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Making Sand Castles as the Tide Comes In: Legal Aspects of Climate Justice

Elizabeth Burleson*

"The multifaceted challenge of development cuts across a vast array of interlinked issues—ranging from gender equality through health and education to the environment."

I. Introduction

Achieving climate justice and the Millennium Development Goals ("MDGs")² are mutually reinforcing challenges. The achievement of both is well within the capacity of the international community. Indeed, reaching carbon neutrality in an affordable, environmentally sound way requires integrating the strategies of mitigation, adaptation, sustainable development, and disaster risk management.

Part II of this Article provides a background on the MDGs and demonstrates the linkages between climate change goals and the MDGs. Part III of this Article offers three means by which the United Nations ("UN") and its partners may achieve both global sustainable development and address climate change. The first means is to focus on civil society³ development through more effective rule of law, support for human rights, and access to justice programming to enable people, especially the poor and disadvantaged, to adapt to climate change and achieve sustainable development. Concentrating on MDG 7, ensuring environmental sustainability,⁴

this section makes concrete recommendations on achieving climate justice, water governance, and environmentally sound innovation and cooperation. The second means is to improve water governance. Environmental governance generally and water governance in particular encompass such cross cutting issues as management of communal land and the importance of working with traditional and non-state justice systems. The third means is to encourage innovative clean energy technologies. Part IV of this Article concludes that MDGs can best be achieved through inclusive measures that enhance effective, transparent, accountable, equitable, and sustainable use of resources as well as facilitate public participation.

II. Linkages between Climate Governance and the MDGs

The international community can achieve an effective and equitable response to climate change by strengthening its commitment to climate mitigation, adaptation, funding, and innovation. At the same time, the international community can continue to accelerate progress towards meeting the MDGs. World leaders adopted the MDGs in 2000 with the goal of achieving them by 2015. The MDGs set forth measurable benchmarks for the following eight goals: (1) Eradicate extreme poverty and hunger; (2) Achieve universal primary education; (3) Promote gender equality and empower women; (4) Reduce child mortality; (5) Improve maternal health; (6) Combat HIV/AIDS, malaria and other diseases; (7) Ensure environmental sustainability; and (8) Develop a Global Partnership for Development.⁵ The MDGs do not exist in a vacuum separate from climate change prevention goals. The United Nations Framework Convention on Climate Change ("UNFCCC") commits all parties to "common but differentiated responsibilities,"⁶ and the Kyoto Protocol⁷ sets man-

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1. U.N. Secretary-General, *In Larger Freedom: Towards development, Security, and Human Rights for All*, ¶ 28, U.N. Doc. A/59/2005 (March 21, 2005) [hereinafter *Enlarged Freedom*], available at <http://www.un.org/largerfreedom/contents.htm>.
2. See generally *Millennium Development Goals*, UNITED NATIONS, <http://www.un.org/millenniumgoals/> (last visited Feb. 27, 2011) (providing information on the MDGs).
3. Civil society organizations are also known as nongovernmental organizations. See generally *U.N. and Civil Society*, UNITED NATIONS, <http://www.un.org/en/civilsociety/index.shtml> (last visited Feb. 27, 2011) (describing the partnerships between the UN and civil society).
4. *Millennium Development Goals Indicators*, U.N. STATISTICS DIV., <http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm> (last

visited Feb. 27, 2011) (providing the official list of MDG goals, targets, and indicators).

5. For more information on the MDGs see *Millennium Development Goals*, U.N. DEV. PROGRAMME, <http://www.undp.org/mdg/>.
6. U.N. Framework Convention on Climate Change art. 4, May 9, 1992, 1771 U.N.T.S. 107 (entered into force Mar. 21, 1994) [hereinafter UNFCCC], available at <http://unfccc.int/resource/docs/convkp/conveng.pdf>.
7. See Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 6, opened for signature Mar. 16, 1998, 2303 U.N.T.S. 162 (entered

datory emission reduction goals.⁸ The Kyoto Protocol entered into force in 2005 and extends until 2012.⁹ The international community must agree on stabilization targets for greenhouse gas (“GHG”) emissions, working out a post-2012 framework.¹⁰

Global GHG emissions have increased by fifty percent since 1970 and are likely to grow by another fifty percent by 2030. At the crux of the debate, there appears to be a gap of approximately four gigatons of GHG emissions between the present country pledges and the level of forty-four gigatons of GHG emissions required by 2020 to stay below a 2°C rise in average global temperature.¹¹ We are likely to reach an increase of 3°C by 2050.¹² A temperature rise of this magnitude “would mean up to 170 million more people suffering severe coastal floods and 550 million more at risk of hunger.”¹³ This substantially hinders global efforts to achieve the MDGs.

A comprehensive, cooperative adaptation framework can support national adaptation plans that facilitate climate-resilient development.¹⁴ UN and NGO programming can support nations in implementing early warning systems, disaster risk reduction strategies, and risk management plans.¹⁵ The UN Deputy High Commissioner for Refugees, L. Craig Johnstone, explains that climate change is likely to displace 6 million people annually, forcing up to 250 million

people to become refugees by 2050.¹⁶ The number of people uprooted by all causes in 2007 was 67 million, of which 25 million were impacted by natural disasters.¹⁷ Johnstone notes that “[y]ou can expect that as you have droughts, as you have scarcity of resources . . . it will increase tensions and it will increase conflict.”¹⁸ These concerns can be overcome by continued efforts to internalize economic externalities without disproportionately impacting already marginalized members of society. Sharing environmentally sound technologies can facilitate developing countries’ abilities to mitigate climate change and adapt to its impacts.¹⁹ Inclusive international decisionmaking involving a wide array of stakeholders in a participatory manner can avert increased tensions that can occur as equity is shunted to the side in the name of efficiency. The international community has faced collective action challenges in the past and has never been more economically interdependent. Transparency, representation, and public participation are procedural values of the UNFCCC process that are as instrumental as the substantive issues of mitigation, adaptation, funding, technology, carbon sinks, and verification.²⁰ The international community has learned a great deal about the complexities involved in addressing climate change and must now relearn the simple lesson of cooperation in order to achieve sustainable development.

