-112.

[73] *Id.* at 54, ¶¶ 250.

[74] *Id.* at 76, ¶¶ 241-56.

[75] *Id.* at 54, ¶¶ 251, 255.

[76] Pope & Talbot v. Canada, Award on the Merits of Phase 2, ¶ 78, Arbitral Tribunal (April 10, 2001) *available at* http://www.international.gc.ca/trade-agreements-accords-commerciaux/assets/pdfs/Award_Merits-e.pdf.

[77] IISD, *supra* note 35, at 29.

[78] *See* IISD, *supra* note 35, at 50.

[79] Central American-Dominican Republic-United States Free Trade Agreement, Article 10.4(1), Aug. 5, 2004, http://www.ustr.gov/sites/default/files/uploads/agreements/cafta/asset_upload_file328_4718.pdf (last visited Apr. 18, 2012). Article 10.4(2) contains similar language, but it applies to "covered investments" rather than "investors" as in Article 10(4)(1).

[80] *See* IISD, *supra* note 35, at 29-30.

[81] Emilio Augustin Maffezini v. Kingdom of Spain, ICSID Case No. ARB/97/7, Decision on Objections to Jurisdiction, (Jan. 25, 2000) 16 ICSID Rev. (2001), http://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&actionVal=showDoc&docId=DC565_En&caseId=C163.

[82] *See* IISD, *supra* note 35, at 30.

[83] *See, e.g.*, *Plama Consortium Ltd. v. Bulgaria*, ICSID Case No. ARB/03/24, Decision on Jurisdiction (Feb. 8, 2005), http://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&actionVal=showDoc&docId=DC521_En&caseId=C24; Salini Costruttori S.p.A. v. Jordan, ICSID Case No. ARB/02/13, Decision on Jurisdiction (Nov. 29, 2004), http://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&actionVal=showDoc&docId=DC635_En&caseId=C218.

[84] IISD, *supra* note 35, at 32.

[85] *Id*.

[86] *Id.*

[87] *Id*. at 33.

[88] *Id*.

[89] *See Id*. at 34 (describing the variety of approaches states take to ensure their policy goals).

[90] *See id*. at 33 (stating that in fact states use performance requirements to gain technology).

[91] *Id*. at 32.

[92] Treaty between the United States of America and the Argentine Republic Concerning the Reciprocal Encouragement and Protection of Investment, Art. 2(2)(c), concluded on 14 Nov. 1991.

[93] Nigel Blackaby and Constantine Partasides, with Alan Rederrn and Martin Hunter, REDERN AND HUNTER ON INTERNATIONAL ARBITRATION 506-08 (Oxford, 5th ed. 2009).

[94] *See id.* at 482-83 (stating that umbrella clauses may elevate contractual rights to the level of treaty rights).

[95] *Id.* at 482-83.

[96] Andrea Shemberg, *Stabilization Clauses and Human Rights,* vii (Ma. 11, 2008) (Research project conducted for IFC and the United Nations Special Representative to the Secretary General on Business and Human Rights), http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/p_StabilizationClausesandHumanRights/$FILE/Stabilization+Paper.pdf.

[97] *See id.* at 35-36 (discussing the use of stabilization clauses to exempt companies from regulation).

[98] Blackaby, *supra* note 95, at 483.

[99] IISD, *supra* note 35, at 68.

[100] *Id*.

[101] *Id*.

[102] IISD, *supra* note 35, at 48.

[103] *Id.* at 49.

[104] *Id.* at 50.

[105] IISD, *supra* note 35, at 51-52.

[106] *See Innovation and Collaboration for the Future We Want*, Rio+20 Corporate Sustainability Forum, http://csf.compact4rio.org/events/rio-20-corporate-sustainability-forum/custom-125-251b87a2deaa4e56a3e00ca1d66e5bfd.aspx (last visited Apr. 18, 2012).

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[49] Under this Program, the European Union issued a series of important "framework directives" such as this Council Directive on ambient air quality assessment and management. The new regulation model called for the issuance of framework directives to revise and codify older directives and to leave the technical details of implementing such directives to a series of "daughter directives" such as Council Directive 1999/30/EC of 22 April 1999 laying down limit values for sulfur dioxide, nitrogen dioxide, nitrogen oxides, particulates, and lead in the ambient air. *See* Council Directive 96/62, 1996 O.J. (L 296) (EC).

[50] Council Decision No. 2179/98, of 24 Sept. 1998, O.J. (L 275) (EC) 1.

[51] *Communication from the Commission to the Council and European Parliament, Ten years after Rio: Preparing for the World Summit on Sustainable Development in 2002*, at 2, COM (2001) 53 final (June 2, 2001), http://eur-lex.europa.eu/LexUriServ/site/en/com/2001/com2001_0053en01.pdf.

[52] Victoria Jenkins, *Communication from the Commission: A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development (Commission's Proposal to the Gothenburg European Council) COM (2001) 264 Final*, 14 J. Envtl. L. 261, 262-263 (2002).