The interrelated water, energy, and food crises increase the challenges that countries face in meeting their MDG commitments. In addition to these global challenges, participating countries must address the exclusion of marginalized communities and individuals. *The Oxford Handbook on the United Nations* notes that:

The term ‘Good Governance’ is often used to refer to the promotion of the rule of law and equal justice under the law, and to a governing process that ensures that political, social, and economic priorities of a state are based on a broad consensus within its civil society. In addition, good governance is now generally accepted to mean a process through which governments actively address socioeconomic problems facing their citizens.²¹

into force Feb. 16, 2005) [hereinafter *Kyoto Protocol*], available at http://unfccc.int/kyoto_protocol/items/2830.php.

8. *Id.* art. 3. The treaty notes that the greenhouse gases include carbon dioxide (“CO₂”), methane (“CH₄”), nitrous oxide (“N₂O”), hydrofluorocarbons (“HFCs”), perfluorocarbons (“PFCs”), and sulphur hexafluoride (“SF₆”). *Id.* Annex A.

9. *Id.* art. 3.

10. Press Release, U.N. Framework Convention on Climate Change, Historic United Nations Climate Change Conference Kicks off in Copenhagen (Dec. 7, 2009), available at <http://www.unep.org/Documents/Multilingual/Default.asp?DocumentID=606&ArticleID=6394&l=en>.

11. Suzanne Goldenberg et al., *Leaked UN Report Shows Cuts Offered at Copenhagen Would Lead to 3C Rise*, GUARDIAN, Dec. 17, 2009, <http://www.guardian.co.uk/environment/2009/dec/17/un-leaked-report-copenhagen-3c>.

12. *Id.* (“In one sense this is no secret—we’ve been saying it for months.”); see also Pete Harrison, *Climate Deal on Ships and Planes Seen Slipping Away*, REUTERS, Dec. 17, 2009, <http://www.reuters.com/article/idUSTRE5BF3X320091216> (noting that climate negotiators in Copenhagen were unlikely to reach an agreement on capping emissions from shipping and aviation, which together produce about eight percent of all GHG emissions); Shai Oster, *The Climate Conference—Copenhagen: World’s Top Polluter Emerges as Green-Technology Leader*, WALL ST. J., Dec. 16, 2009, <http://online.wsj.com/article/SB126082776435591089.html> (noting that “China and the US together have 44% of the world’s coal reserves, and aren’t about to give up on the cheap and reliable source of power. According to US government projections, world coal use could increase nearly 50% by 2030.”).

13. Goldenberg et al., *supra* note 11 (citing NICHOLAS STERN, *THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW* (Cambridge Univ. Press 2006)).

14. The Negotiating Text prepared for the Copenhagen Meeting of the Parties, for example, recommended “a three-year pilot phase of adaptation activities implemented cooperatively, to catalyse rapid learning about adaptation good practice by supporting enhanced implementation of demonstration projects, programmes and policies in vulnerable countries and communities.” U.N. Framework Convention on Climate Change, Ad Hoc Working Group on Long-Term Coop. Action Under the Convention, Negotiating Text, June 1–12, 2009, ¶ 24(h), U.N. Doc. FCCC/AWGLCA/2009/8, Annex 1 (May 19, 2009), available at <http://unfccc.int/resource/docs/2009/awglca/eng/08.pdf>.

15. See *id.* ¶ 39.

16. Megan Rowling, *UN Says Climate Change May Uproot 6 Million Annually*, REUTERS, Dec. 8, 2008, <http://www.reuters.com/article/idUSTRE4B773G20081208>; see also Andrew Dobbie, *Climate Change Could Force Millions From Homes*, REUTERS, Oct. 10, 2008, <http://www.reuters.com/article/idUSTRE497BQK20081008> (noting that it is more likely that low-income persons will be displaced, and human trafficking networks could benefit from the serious environmental situations).

17. Rowling, *supra* note 16.

18. *Id.*

19. *All Things Considered: Climate Envoy: China, India Remain Stumbling Blocks* (NPR radio broadcast Dec. 17, 2009), <http://www.npr.org/templates/story/story.php?storyId=121576370>. U.S. lead negotiator Stern points out that “the U.S. is the most innovative country in the world. We need to get our innovators working, develop a whole green tech set of industries.” *Id.*

20. Elizabeth Burleson and Diana Pei Wu, *Collaborative Community-based Natural Resource Management*, 21 FORDHAM ENVTL. L. REV. 201 (2010).

21. W. Andy Knight, *Democracy and Good Governance*, in *THE OXFORD HANDBOOK ON THE UNITED NATIONS* 620, 631 (Thomas Weiss & Sam Daws eds.,

The UN gains capacity by partnering with civil society, and vice versa, to address global collective action challenges.²² For instance, in the water sector, the International Union for the Conservation of Nature ("IUCN") notes that "[c]ombining water governance capacity with a strong enabling environment and basing both on a respect for traditional norms and values can produce effective governance outcomes."²³ Transparency,²⁴ certainty, accountability, and a lack of corruption are preconditions for good governance and can be fostered by civil society's participation in decisionmaking.²⁵ The UNDP explains that:

Citizens demand the public service, at national and sub-national levels, to be democratic, efficient in the use of public resources, effective in the delivery of public goods and services, capable of ensuring equitable distribution of development benefits, cognizant of differing needs of men and women, rural-urban and vulnerable, socially responsible and successful in providing opportunities for all citizens, and offering options for seeking redress when deficiencies occur.

To deliver on these expectations, governing institutions need to demonstrate capacities, skills and properly managed systems to: formulate specific strategies and policies, coordinate debate and dialogue with development partners and civil society, ensure participation and engagement from all sections of the population, organize databases and make available the information and analysis necessary for decision making; deliver services efficiently and cost effectively, forge partnerships; improve coordination, enhance the regulatory framework, design incentives to improve motivation of the civil servants and, last, but not least, ensure that ethical and professional standards are defined and enforced to guarantee clean and honest government for the benefit of the poor. . . . [C]ivil society organizations (CSOs) and, indeed, all development partners need to come together at the country level to engage and act in real time to close the remaining deficits, strengthen and expand on progress already made, and ensure it is sustainable.²⁶

The next section sets forth ways in which the UN and NGOs can provide leadership in identifying and working

toward sector-specific, local remedies as well as help coordinate broader efforts.

III. Sustainable Development Recommendations

Sustainable development involves taking seriously the integration of international human rights, environment, development, and participatory decisionmaking. Eloquence may inspire action but words alone will not address climate change nor achieve the MDGs. Members of the general public contribute in both positive and negative ways to development. Civil society involvement in climate decisionmaking can increase the effectiveness of measures pursued at the local, regional, and international level. Some measures will best be pursued through human rights regimes while others will be most effectively resolved through climate negotiations, trade or other forums. Factors that together can achieve sustainable development include an open and constructive process that can lead to stabilizing greenhouse gases, helping communities adapt to climate disruptions, funding technology transfer, and creating a legal framework that can support the international community in its environment and development agenda.

A. Facilitating Civil Society to Achieve Climate Justice

Cooperative programming initiatives such as judicial and parliamentary training on environmental laws can enhance the capacity for good governance by encouraging ratification and implementation of environmental treaties.²⁷ Furthermore, governments can build capacity by strengthening inclusive monitoring of environmental protection, fostering reasonable and equitable property laws and policies at every level, and facilitating public access to information from environment and energy entities.²⁸ Civil society gains decisionmaking skills through involvement in inclusive decisionmaking.²⁹ Education and awareness-raising initiatives help build capacity to share perspectives and effectively and equitably reach middle ground in consensus-building forums.³⁰

The UN Environmental Programme ("UNEP") points out that further work needs to be done in balancing the rights of future and present generations, noting that "[w]e have to develop the precautionary principle. We must look at some of the shortcomings of our modern legal systems."³¹ The UN and its partners can continue to facilitate capacity

2007) (arguing that states should govern inclusively and humanly, and be mindful of human rights and the rule of law).

22. Paul Wapner, *Civil Society*, in *THE OXFORD HANDBOOK ON THE UNITED NATIONS* 254, 262 (Thomas Weiss & Sam Daws eds., 2007).

23. INT'L UNION FOR CONSERVATION OF NATURE, RULE—REFORMING WATER GOVERNANCE 97 (Alejandro Iza & Robyn Stein eds., 2009) [hereinafter Iza & Stein], available at <http://data.iucn.org/dbtw-wpd/edocs/2009-002.pdf>. The IUCN notes further that "[d]eveloping policies, laws and institutions is a prelude to governing. All manner of social water arrangements must be accommodated when governing, including laws, regulations, deals, contracts, verbal agreements, and any kind of agreement between parties over issues related to water management." *Id.*

24. *Id.* at 38. The IUCN notes that "[t]ransparency means that business is done in the open rather than in secret. Documents are available to the public, meetings are open, public input is sought and considered. By opening proceedings to the light of day, especially to the inspection of a free press, a loyal opposition party, and public interest groups, corruption will be discouraged or at least discovered." *Id.*

25. *Id.* at 97.

26. U.N. DEV. PROGRAMME, ENTRY POINTS FOR ANALYZING GOVERNANCE—MILLENNIUM DEVELOPMENT GOALS LINKAGES 1–2 (forthcoming 2011).

27. EMILIE FILMER-WILSON WITH MICHAEL ANDERSON, INTEGRATING HUMAN RIGHTS INTO ENERGY AND ENVIRONMENT PROGRAMMING: A REFERENCE PAPER 25 (2005), available at http://hurilink.org/tools/Integrating_HRs_into_Energy_and_Environment_Programming.pdf.

28. *Id.* at 25–27 (broad-based participation may require programming to include visiting vulnerable groups and involving them in a manner that does not reinforce existing power imbalances and discrimination).

29. See Elizabeth Burleson, *A Climate of Extremes: Transboundary Conflict Resolution*, 32 VT. L. REV. 477, 487 (2008).

30. See FILMER-WILSON WITH ANDERSON, *supra* note 27, at 28.

31. Christopher Weeramantry, *Justice Can Be Shortsighted*, 15 OUR PLANET (UNEP), no. 3, 2004 at 8, available at http://www.unep.org/ourplanet/imgversn/153/images/Our_Planet_15.3_english.pdf; see also Guy Canivet, *Force of Law*, 15 OUR PLANET (UNEP), no. 3, 2004 at 9, available at <http://>

building by promoting judicial training on environmental law.³² UNEP explains that

[a]mong Rio's successes have been leading almost every country to set up a ministry in charge of the environment or an environment protection agency, and inscribing sustainable development on every national agenda. . . . Asian governments today are much more conscious of the need to address [environmental challenges]. With growing prosperity, they are better endowed to deal with the problems. Their peoples are rising up and demanding that the state do something to clean up the environment and afford them a higher quality of life. They are no longer willing to breathe polluted air, to drink contaminated water, and to allow their natural environment to be destroyed.³³

Programming can determine what barriers exist to broad-based fulfillment of such measures and whether environmental and human rights concerns are prioritized in a given jurisdiction. Governments can enhance awareness of such rights among officials and civil society by providing access to environmental information, decisionmaking forums, and redress.³⁴ It can also be helpful to clarify which entities have been tasked with designing and implementing environmental and human rights provisions as well as what options are available for judicial or alternative dispute resolution.³⁵ Jurisdiction over natural resources and human rights can vary between countries, being addressed at a local level in one country and at a national level in another. Collaborative initiatives can help identify where capacity gaps in these fields exist.³⁶ Judicial training on environmental laws can help fill such gaps.³⁷

Inclusive design of program goals and indicators can increase broad public participation in sustainable development decisionmaking that balances competing stakeholder interests³⁸ while remaining mindful of principles set forth in international and regional conventions. Programming can take steps to address the legal, cultural, and political roots of marginalization. Accountable programming can incorporate transparent processes that contribute to effective and equitable monitoring and evaluation.³⁹ Forums that increase the frequency of interactions enable negotiators to build trust and form stable expectations. Transparency and civil society participation can play a crucial role in achieving international agreements that recognize the consensus view of scientists on climate change.