[53] *Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions On the Sixth Environment Action Programme of the European Community, 'Environment 2010: Our future, Our choice' — The Sixth Environment Action Programme* COM/2001/0031 final, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52001DC0031:EN:HTML; Council Decision (EC) No. 1600/2002 of 22 July 2002, O.J. (L 242) 1.

[54] *Consolidated Version of the Treaty on the Functioning of the European Union*, art 11, May 9, 2008, 2008 O.J. (C 115) 53.

[55] *Id.*

[56] Jenkins, *supra* note 52, at 263-64.

[57] Sirini Withana, et. al., Inst. for Envtl. Pol'y, Strategic Orientations of EU Environmental Policy under the Sixth Environment Action Programme and Implications for the Future Final Report 2 (May 2010), http://www.ieep.eu/assets/556/Strategic_Orientations_of_6EAP_-_Revised_report_-_May_2010.pdf.

[58] *Id.* at 95-96.

[59] Consolidated Version of the Treaty on European Union art 3(3), May 9, 2008, 2008 O.J. (C 115) 17 [hereinafter TEU].

[60] TEU art. 3(3).

[61] Catherine Barnard, The Substantive Law of the EU: The Four Freedoms 21 (2nd ed. 2007).

[62] TEU art. 3(3).

[63] *Id.*

[64] TEU art. 3(5).

[65] TEU art. 21(2)(d).

[66] TEU art. 21(2)(f).

[67] TEU art. 6(1).

[68] Charter of Fundamental Rights of the European Union, 2000/C 364/01, art. 37, 2000 O.J. (C 364) 1.

[69] Gillroy, *supra* note 26, at 12.

[70] Meaning that EU institutions will be able to rely on Article 11 framework provisions to determine how best to ensure that development activities respect and account for environmental impacts.

[71] TFEU art. 11.

[72] *See* TFEU art. 191 (declaring the objectives and the policy that should be followed to achieve them).

[73] TFEU art. 191(1).

[74] TFEU art. 191(2).

[75] *See* Marko Ahteensuu, *Defending the Precautionary Principle against Three Criticisms*, 11 Trames 366, 366 (2007) (submitting a "standard formulation of the [precautionary] principle" from the Science and Environment Health Network, which stated that "'[w]hen an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically'").

[76] The principal form of legislation issued by the EU comes in the forms of Regulations, which are directly binding on Members States through Directives. Directives must be properly transposed into the national laws of Members States within the time frame provided in the Directive. *See* TFEU art. 288.

[77] European Commission (DG Environment), Water Note 1: Joining Forces for Europe's Shared Waters: Coordination in International River Basin Districts, 3 (Mar. 2008), http://ec.europa.eu/environment/water/participation/pdf/waternotes/water_note1_joining_forces.pdf

[78] *See* Schrijver & Weiss, *supra* note 20, at 574.

[79] *See* Hans Vedder, *The Treaty of Lisbon and European Environmental Law and Policy*, J. Envtl. L., 285, 287-288 (2010) (noting that EU environmental objectives specifically reference relations between the EU and the rest of the world, especially regarding global sustainable development focused on equity and prudent management of global natural resources).

[80] *See* Batty, *supra* note 18, at 30 (discussing sustainable development's integration into newly drafted constitutions of the British government, making the principle a fundamental aspect of urban planning decisions, "impos[ing] on the urban planning system a duty to implement the Government's strategy for sustainable development").
[81] TFEU art. 191(2).
[82] *E.g.* Case 302/86, Comm'n v. Denmark, 1988 E.C.R. 4627 [hereinafter Danish Bottles] (holding that the transportation of goods in commerce can be halted in order to protect the environment).
[83] *Id.*
[84] *See* Case 302/86, Comm'n v. Denmark, 1988 E.C.R. 4627 [hereinafter Danish Bottles].
[85] The *Cassis de Dijon* doctrine allowed a court to halt the free movement of goods, holding that "[o]bstacles to movement within the community resulting from disparities between the national laws relating to the marketing of products in question must be accepted insofar as those provisions may be recognized as being necessary in order to satisfy mandatory requirements relating in particular to the effectiveness of fiscal supervision, the protection of public health, the fairness of commercial transactions and the defence of the consumer." Case 120/78, Rewe Zentral AG v. Bundesmonopolverwaltung für Branntwein, 1979 E.C.R. 649, 662 ¶ 8.
[86] Danish Bottles, *supra* note 82, at ¶ 21–23.
[87] *See* Joined Cases C-379/08 & C-380/08, Raffinerie Mediterranee (ERG) SpA, ENI SpA v. Ministero Ambiente e Tutela del Territorio e del Mare, 2010 E.C.R. I1919 [hereinafter Raffinerie].
[88] Council Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on Environmental Liability with Regard to the Prevention and Remedying of Environmental Damage, 2004 O.J. (L 143) 56.
[89] Raffinerie, *supra* note 87, at ¶¶ 79-92.
[90] *Id.* at ¶ 28.
[91] *Id.* at ¶ 92.
[92] *See* TFEU art. 193 ("The protective measures adopted pursuant to Article 192 shall not prevent any Member State from maintaining or introducing more stringent protective measures. Such measures must be compatible with the Treaties. They shall be notified to the Commission.").
[93] Raffinerie, *supra* note 87, at ¶ 1.
[94] *Id.* at ¶ 2.
[95] Case C-343/09, Afton Chemical Limited v. Secretary of State for Transport, 2010 E.C.R.
[96] *Id.* at ¶ 1–2.
[97] *Id.* at ¶ 28, 34.
[98] *Id.* ¶¶ 60–62.
[99] *Id.* ¶¶ 61–64.
[100] TFEU art. 192(4)–(5).
[101] *See* TFEU art. 11 (stating that sustainable development is a goal of the European Union).
[102] *See generally*, James R. May, *Not at All: Environmental Sustainability in the Supreme Court*, 10 Sustainable Dev. L. & Pol'y 20 (2009) (arguing that the status of sustainable development in the United States legal system is currently threatened by the close negative scrutiny of the Roberts' Supreme Court).
[103] TEU art. 1.