Another critical aspect of promoting civil society is ensuring effective "rule of law." The rule of law encompasses a principle of governance in which everyone is

accountable to laws that are publicly promulgated, equally enforced and independently adjudicated, and which are consistent with international human rights norms and standards. It requires, as well, measures to ensure adherence to the principles of supremacy of law, equality before the law, accountability to the law, fairness in the application of the law, separation of powers, participation in decision-making, legal certainty, avoidance of arbitrariness and procedural and legal transparency.⁴⁰

The international community can help plug funding leakages due to corruption by undertaking corruption risk assessments and supporting policies and legislation to protect whistleblowers. In relation to access to justice, the UN and NGOs can determine whether judicial systems are sufficiently staffed to avoid a backlog of cases and facilitate alternative justice system availability. These systems can include legal access centers and mobile legal units. Finally, the UN and NGOs can facilitate increasing access to legal counsel for poor and marginalized people. Capacity building can occur through cooperation among justice officials, civil society, and the UN, which can offer legal advice, organize inclusive gatherings, and encourage involvement by women and traditionally excluded groups.⁴¹ UNDP notes that

[l]egal empowerment of the poor is a cross-cutting approach that both draws from and reinforces principles of democratic governance, gender equality, poverty reduction, environmental sustainability and capacity development. From a programmatic point of view, legal empowerment can be used as an instrument for ensuring that the poor can and do benefit from services and reforms. It also offers an assessment methodology that can help clarify who benefits from which rights and identify bureaucratic bottlenecks that prevent the poor and excluded from exercising their rights.⁴²

Good governance requires a strong commitment to transparency, accountability, and eliminating corruption.⁴³ Citizen groups have altered public views on sustainable development by raising awareness, supporting legislative campaigns, and filing judicial lawsuits to protect the environment and public health.⁴⁴ Alejandro Iza and Robyn Stein explain that public participation "generates trust and empowerment among stakeholders and creates respect and support for the decision-making process."⁴⁵ The UN notes that

www.unep.org/ourplanet/imgversn/153/images/Our_Planet_15.3_english.pdf.

32. See Bakary Kante, *One Planet, Different Worlds*, 15 OUR PLANET (UNEP), no. 3, 2004 at 22–23, available at http://www.unep.org/ourplanet/imgversn/153/images/Our_Planet_15.3_english.pdf.

33. Tommy Koh, *Rule of Man or Rule of Law?*, 15 OUR PLANET 3 (UNEP), no. 3, 2004 at 14, available at http://www.unep.org/ourplanet/imgversn/153/images/Our_Planet_15.3_english.pdf.

34. FILMER-WILSON WITH ANDERSON, *supra* note 27, at 9.

35. *Id.* at 22.

36. *Id.* at 9.

37. *Id.* at 16.

38. *Id.* at 20–21.

39. *Id.* at 43.

40. U.N. Secretary-General, *The Rule of Law and Transitional Justice in Conflict and Post-Conflict Societies: Rep. of the Secretary-General*, ¶ 6, UN Doc. S/2004/616 (Aug. 23, 2004), available at <http://www.undp.org/cpr/documents/jssr/ssr/rule of law and transitional justice.pdf>.

41. *Id.* ¶ 15.

42. U.N. Dev. Programme, UNDP's MDG Breakthrough Strategy: Accelerate and Sustain MDG Progress, at 41 (2010), <http://content.undp.org/go/cms-service/download/publication/?version=live&cid=2578286>.

43. Iza & Stein, *supra* note 23, at 94.

44. *Id.* at 87.

45. *Id.* at 86–87.

[c]itizen participation in decision-making at all levels is also central to promoting good governance—creating a climate of accountability and transparency. Organized interest groups, community-based associations and other groups with the capacity and legitimacy to express views are crucial. Promoting a culture of consultation within the water sector and increasing consultative and participatory capacity in general, will deliver benefits for collaborative water management.⁴⁶

UN initiatives to support legal empowerment can facilitate knowledge sharing and capacity development for policy and program design, as well as highlight best practices.⁴⁷ Involving civil society in decisionmaking can lead to efficient and equitable good governance, in the water sector and beyond.

Programming can provide crucial support to countries in accelerating efforts to achieve the MDGs. UN-specific tasks, including coordination, advocacy, governance, and capacity development, can provide leverage across all the MDG sectors to complement the work of specialized UN agencies and development partners.⁴⁸ Based upon proven initiatives that have made progress in achieving the MDGs, governments can agree to a global action agenda setting forth clear roles for partnerships to accelerate MDG progress at the country level.⁴⁹ The UN is well positioned to provide leadership to raise broad public awareness of MDG acceleration efforts.⁵⁰ It can achieve this by engaging with civil society through film screenings and sending goodwill ambassadors to participate in large social events.⁵¹

Climate change and the economic crisis continue to increase the challenges with which UNDP partnerships must contend in achieving the MDGs. Yet political will, funding, and implementation commitments are forthcoming and can be targeted based upon best practice models from around the world. This will enable the international community to meet the MDGs even in the poorest and most disadvantaged countries—places where substantial successes have been seen in reducing poverty, saving lives, and expanding access to education and clean water.

Global crises lead to shocks at the international, regional, national, and local levels, as climate disruption and armed conflicts continue to ebb away at efforts to accelerate MDG progress. While such challenges are mounting, we have the shared knowledge and expertise with which to accelerate progress. With a MDG acceleration framework, partnerships can transcend obstacles delaying progress on all of the MDGs. Uneven success across the MDGs, regions, countries, and local communities can be overcome through sharing such best practices as rainwater harvesting, drip irrigation, solar cookers, and a wide range of other low-cost and low-carbon technologies. Innovation, diffusion of technolo-

gies, and capacity building will require the assistance of the UN and a wide range of partners at all scales of political and social organization.

A multilateral, interdisciplinary response to interrelated global challenges can support local progress. This can be done in an inclusive manner, investing in women, youth, indigenous and minority communities to collectively achieve the MDGs. Needs will differ between countries, given the increase in resource constraints in proportion to country poverty and capacity. While the least developed countries need substantial international assistance, middle-income countries can benefit from policy support to optimize redirection of funding towards the MDGs.

Good governance can accelerate implementation of country commitments, as can partnerships with civil society, the UN system, philanthropic communities, and business. Sustained, equitable, collective action can overcome the challenges that stand between us and achieving the MDGs. Development partners can support the enhancement of national policies and develop institutional capacities. Public-private partnerships can leverage and sustain predictable funds that lead to widespread progress in an accountable and transparent way. UNDP's channels of communication, stature, and expertise lend themselves well to gathering disadvantaged stakeholder wisdom, helping countries implement environmental justice tools for the poor, and raising awareness regarding rights, tools, and processes of value to highly climate-vulnerable communities.

While substantial progress has been made, pending challenges remain. Many states that have reported being on track have yet to progress on MDGs in relation to minorities.⁵² For instance, large dam construction may be pursued to meet the seventh MDG, ensuring environmental sustainability, by providing access to water and lowering reliance on coal, while at the same time risking broader human rights violations concerning the displacement of minorities and indigenous communities.⁵³ The World Commission on Dams established a multi-stakeholder process that has incorporated environmental sustainability concerns into water development decisions.⁵⁴ Integrating human rights and environmental sustainability continues to be a work in progress around the world.

Similarly, while water privatization may increase the funds that states may devote to achieving MDGs, it may also have serious human rights implications that must be addressed.⁵⁵ Rights to livelihoods, housing, food, and the environment

46. U.N. World Water Assessment Programme, *The United Nations World Water Development Report 3: Water in a Changing World*, at 270 (2009), http://www.unesco.org/water/wwap/wwdr/wwdr3/pdf/WWDR3_Water_in_a_Changing_World.pdf.

47. U.N. Dev. Programme, *supra* note 42, at 41.

48. *See id.* at 3, 7, 9, 13.

49. *See id.* at 20–21.

50. *See id.* at 55.

51. *See, e.g., id.* at 56.

52. U.N. HUMAN RIGHTS, OFFICE OF THE HIGH COMM'R FOR HUMAN RIGHTS, CLAIMING THE MILLENNIUM DEVELOPMENT GOALS: A HUMAN RIGHTS APPROACH, at 9, U.N. Doc. HR/PUB/08/3, U.N. Sales No. E.08.XIV/6 (2008) [hereinafter OHCHR], available at http://www.ohchr.org/Documents/Publications/Claiming_MDGs_en.pdf.

53. *Id.* at 13.

54. U.N. World Water Assessment Programme, *supra* note 46, at 12.

55. OHCHR, *supra* note 52, at 13 (“[I]f prices significantly rise after privatization, then existing and future users’ access to water and health care may be curtailed or reduced, even if the service is nationally available.”); *see id.* at 14 (“South Africa’s Water Services Act places obligations on local authorities to develop and implement plans to extend access and make it affordable.”); *id.* at 39 (“In Ecuador, the Constitution provides not only for the right to water, but also for the regulation of public and private utilities. Regulation should also cover the informal vendors on whom the poor often rely for water and sanitation.”).

must be considered when making decisions on infrastructure projects.⁵⁶ Good governance encompasses redress mechanisms that are effective, accessible, and transparent.⁵⁷ States can support the informed participation of marginalized people in efforts to achieve the MDGs.⁵⁸ Ombudsmen and treaty body involvement as well as parliamentary and administrative mechanisms can facilitate accountability.⁵⁹ Raising awareness within civil society is also a key means by which good governance can be achieved and sustained.⁶⁰ Addressing the political marginalization of vulnerable groups can help end discrimination on the basis of ethnicity, gender, and other factors.⁶¹ It is important for providing countries and NGOs to be mindful that sustained political pressure is most easily mobilized in states with civil and political freedoms. Yet, participatory civic engagement by marginalized people can be fostered if countries commit to human rights processes and institutions.⁶²

The third MDG promotes gender equality and empowering women.⁶³ States can enhance gender equity by actively supporting efforts by parents and communities to invest in girls' education. Beyond the important step of providing free elementary education, states must ensure that girl-friendly schools are safe and have water facilities for all students. Among the barriers that prevent girls from attending school, the role many girls play as water carriers is glaring. UNDP encourages

[i]nvest[ing] in expanded opportunities for women and girls and advancing their economic, legal and political empowerment Providing infrastructure to households, such as alternative energy sources, water and electricity, reduces the burden of domestic activities and frees girls to attend schools and women to engage in self-employment or participate in labor markets.⁶⁴

When states provide an alternative means by which families can access water, they improve girls' access to education.⁶⁵ Women and girls should be included in designing and implementing systems and programs for water and sanitation.⁶⁶

The UN Water Report calls upon countries to work progressively toward water availability by

expanding affordable access as well as protecting the quality of the water supply; actively searching for the available resources, nationally and locally; implementing the plan and monitoring its implementation over time; and providing systems of accountability. This also requires states to ensure everyone can access the minimum amount of water.⁶⁷

Key recommendations of the UN Office of the High Commissioner for Human Rights for ensuring water availability include:

- Enshrine the right to water and sanitation in enabling legislation and set clear national and local benchmarks to ensure water and sanitation will be extended to poorer and marginalized areas.
- Measure affordability and regularity of water to get a better picture of effective access to it.
- Respect and protect the right to water and sanitation by establishing effective institutional and other mechanisms to guard against unfair disconnections and allocations, and against water pollution.
- Ensure informal settlements and farm workers and dwellers have rights to access water and sanitation, and water rights of indigenous peoples are protected.
- Right to water and sanitation expressly contained in law as justiciable right.
- National policy with a timeline to extend access to water and sanitation.
- Percentage of household expenditure on drinking water and sanitation for those living under the poverty line.
- Average number of days of disruption per year.
- National standards on drinking water quality and use of W[orld] H[ealth] O[rganization] guidelines.⁶⁸

States can facilitate civil society organization monitoring of environmental protection by recognizing and protecting rights to participate in climate decisionmaking.⁶⁹

B. Water Governance and the MDGs

Water management can become a model for good governance. If a country is to resort to full cost recovery for water use and wastewater treatment services, then it is important to include subsidies to low-income water users.⁷⁰ Water privatization efficiency must not come at the expense of human rights. Every state has distinct traditions and geographic con-

56. *Id.* at 20.

57. *Id.* at 15.

58. *Id.*

59. *Id.*

60. *Id.*

61. *Id.* at 22.

62. *Id.* at 4 ("These include courts, national human rights institutions and informal justice systems, and international mechanisms, including treaty bodies, independent expert committees that oversee compliance by States with their international human rights treaty commitments.").

63. *Millennium Development Goals*, *supra* note 2. For more information on the MDGs see U.N. DEV. PROGRAMME, *supra* note 5.

64. U.N. Dev. Programme, *What Will It Take to Achieve the Millennium Development Goals? An International Assessment*, at 14, 39 (June 2010), http://content.undp.org/go/cms-service/stream/asset?asset_id=2620072.

65. Elizabeth Burleson, *Water Leadership and the Rights of Youth to Sustainable Development*, 31 HAMLINE L. REV. 755, 761 (2008); see also Elizabeth Burleson, *Water is Security*, 31 U.C. DAVIS ENVIRONS: ENVTL. L. & POL'Y J. 197, 213 (2008).

66. *Water Leadership and the Rights of Youth to Sustainable Development*, *supra* note 65, at 762; see also *Water is Security*, *supra* note 65, at 213.

67. OHCHR, *supra* note 52, at 39.

68. *Id.* at 40, box 35.