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[30] *Id.* (positing that there are hardly any linkages between a modern, outward looking sector and the rest of an economy focused on traditional sectors).
[31] *Id*. at 31 (citing a World Bank study to conclude that "[d]ualism goes hand in hand with very high levels of income inequality" which is much higher in developing countries than in advanced economies).
[32] *Id.* at 79 (exemplifying J.H. Boeke's analysis of Indonesian economics to demonstrate how internal cultural and industrial characteristics can influence the continuation of traditional sectors and stagnation of modern sectors).
[33] *See id.* at 79-81 (detailing how investment of accumulated capital in industrial sectors can encourage entrepreneurship and lead to a sustainable progression from traditional, agrarian societies to mature, consumption drive societies(citing W.W. Rostow, Stages of Economic Growth (1960)); *but see id.* at 273-275 (explaining that, in early stages of development, increased productivity in agriculture is crucial because it assures a source of food, frees up labor for use elsewhere, encourages domestic savings of capital for investment in industry and infrastructure, and provides a market for manufactured goods, both to maintain productivity and as a new consumer base).
[34] *Id.* (describing that one important aspect of this type of economic analysis is that at some point, with enough investment, a state will reach the "take-off" stage where the economy changes drastically toward sustainable industry-lead growth).
[35] *Id.* at 564 (concluding that because traditional economic institutions do not provide sufficient incentives for growth, "countries must explicitly pursue a structural policy aimed at increasing their productive capacities and the efficiency of the production structure).
[36] Paul Collier, The Bottom Billion: Why the Poorest Countries are Failing and What Can Be Done About It 5 (2007).
[37] *See* U.N. Econ. Comm. For Africa, *Sustainable Development Report on Africa* 83 (2008), http://www.uneca.org/eca_resources/publications/books/sdra/ (stating that many African economies are dependant on extractive industries, which constitute fifty percent of Africa's exports); *id.* at 85 ("Mineral resources are non-renewable, finite and unevenly distributed across space. The wealth that they generate is transient and vulnerable to rent seeking. In addition, their exploitation is often capital-intensive rather than labor-intensive and creates enclave economies that have little or no links with the wider national economy. The above attributes generate daunting policy challenges that are difficult to manage and overcome."); *see also* Collier, *supra* note 35, at 39 (relating that twenty-nine percent of people in the bottom billion live in countries in which resource wealth dominates the economy).
[38] *See* Szirmai, *supra* note 4, at 281-83 (giving examples of several ways in which primary exports can be a potential benefit to developing economy).
[39] *Id*. at 282.
[40] *Id.*
[41] *See id.* at 283 (describing how resource wealth can provide a stimulus for a market for manufactured imports and domestic industrial production).
[42] *See, e.g.*, Paul Mitchell, *Taxation and Investment Issues in Mining*, *in* Advancing The EITI In The Mining Sector 27, 27 (Christopher Eads et al. eds., 2009) (finding that tax revenues derived from mining activities represent an important public policy issue and examining the role of tax regimes in development generally).
[43] *See generally* Collier, *supra* note 35, at 38-52 (describing the natural resource trap).
[44] *Id.* at 39-40.
[45] Szirmai, *supra* note 4, at 282 (explaining that surplus foreign exchange can be used to "ease bottlenecks in industrial production by importing productive capital goods and intermediate goods").
[46] *See* Collier, *supra* note 35, at 39-40 (citing as an example Nigeria, where "[a]s oil revenues built up, the country's other exports–such as peanuts and cocoa–became unprofitable, and production rapidly collapsed").
[47] *Id.* at 40 (finding that Dutch disease alone was not enough to explain the problems resource-rich countries face).
[48] *See id.* at 40-41 (exemplifying Kenya and Nigeria as countries which have seen their resource "gravy train come to an abrupt end" and are then faced with drastically reduced revenues).
[49] *See id.* at 40 (positing that in times of resource wealth booms, "rational public investment is liable to go out the window" and public spending will increase dramatically).
[50] *See id.* at 40-41 (showing how the economic hardships resulting from the bust of Nigeria's oil boom in 1986 were easily blamed on economic reforms required by international financial institutions, diverting attention away from the misuse and corruption which was the norm when Nigeria was previously flushed with resource wealth).
[51] *Id.* at 42.
[52] *See id.* at 45 ("The tragedy is that where bribery becomes acceptable it can be effective, because using your vote to support a party offering public services rather than selling it to the patronage party is not in your individual self-interest.").
[53] *See*, *e.g.*, *id.* ("Indeed, we find that the more ethnically diverse the society, the worse the performance of a resource-rich democracy."); Rotimi T. Suberu, *The Travails of Nigeria's Anti-Corruption Crusade*, *in* Corruption, Global Security, and World Order 260, 261 (Robert I. Rotberg, ed. 2009) (finding that a "culture of corruption is structurally rooted in the country's ethnic fragmentation" and an "attendant statism (the sweeping control of the state over the economy)" which is aggravated by massive resource wealth).
[54] Collier, *supra* note 35, at 46.