69. See *id.* at 37–38.

70. Iza and Stein, *supra* note 23, at 84 ("Traditionally, national agencies are funded out of the national budget, but there is an increasing tendency to make water management agencies self-sustaining by imposing water-use charges. Smaller WUAs [Water User Associations], directly involved with the management of water, can usually be funded from direct user charges. However, agencies with more IWRM [Integrated Water Resource Management] responsibilities need support from the national government. National funding also recognizes the broader social and economic benefits of IWRM.").

ditions, requiring a country-specific approach to sustainable development. UNDP notes that “[t]he most high-yield entry points on MDG acceleration should be identified in each country. For example, promoting equitable access to water resources and water and sanitation services could have a profound impact on peoples’ livelihoods and on their ability to break out of poverty.”⁷¹ The Community Water Initiative (“CWI”) targets the seventh MDG by combining measures to address climate change and water availability for marginalized people.⁷² CWI can integrate efforts to achieve conservation, solar water pumping, and reforestation and accelerate adoption around the world.⁷³

Wet regions of the world will become wetter and dry regions will become drier, according to the Intergovernmental Panel on Climate Change (“IPCC”).⁷⁴ The UN Water Report notes that the importance of “sustainable access to safe drinking water and adequate sanitation to achieving the Millennium Development Goals is well established. Largely ignored, however, is the fact that water resources are at the core of many of the Millennium Development Goals on which progress is lagging.”⁷⁵ A broader enabling framework can enhance water governance, especially when combined with increased investment in the water sector and better water-related information. Accountability and transparency are key ingredients of an anti-corruption strategy, as is “citizen participation and access to information, independent checks and balances and oversight mechanisms, public sector codes of conduct and attention to incentives to corruption in public administration.”⁷⁶ The UN Water Report notes that

important decisions affecting water management are made outside the water sector and are driven by external, largely unpredictable forces—forces of demography, climate change, the global economy, changing societal values and norms, technological innovation, laws and customs and financial markets. Many of these external drivers are dynamic, and changes are accelerating.⁷⁷

States can enact environmental targets with set deadlines for integrated water resources management, accompanied with adequate resources and broad policies.⁷⁸ UNDP and its partners can support water institutions’ efforts to sustainably develop water resources by coordinating with other institutions and civil society and building upon best practices in managing water rights.⁷⁹ IUCN notes that “[h]ow a country manages its water resources determines the health of its people, the success of its economy, the sustainability of its natural environment, and its relations with its neighbours.”⁸⁰

Effective water governance capacity consists of institutions,⁸¹ implementation, and enforcement mechanisms that are supported by sound law and policy.⁸² Different laws and policies will make sense for countries with different traditions.⁸³

Water entities include various agencies, organizations, and corporations at various scales of governance.⁸⁴ “The critical issue is not to centralize or decentralize, but to coordinate the work of this multiplicity of institutions and agencies that have jurisdiction over different sectors of water management to follow a common vision and plan,” according to IUCN.⁸⁵ Water laws and policies can support public participation by setting forth rules for working with civil society.⁸⁶ For instance, the European Union Water Framework Directive (“WFD”) promotes sustainable water use and public participation.⁸⁷ It integrates the civil society involvement provisions of the Aarhus Convention, codifying rights to environmental information, participation, and equal access to judicial and administrative remedies.⁸⁸ Member states of the Aarhus Convention and its protocols recognize a human right to a clean environment.⁸⁹

While the Aarhus Convention is not focused on the private sector, when environmental regulation is devolved to private organizations, these entities then fall under the Convention’s definition of “public authorities.”⁹⁰ Under the Convention, public authorities must generate and provide basic environmental information. Access to such information facilitates informed participation in decisionmaking.⁹¹ Public authorities have both a passive responsibility to respond to requests for information and an active responsibility to collect, update, and distribute information.⁹² Access to information is often a prerequisite to public participation in environmental decisionmaking.⁹³ The Convention recognizes a public right to be heard in the lawmaking process and a right to seek judicial remedies when there is a breach of environmental law.⁹⁴

Integrated water resources management involves considering “ecological and socio-economic issues together within an eco-

71. United Nations Dev. Programme, *supra* note 42, at 57.

72. *Id.* at 44.

73. *Id.*

74. Intergovernmental Panel on Climate Change [IPCC], *Technical Paper on Climate Change and Water*, at 32, IPCC Doc. XXVIII/Doc.13 (Apr. 9, 2008), available at <http://www.ipcc.ch/meetings/session28/doc13.pdf>.

75. U.N. World Water Assessment Programme, *supra* note 46, at xi.

76. *Id.* at 270.

77. *Id.* at ix; see also *id.* at vii.

78. *Enlarged Freedom*, *supra* note 1, ¶ 41.

79. See Iza and Stein, *supra* note 23, at 71.

80. *Id.* at 17; see also *id.* at 18.

81. *Id.* at 27.

82. Iza and Stein, *supra* note 23, at 18.

83. *Id.* at 19; see also *id.* at 54.

84. See *id.* at 76.

85. *Id.* at 8.

86. *Id.* at 66.

87. *Id.* at 77.

88. Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters art. 1, June 25, 1998, 38 I.L.M. 517 (entered into force Oct. 30, 2001) [hereinafter Aarhus Convention], available at <http://www.unece.org/env/pp/documents/cep43e.pdf>. The Convention was negotiated among the Member States of the United Nations Economic Commission for Europe (“UNECE”) and adopted at a pan-European meeting of environment ministers in Aarhus, Denmark. See *Introducing the Aarhus Convention*, U.N. ECON. COMM’N EUR., <http://www.unece.org/env/pp/welcome.html> (last visited Feb. 27, 2011) (providing extensive information on the Convention and its implementation). The European Union and all of its member states signed. U.N. ECON. COMM’N EUR., Status of Ratification, <http://www.unece.org/env/pp/ratification.htm> (last visited Feb. 27, 2011) (follow link titled “Parties and Signatories to the Convention”).

89. Aarhus Convention, *supra* note 88, at pmbl., para. 7.

90. *Id.* art. 2(2)(b)-(c).

91. *Id.* art. 1.

92. *Id.* arts. 4(1), 5(1).

93. *Id.* at pmbl., para. 8.

94. *Id.* at 524.

system approach.”⁹⁵ Given the natural monopoly features of the water sector, governments should assess public-private partnerships with a commitment to equity and meaningful oversight.⁹⁶

Public participation, ranging from information sharing to decisionmaking, remains central to equitable and effective water management.⁹⁷ The water governance shift towards integrated water resources management is bringing principles of equitable distribution, efficiency, and environmental sustainability into the limelight.⁹⁸ Several ingredients of good water governance include: (1) broad participation through the entire decisionmaking process; (2) transparent flow of information; (3) equitable opportunities to increase well-being; (4) accountability from governments, the private sector, and civil society; (5) coherency of water resource measures; (6) responsiveness to changing water conditions and societal factors; (7) an integrative approach to water basin management; and (8) ethical principles that resonate with varying societies based upon inclusive dialogues.⁹⁹

The principles underlying integrated water resources management and the critical components of good water governance systems are equally applicable to inclusive innovation and diffusion, and cooperation at a local, regional, and international scale. The next section considers ways in which environmentally sound technology transfer and diffusion across the developing world can be accomplished within a meaningful timeframe to address climate change.

C. Energy Innovation and Diffusion

Increased arid conditions caused by desertification are likely to impact one-third of humanity.¹⁰⁰ Solar cookers save women and children time and energy they would otherwise spend gathering biomass and mitigate desertification caused by this activity.¹⁰¹ State and civil society efforts to mobilize resources and information about such sustainable practices as drip irri-

gation and no-till planting, where appropriate, can break the cycle of desertification exacerbating climate change.¹⁰²

The parties to the UNFCCC have agreed to establish a technology mechanism consisting of a climate technology center and technology executive committee.¹⁰³ Remaining wrinkles for the parties to iron out involve how the committee and center would interact and be funded. The parties need to engage in greater dialogue to resolve intellectual property rights concerns.¹⁰⁴ International innovation cooperation can facilitate sustainable economic growth and green job growth. “Almost half the jobs worldwide rely on fisheries, forestry or agriculture,”¹⁰⁵ according to UNEP.¹⁰⁶ The UN can partner with universities, public research institutions, the private sector, and civil society on South-South collaboration,¹⁰⁷ institutional capacity, gender equality, and sustainable development.¹⁰⁸

Properly scaled water management that gathers stakeholders in ongoing water sharing agreements can lead to natural resource management and good governance generally.¹⁰⁹ Moreover, distributive equity issues are crucial in choosing effective economic tools with which to protect natural resources. Decisionmakers should be guided in their evaluations by considering the socio-economic needs and demographics of the affected population, the effects of utilizing the resource, the existing and potential uses of the resource, and the availability of comparable alternatives.

Equitable and sustainable management of natural resources requires multidisciplinary involvement by stakeholders. The international community can address ways in which varying legal frameworks can increase or decrease sustainable development. Innovation has achieved remarkable shifts in the human condition. Water is used to generate electricity, and electricity is used to clean and transport water. Each has historically been, and will continue to be, central to individual, regional, and international security. It is possible

95. U.N. World Water Assessment Programme, *The United Nations World Water Development Report 2: Water: A Shared Responsibility*, at 185 (2006), http://www.unesco.org/water/wwap/wwdr2/table_contents.shtml [hereinafter *Water: A Shared Responsibility*].

96. *See id.* at 418–21 (noting that “contracting-out services, operation and management of the water supply, allows the public sector to take advantage of private sector technology and skills,” while maintaining the ability to ensure equity of water availability); U.N. Dev. Programme, *Human Development Report 2006: Beyond Scarcity: Power, Poverty and the Global Water Crisis*, at 10–11 (2006), <http://hdr.undp.org/hdr2006/> [hereinafter *Human Development Report*].

97. *Water: A Shared Responsibility*, *supra* note 95, at 421.

98. U.N. World Water Assessment Programme, *The United Nations World Water Development Report: Water for People, Water for Life*, at 371 (2007), <http://www.unesco.org/water/wwap/wwdr/pdf/chap15.pdf>.

99. *Id.* at 373.

100. *UN Issues Desertification Warning*, BBC NEWS, June 28, 2007, <http://news.bbc.co.uk/2/hi/africa/6247802.stm>; *see also* EMMA BECK & CATHERINE CAMERON, UK COMM. FOR UNICEF, *OUR CLIMATE, OUR CHILDREN, OUR RESPONSIBILITY: THE IMPLICATIONS OF CLIMATE CHANGE FOR THE WORLD'S CHILDREN* 14 (2008), available at <http://www.crin.org/> (explaining the lifelong health consequences of drought for children). Further, a 2°C temperature increase would put an additional 30 to 200 million people at risk for hunger and a 3°C increase could cause 550 million people to be at risk.

101. *Id.* at 32–33 (“With forests storing 283 gigatonnes of carbon in their biomass alone, curbing deforestation—and re-planting trees—is a highly effective way to reduce carbon emissions.”); *see also* Yinka O. Omorogbe, *Promoting Sustainable Development through the Use of Renewable Energy: The Role of the Law*, in *BEYOND THE CARBON ECONOMY* 39, 42 (Donald N. Zillman et al. eds., 2008)

(“Gathering biomass is an arduous task done mainly by women and children. It is also unhealthy and time consuming.”).

102. *See Combating Desertification Could Help Tackle Other Global Crises—UN Official*, UN NEWS CENTRE (Oct. 28, 2008), <http://www.un.org/apps/news/story.asp?NewsID=28756> (noting that increased land production and biodiversity in the soil would help); *see also* Aseel Kami, *Iraq To Revive Dead Farmland By Sucking Out Salt*, REUTERS, Dec. 2, 2008, <http://www.reuters.com/article/idUSTRE4B06BH20081201> (describing an Iraqi project to flush salt out of the land).

103. *See* U.N. Framework Convention on Climate Change, Copenhagen, Den., Dec. 7–15, 2009, *Outcome of The Work of The Ad Hoc Working Group on Long-Term Cooperative Action Under The Convention*, ¶ 7, U.N. Doc. FCCC/AWG/LCA/2009/L.7/Add.3 (Dec. 15, 2009).

104. Personal observation as IUCN Delegate to the Climate Negotiations (COP 16).

105. U.N. ENV'T PROGRAMME, *GLOBAL ENVIRONMENT OUTLOOK 4: ENVIRONMENT FOR DEVELOPMENT*, at 4, U.N. Doc. DEW/0962/NA (2007), available at http://www.unep.org/geo/GEO4/report/GEO-4_Report_Full_en.pdf.

106. *Id.*; *see also* BECK & CAMERON, *supra* note 100, at 12 (“Non-sustainable use of natural resources, including land, water, forests and fisheries, can threaten individual livelihoods as well as local, national and international economies.”).