[55] *Id.* (explaining that in societies where patronage politics are the norm, "democratic politics tend to attract crooks rather than altruists" and it becomes a competition of survival of the fittest, where the most corrupt emerge as winners).
[56] *Id.* at 50.
[57] *See* Chirs Alden, China in Africa 14, 38 (2007) (recognizing that over 800 Chinese companies are doing business in forty-nine African countries because "Africa, with its rich natural resources and under-exploited markets" serves as a proving ground for new Chinese international businesses).
[58] *Id.* at 14.
[59] Organization of Economic Cooperation and Development (OECD), *Investment Policy Reviews: China 2008*, at 105 (2008), http://www.oecd.org/dataoecd/25/11/41792683.pdf.
[60] *The Chinese in Africa: Trying to Pull Together,* The Economist (Apr. 20, 2011), http://www.economist.com/node/18586448.
[61] *Id*.
[62] Serge Michel & Michel Beuret, China Safari: On the trail of Beijing's expansion in Africa 65-68 (2009).
[63] *Id.* at 65 (reporting that "figurines depicting big cats, ostriches, and rhinoceroses" brought to China in 1414 show that this was a two-way exchange of artifacts).
[64] *Id.* at 66 (stating that China's early explorations in Africa hit a highpoint in a small window of thirty years where China had been "looking beyond its borders in a manner that would not be repeated for five hundred years").
[65] *Id.* at 68 (expounding that Zhou Enlai, "China's most prominent foreign affairs official of the period" was well-received amid much fanfare); *see also* Joseph Camilleri, Chinese Foreign Policy: The Maoist Era and Its Aftermath 99 (1980) (relating that Zhou reiterated in every African capital that the struggle for political independence would have to incorporate a policy of economic self-reliance stressing "'correct leadership', 'relying on the strength of the masses' and careful utilization of natural resources").
[66] Thomas W. Robinson & David L. Shambaugh, Chinese Foreign Policy: theory and practice 286 (1994).
[67] Camilleri, *supra* note 64 at 94.
[68] *See id.* at 99-100 (listing a number of projects financed and technical assistance given by China starting in 1964).
[69] Robinson & Shabaugh, *supra* note 65 at 287 (recounting that the Tan-Zam Railroad was undertaken as a "direct contribution to the liberation cause" as a way of striking at European power).
[70] *See id.* at 310 (noting that the repayment of the $500 million price for the Tan-Zam railroad has been postponed a number of times); Michel & Beuret, *supra* note 61, at 68 (relating that "60 of the 50,000 Chinese who built the eighteen tunnels and forty-seven bridges died" but that the completed railroad demonstrated China's growing technical prowess); *but see* Ioannis Gatsiounis, *China Biggest Beneficiary of Its Africa Largess*, The Washington Times (Mar. 9, 2012), http://www.washingtontimes.com/news/2012/mar/9/china-biggest-beneficiary-of-its-african-largess/ (reporting that by 2008 the Tanzam railroad was "on the verge of collapse due to financial crisis").
[71] *See* Robinson & Shabaugh, *supra* note 65, at 287 (remarking that the railroad was intended to enable Zambia to be used as a base for guerillas fighting white regimes in Eastern and South Africa, as much as it was intended to loosen the European grip on regional economics); Camilleri, *supra* note 64, at 100 (relating that the Chinese reserved their "most substantial assistance to those countries whose policies were opposed to the existing international order").
[72] Michel & Beuret, *supra* note 61, at 68-69 (explaining how the change in Chinese politics led to a readjustment toward "healthy development of the economic and commercial relation with Africa" (quoting Yuan Wu, China and Africa, 1956-2006, at 51-52 (2006)).
[73] Michel & Beuret, *supra* note 61, at 69-70 (citing Ronald Marchal, Afrique-Asie: Une Autre Mondialisation? (2008)).
[74] *Id*. at 69 (observing that Africa was an obvious place to start to "reemerge from the resultant ostracism by the international community").
[75] *See id.* (noting the common bond that African leaders faced with "the emergence of a stronger democractic movement" worked to strengthen ties with China).
[76] *See id*. at 20-21 (relating a conversation with a Chinese diplomat who noted that the Cold War drove investment in an ideological manner, but that the end of the Cold War marked a turning point where "[Chinese] aid would no longer be as one-way as it had been before, that it would have to become mutually beneficial").
[77] *Id.* at 69-70 (imparting how Western involvement, making democracy a precondition for financial aid, is often viewed in a negative light, especially in the Chinese narrative)
[78] *Id.* at 8 (recounting how President Hu Jintao's visits invoke the rhetoric of freeing "his African brothers" from the "bitter Washington consensus (privatization, democratization, governance) with a much sweeter Beijing consensus").
[79] OECD, *Annual Report: Resource Flows to Fragile and Conflict-Affected States*, at 31 (2010), http://www.oecd.org/dataoecd/51/53/46043358.pdf (reporting that foreign direct investment fell in 2008 from $1.2 trillion to $707 billion and that it is falling in Africa, as a whole).
[80] *Id.* (reporting that commodity prices had fallen by thirty-eight percent in the second half of 2008 alone and that prices for commodities such as copper and oil remain extrememly volatile).
[81] Martyn Davies, OECD Development Centre, *How China is Influencing Africa's Development*, at 9 (Apr. 2010), http://www.oecd.org/dataoecd/34/39/45068325.pdf (citing PricewaterHouse Coopers, Junior Mine Survey (Feb. 2009)).
[82] *Id.* (relating that prior to the crisis Africa had committed to 2361 infrastructure projects, but only 1114 projects continued in 2010, a reduction of 52.8%).
[83] *Id*. (quoting A.K. Izaguirre, World Bank Public-Private Infrastructure Advisory Facility, *New Private Infrastructure Projects in Developing Countries Continue to Take Place But Projects Are Being Affected by the Financial Crisis* (Mar. 2009), http://ppi.worldbank.org/features/March2009/200903PPIFinancialCrisisImpact.pdf.
[84] *Id.* ("The sovereign nature of Chinese capital deployment in the global economy is enabling Chinese financial institutions to allot capital in this so-called 'counter-cyclical' fashion.").
[85] *Id.* at 9-10 (listing main actors from the policy bank sector to include the China Export-Import ("EXIM") Bank, the China Development Bank through its recently launched China-Africa Development Fund, China Construction Bank, and the Industrial Commercial Bank of China ("ICBC").
[86] Sarah Childress, *Foreign Investment Cushions Downturn in Africa*, The Wall Street J. (June 27, 2009), http://online.wsj.com/article/SB124607031091264351.html.
[87] Michel & Beuret, *supra* note 61, at 175.
[88] *Id.* (emphasis added).
[89] *Id.* at 178.
[90] African Development Bank ("AFDB"), *Chinese Trade and Investment Activities in Africa*, 1 Pol'y Brief No. 4 (July 29, 2010), http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Chinese%20Trade%20%20Investment%20Activities%20in%20Africa%2020Aug.pdf.
[91] *See* Michel & Beuret, *supra* note 61, at 175 (asserting that China is forced into a tough position because it is"at the back of the line when the oil companies are dividing up Africa," and that getting a "fair share [for China] can be difficult, particularly when [it has] no former colonial ties on which to draw").
[92] *See, e.g.*, *id.* at 178 (noting Chinese oil exploration in various African countries, while the "West was busy locking up as much of the Gulf of Guinea as possible").
[93] AFDB, *supra* note 89, at 1 (stating that "Chinese firms are generally less averse to risk than their Western counterparts"); s*ee also* Michel & Beuret, *supra* note 61, at 178 (describing how, only two months after an attack killed nine Chinese in Ethiopia, a Chinese oil company signed a contract to prospect oil "among the many battlefields of Somalia–without the knowledge of the Somali prime minister"); *China trying to mediate oil impasse between Sudan, South Sudan, again stepping up Africa role*, Associated Press (Dec. 7, 2011), http://www.washingtonpost.com/world/middle-east/china-trying-to-mediate-oil-impasse-between-sudan-south-sudan-stepping-up-africa-role/2011/12/07/gIQAXVZIcO_story.html (relating that China has close relationships with both North and South Sudan where it has recently entered into disputes to moderate between the two countries and assure the flow of oil continues).
[94] AFDB, *supra* note 89, at 4.
[95] Harold R. Newman et al, U.S. Geological Survey, The Mineral Industries of Africa (2009), http://minerals.usgs.gov/minerals/pubs/country/2009/myb3-sum-2009-africa.pdf.
[96] Davies, *supra* note 80, at 16 (noting that mining operations are to begin in 2013); Richard Mills, *Cobalt and Other Critical Raw Materials*, Res. Investor (June 23, 2011), http://www.resourceinvestor.com/News/2011/6/Pages/Cobalt--Other-Critical-Raw-Materials.aspx (relating that the deal gave China "rights to the vast copper and cobalt resources of the North Kivu").
[97] Mills, *supra* note 95.
[98] Antonaeta Becker, *To DR Congo, With Trouble*, AllAfrica.com (May 10, 2010), http://allafrica.com/stories/201005101838.html (reporting that a commission of the National Assembly of the DRC is investigating).
[99] Davies, *supra* note 80, at 11.
[100] *See id*. (referring to a 2005 Chinese Government foreign policy White Paper which encourages the concession model of investment).