107. U.N. Dev. Programme, *supra* note 42, at 57 (“South-South collaboration is crucial so that Southern solutions, Southern development experiments and Southern policy experiences with regard to MDGs can be shared among developing countries[.]”).

108. *See id.* at 46, 53.

109. Elizabeth Burleson, *Middle Eastern and North African Hydropolitics: From Edicts of Indecision to Emerging International Law*, 18 GEO. INT'L ENVTL. L. REV. 385 (2006).

to integrate water, energy, climate, sustainable development, good governance, and MDGs.

The international community can address the global impact of climate change on human displacement, security, food, health, poverty, and water.¹¹⁰ Countries should commit to addressing forced displacement and migration in the context of climate change.¹¹¹ Universities already have the infrastructure and can gain the insight and inclination to become environmentally sound technology powerhouses.¹¹² From cooperative data collection¹¹³ to regional and international energy research centers,¹¹⁴ collaboration is already underway. A ramping up of collective willpower, integrity, imagination, and intelligence can relegate energy scarcity and environmental externality concerns to historical anecdotes. This is not to say that a magic bullet is hiding just around the bend. However, assembling the rails and capacity to look around the bend increases the likelihood of recognizing and implementing a sound energy policy.

International, national, local, and individual actions can facilitate a transition to patterns of energy and water use that minimize climate destabilization going forward. This can be accomplished by bringing together informed decisionmakers who are able to work together across disciplines, gender, age, ethnicity, race, sexual diversities, disability, nationality, and other differences that have so often hindered collaboration. Consensus-building comes from listening to shared perspectives and distilling them into a common vision for the future. This can be an inclusive process that maximizes human security through legal coordination to achieve sustainable development.

IV. Conclusion

The international community is making sand castles as the tide comes in. Mitigating the greatest market failure to date is likely to require at least one percent of global GDP by 2050.¹¹⁵ In contrast, allowing climate change to continue unchecked can reduce the global economy by twenty percent, according to Sir Nicholas Stern.¹¹⁶

As UNDP explains, “[n]o issue merits more urgent attention—or more immediate action. . . . The world lacks neither the financial resources nor the technological capabilities to act.”¹¹⁷ Building consensus to collectively address climate change and achieve the MDGs is within political reach. However, drafting binding international law in a deliberative yet egalitarian manner, while keeping with the developmental norm of doing no harm to others, requires sustained commitment. The UN, states, NGOs, and civil society (including indigenous communities, youth, and women) can all play a role in developing and protecting international law.

International institutions have the capacity to bring people together to address environmental governance gaps. Reaching carbon neutrality in an affordable, environmentally sound way will require integrating the strategies of mitigation, adaptation, development, and disaster risk reduction in a manner that is mutually reinforcing.

State and civil society support for global research, development, deployment, and diffusion of environmentally sustainable energy technologies and processes will help achieve climate resilient communities.¹¹⁸ Climate justice and the MDGs are mutually reinforcing challenges, and the achievement of both is well within the capacity of the international community.

This Article integrates MDG achievement with broader climate and human rights measures, offering the UN and its partners means by which to achieve global sustainable development through inclusive community development. There are crucial opportunities to improve water governance, environmentally sound technology innovation and diffusion, and climate justice capacities. The UN and its partners can achieve the MDGs through cooperation at all scales as well as by creating enabling environments to address climate change, water, and energy innovation and diffusion.¹¹⁹ Collaborative efforts can access the best available climate information and mitigation and adaptation measures. These efforts can, in turn, improve country-specific responses by allowing countries to tailor their climate resilient policies to key sectors, such as the development of environmentally sound energy innovation and diffusion.¹²⁰ Implementation of climate friendly innovation, diffusion, and capacity building can galvanize broad-based cooperation, building trust with which to address climate change and MDG achievement.

110. See GLOBAL HUMANITARIAN FORUM, HUMAN IMPACT REPORT: CLIMATE CHANGE, THE ANATOMY OF A SILENT CRISIS 79–82 (2009) (“There is a particular need today for a new solidarity around the concept of climate justice.”). For example, globally, there are twenty-six million people displaced from climate change.

111. Press Release, Norwegian Refugee Council, 20 Million Climate Displaced in 2008 (June 8, 2009) (on file with author).

112. See generally Scott Shane, *Can Academics Be Entrepreneurial?*, N.Y. TIMES YOU'RE THE BOSS BLOG (Nov. 16, 2009, 9:00 AM), <http://boss.blogs.nytimes.com/2009/11/16/can-academics-be-entrepreneurial/?partner=rss&emc=rss>.

113. Juliet Eilperin, *U.S. and China Reach Accord on Data Collection*, WASH. POST, Nov. 19, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/11/18/AR2009111803058.html>.

114. *America, China and Climate Change: Let's Agree to Agree*, ECONOMIST, Nov. 19, 2009, http://www.economist.com/world/unitedstates/displaystory.cfm?story_id=14915108&fsrc=rss.

115. Robert Peston, *Report's Stark Warning on Climate*, BBC NEWS (Oct. 29, 2006, 3:22 PM), <http://news.bbc.co.uk/2/hi/business/6096594.stm>.

116. *Climate Change Fight "Can't Wait"*, BBC NEWS (Oct. 31, 2006, 12:32 AM), <http://news.bbc.co.uk/2/hi/business/6096084.stm>.

117. U.N. Dev. Programme, Human Development Report 2007/2008: Fighting Climate Change: Human Solidarity in a Divided World, at 1–2 (2007), <http://hdr.undp.org/en/reports/global/hdr2007-2008>.

118. See Submission from Climate Action Network to U.N. Framework Convention on Climate Change, Ad Hoc Working Group on Long-Term Cooperative Action, Finance for Mitigation and Low Carbon and Climate-Resilient Development (Feb. 6, 2009) (on file with author), available at <http://unfccc.int/resource/docs/2008/smsn/ngo/093.pdf>. Public financing must also be utilized to support and encourage private financing.

119. U.N. Dev. Programme, *supra* note 42, at 7.

120. See *United Nations Development Programme & Climate Change Adaptation*, Q. UPDATE OF ACTIVITIES (U.N. Dev. Programme, New York, N.Y.), Apr. 2010, at 2, available at <http://www.undp.org/download/Climate Adaptation Bulletin Issue No. 3 April 202010.pdf>.