[101] V. Zutterfield Foster, World Bank Public-Private Infrastructure Advisory Facility, *China's Emerging Role in Africa* (Oct. 2008).
[102] Ed Cropley, *RPT-Africa needs $93 bln/yr for infrastructure –report*, Reuters (Nov. 12, 2009), http://www.reuters.com/article/2009/11/12/idUSLB294340 ("In most African countries, particularly the lower-income countries, infrastructure emerges as a major constraint on doing business, depressing firm productivity by about 40 percent." (quoting a report by the Infrastructure Consortium for Africa)); Davies, *supra* note 80, at 18 (observing that logistical challenges to transportation frustrate attempts to integrate domestic and regional economies and to form value chains of production and the cost of transportation is higher in Africa than other developing economies).
[103] Africa Progress Panel, *Africa Progress Report* 2011, at 15 (Apr. 2011) (contending that with increasing pressures on public finances, African states are focusing on other sources of funding such as public-private partnerships to create infrastructure).
[104] Margareta Drzeniek Hanouz and Robert Z. Lawrence, *Enhancing Trade in Africa: Lessons from the Enabling Trade Index*, *in* World Economic Forum, Africa Competitiveness Report 2009, at 111 (2009) (citing Hansen, P. & L. Anovazzi-Jakab, *Facilitating Cross-Border Movement of Goods: A Sustainable Approach*, *in* The Global Enabling Trade Report 2008, at 67-76 (2008).
[105] *Id.* (citing World Bank, *Doing Business 2007* (2007)).
[106] Vivian Foster et al., World Bank, *Building Bridges: China's Growing Role as Infrastructure Financier for Sub-Saharan Africa*, at viii (2008), http://siteresources.worldbank.org/INTAFRICA/Resources/Building_Bridges_Master_Version_wo-Embg_with_cover.pdf (highlighting two sectors which receive the most investiture from China as power and transportation).
[107] *Id.*
[108] *Id.* at vi.
[109] *See, e.g.*, Gatsiounis, *supra* note 69 (reporting that "many Chinese projects use Chinese labor and materials, minimizing skills transfer and stunting local production"); *but see* Davies, *supra* note 80, at 21 (positing that such insulation from African labor may be due to the interests in rapid completion of projects "which have delivery dates often determined by government seeking the political kudos from their completion").
[110] *See, e.g.*, Gatsiounis, *supra* note 69 (citing the near collapse of the Tanzam railroad as an example of how, in Chinese investment, "the host partner often lacks the culture of maintenance and funds to sustain [the project]").
[111] Davies, *supra* note 80, at 10.
[112] The Economist, *supra* note 59 (remarking that much of this diversification is occurring at the request of African states themselves).
[113] *Id.*
[114] Paola Bellabona and Francesca Spigarelli, *Moving from Open Door to Go Global: China Goes on the World Stage*, 1 Int'l J. Chinese Culture and Mgmt 93, 94 (2007), http://www.inderscience.com/storage/f612117382451910.pdf ("*Go Global!* is the slogan with which the Chinese authorities, since 2000, have been encouraging local enterprises to invest abroad (emphasis in original)); c*ontra* Davies, *supra* note 80, at 24 (stating that the Go Global strategy was announced in 2002).
[115] AFDB, *supra* note 89, at 1 (commenting that Go Global's "main features are consistent with China's general policy, which is aimed at lessening its energy and other natural resource constraints and increasing outlets for its manufactured products").
[116] Davies, *supra* note 80, at 24 (contending that the FDI represented by the Go Global strategy is "likely to rise as Chinese firms seek to offset protectionist sentiment that is rising during the global economic crisis").
[117] *Id.*
[118] AFDB, *supra* note 89, at 1 (suggesting that successful SEZs will establish "a framework for collaboration that includes engagement from host governments, processes for phasing-in local control, communication and enforcement of standards, and support for integration with local economies").
[119] *Id.*
[120] *See* Shirzmai, *supra* note 4, at 282 (relating how forward and backward linkages associated with extractive industries can be used to encourage sustainable economic development by creating structural changes in an economy toward a more diverse industrial sector).
[121] Davies, *supra* note 80, at 27.
[122] Ron Sandry & Hannah Edinger, World Bank, *China's Manufacturing and Industrialization in Africa*, at 26 (Working Paper No. 128, May 2011) (commenting, as well, that "the easing of rules that protect workers and limit negative externalities from investment may cause neighboring countries to lower their own standards" resulting in a "race to the bottom").
[123] Emmanuel K. Dogbevi, *CEPA Warns of Dutch Disease as Ghana Moves from Cocoa to Oil*, Ghana Business News (May, 28, 2011), http://www.ghanabusinessnews.com/2010/05/28/cepa-warns-of-dutch-disease-as-ghana-moves-from-cocoa-to-oil-economy/ (stating the belief that Ghana's economy, which had been largely based on Cocoa for the last 100 years, would become one based upon oil).
[124] *Id.*
[125] *See* Alan Beattie, False Economy 118 (2009) (proscribing that, in a potential Dutch disease situation, revenue deriving from the extractive industry needs to be "managed in a way that does not distort the rest of the economy" whereby "[s]pending should flow at a rate that can be maintained into the long term" and that revenue should be used to strengthen the rest of the economy through "improve[ed] infrastructure, education, and overall productive capacity").
[126] *See, e.g.*, Nicholas Shaxson, *Oil, Corruption, and the Resource Curse,* 83 Int'l Affairs 1123 (2007) (relating how the resource curse encourages patronage politics and the fractionalization of societies).
[127] *See, e.g.*, Rob Crilly, *Chinese Seek Resources, Profit in Africa*, USA Today (June 21, 2005), http://www.usatoday.com/money/world/2005-06-21-africa-china-usat_x.htm ("The Kenyan government is enthusiastic about closer economic cooperation. Alfred Mutua, its spokesman, says China is an easy country to do business with. 'The Chinese do not peg their economic activity or aid to political conditions,' he says. 'You never hear the Chinese saying that they will not finish a project because the government has not done enough to tackle corruption. If they are going to build a road, then it will be built.'").
[128] Shaxson, *supra* note 125, at 1133-34.
[129] Rio Declaration, *supra* note 3, princ. 12.
[130] *Fact Sheet*, EITI, http://eiti.org/files/2011-10-20_EITI_Fact_Sheet_English.pdf (last visited, Apr. 30, 2012).
[131] *Id.*
[132] *Id.*
[133] *See generally*, EITI, Achievements and Strategic Options: Evaluation of the Extractive Industries Transparency Initiative 32-36 (2011), http://eiti.org/files/2011-EITI-evaluation-report.pdf (admitting that aggregated data does not show any kind of EITI influence, "much less a determinant one," but that specific country level analysis may provide a better evaluation of EITI impact).
[134] *EITI Countries*, EITI, http://eiti.org/countries (last visited Dec. 17, 2011).
[135] *See* EITI, Nigeria EITI: Making Transparency Count, Uncovering Billions (2012) (highlighting the success EITI audits have had in exposing deficiencies in governance and public finance to public scrutiny).
[136] Francisco Paris, *China and the EITI*, EITI (Feb 19, 2010 11:32), http://eiti.org/blog/china-and-eiti.
[137] *Id.*
[138] *See id.* (noting that China has encountered challenging political and operating environments and has come late to the pursuit of African resources).
[139] *Id.* (quoting EITI Principle No. 2).
[140] *Id.* (advocating that China would benefit from EITI compliance because it will demonstrate a "commitment to the best international business and investment practices" and will help promote stable conditions which ensure "energy availability and access, while contributing to sustainable development").
[141] *See* Shaxson, *supra* note 125, at 1134 (remarking on examples where a society is aware of corruption yet officials were not condemned for their corrupt acts because there was no sense of accountability due to patronage politics and the lack of taxation).
[142] *Id.* (observing that externally imposed corruption agendas are not likely to be as effective as domestic movements which address patronage socially).
[143] Sen, *supra* note18, at 2 (pointing out that "political freedom in the form of democratic arrangements helps to safeguard economic freedom").
[144] Shaxson, *supra* note 125, at 1129 (relating that horizontal political relations in a society create broad consensus, but that vertical relationships encourage patronage and fragmentation).
[145] *Id.* at 1133 (calling for more research in societal fractionalization); Bo Rothstein, "Anti-Corruption: the Indirect 'Big Bang' Approach," 18 *R. of Int'l Pol. Econ.* 239, 246 (2011) (concluding that corruption is essentially a factor of social agency–people will act corruptly or not, depending upon what they think others will do–and, therefore, a society must develop social trust that no-one will act in a corrupt manner).
[146] Rio Declaration, *supra* note 3, princ. 12.
[147] *See* Rio Declaration, *supra* note 3, princ.12 (encouraging public awareness and participation in decision-making); De Silva, *supra* note 1 (noting that 178 countries affirmed Principle 10).
[148] De Silva, *supra* note 1 (explaining the role of The Access Initiative and World Resources Institute in securing rights granted under Principle 10).

[149] *Id.* (giving examples of new accountability represented by "constitutions and laws [which] now guarantee freedom of information in nearly 100 countries and many more have enacted administrative processes, such as permitting systems or environmental impact assessments that mandate public participation. . . [and] [s]pecialized environmental courts and tribunals [which] have been established in over 44 countries providing additional environmental dispute resolution forums.").

[150] *Id.* (quoting the U.N. Secretary General to have called for governments to do more to "build on progress made to promote transparency and accountability through access to information and stakeholder involvement in decision-making").

[151] U.N. High-Level Panel on Global Sustainability, *Resilient People, Resilient Planet: A Future Worth Choosing*, at 10 (2012) [hereinafter Panel Report] (stating that the need to integrate different aspects of society to achieve development has been accepted knowledge for a quarter century).

[152] Rio Declaration, *supra* note 3, princ. 1 ("Human beings are at the centre of concerns for sustainable development.")

[153] Panel Report, *supra* note 150, at 10 ("Citizens will no longer accept governments and corporations breaching their compact with them as custodians of a sustainable future for all. More generally, international, national and local governance across the world must fully embrace the requirements of a sustainable development future, as must civil society and the private sector.").

[154] De Silva, *supra* note 1 (finding that only open policies will be able fight rent capture and corruption and that successful policies will "depend upon broad-based constituencies that have been engaged in and benefit from sustainable development").

[155] Maya Forstater et al., The Institute of West-Asian and African Studies of the Chinese Academy of Sciences, Corporate Responsibility in African Development: Insights from an Emerging Dialogue 19 (Oct. 2010), http://www.hks.harvard.edu/m-rcbg/CSRI/publications/workingpaper_60.pdf (noting that, unlike in the West where pressure for CSR has been driven by civil society, in China it has been driven by the government as a stakeholder).

[156] *Id.* at 13.

[157] *Id.* at 19 (reporting the results of a study conducted by members of the Institute of West-Asian and African Studies of the Chinese Academy of Social Sciences and the John F. Kennedy School of Government at Harvard University).

[158] *Id*. at 19-20.

[159] *Id.* at 36.

[160] Pew Research Center, Global Unease with Major World Powers (2007), http://www.pewglobal.org/files/pdf/256.pdf (finding in a 2007 survey of Africans in ten countries that in nine out of the ten countries, by a margin of between 61% and 91%, African respondents said Chinese influence was good, substantially exceeding the positive response for American influence).

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[162] *See, e.g.* El Tayeb Siddig, *China vows to support Sudan after southern secession*, Reuters, Aug. 8, 2011, http://www.reuters.com/article/2011/08/09/us-sudan-china-idUSTRE77800Z20110809.

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[54] A local NGO and Telecom Namibia collaboratively created, Xnet Development Trust, which provides affordable Internet access to various social sectors like, education, health, and agriculture; The Namibian Ministry of Education developed TECH/NA!, which provides "educational institutions with hardware, software," Internet and technical support, as well as, education for "administrators, staff, teachers, and learned in ICT literacy" Shafika Isaacs, *Survey of ICT and Education in Africa: Namibia Country Report*, InfoDEV.org (2007), http://www.infodev.org/en/Publication.420.html; however programs have not proven effective as seen with SchoolNet Namibia. A not-for-profit civil society organization intended to provide "sustainable, affordable open source technology solutions and Internet access . . . to schools" and other education-based organizations throughout Namibia, but has "failed because of mismanagement by the Ministry of Education and a lack of vision inside the ministry" Augetto Graig, *Namibian ICT State Shocking*, Namibian Sun (Oct. 21, 2011), available at http://www.namibiansun.com/content/click/namibian-ict-state-shocking.

[55] *See Namibia, supra* note 50 (acknowledging Namibia's formal independence as 1990).

[56] *See generally* Namibia Vision 2030, (2004) (Namibia) *available at* http://www.npc.gov.na/vision/pdfs/Summary.pdf; *see also* Interview with Minister of Information and Communication Technology Joel Kaapanda, ITU Telecom World, (Oct. 24, 2011).

[57] Interview with Minister of Information and Communication Technology Joel Kaapanda.

[58] Africa Mobile Observatory: Driving Economic and Social Development through Mobile Services, *supra* note 3, at 34.

[59] Interview with Vestas Vice President of Communications Andrew Hilton, Vestas Central Europe, (Nov. 8, 2011).

[60] *Africa Mobile Observatory: Driving Economic and Social Development through Mobile Services*, *supra* note 3, at 38.

[61] *Country Strategy Paper and National Indicative Programme for the Period 2008-2013*, *supra* note 50, at 14.

[62] *Id.* at 38.

[63] *Ghana's Infrastructure: A Continental Perspective*, *supra* note 35, at 21-22.

[64] Ariel Schwartz, *Truly Local Power: African Wind Turbines Built From Scrap*, Co.exist, http://www.fastcoexist. com/1679335/truly-local-power-african-wind-turbines-built-from-scrap (last visited Apr. 24, 2012).

[65] *See generally Rio Declaration on Environment and Development, supra* note 28, at principle 4.

[66] Africa Mobile Observatory: Driving Economic and Social Development through Mobile Services, *supra* note 3, at 37.

[67] Akinola, *supra* note 4.

[68] *Id.*

[69] *Id.*

[70] *Ghana's Infrastructure: A Continental Perspective*, *supra* note 35, at 37.

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[72] *Id*.

[73] Atkins, *supra* note 2.

[74] R.B. Hiremath et al., *supra* note 71, at 4-10.

[75] *Id.*

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[79] Henry Gichungi, *Solar Potential in Kenya* (2010), *available at* http://www.sv.uio.no/iss/english/research/projects /solar-transitions/announcements/Kenya-Henry_Gichungi.pdf.

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[83] *Solar Energy in Namibia Comes of Age,* TotalSolarEnergy.co.uk, http://www.totalsolarenergy.co.uk/solar-power-in-namibia.html (last visited March 18, 2012).

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[89] *Id.*

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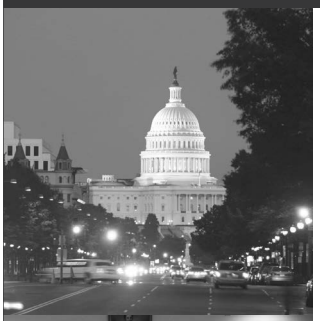

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