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Article 1

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

In This Issue: Natural Resource Conflicts

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American University Washington College of Law

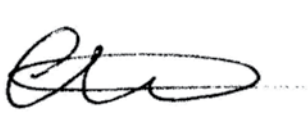
Editors' Note

In October 2011 the human population of our planet officially reached the high-water mark of seven billion.[1] According to the World Wildlife Fund's Living Planet Index, the current rate of consumption will see demand for two planets' worth of natural resources by 2030.[2] With this increasing demand and the continued development of virtually every corner of the globe, the finite nature of the Earth's resources presents a sobering reality. Through human ingenuity, industry now attempts to supplement scarce resources through research and development of synthetic and other alternatives. However, a simple, stark fact remains: certain resources such as water, timber, and land are fundamental and aboriginal as the basic elements for human survival. As the demand for natural resources rises in a finite sphere, allocation, distribution, management, and governance of these natural resources must be scrutinized. And at the core of any such critique must be the availability of the natural resources themselves.

This issue on Natural Resource Conflicts examines current contestations arising out of the use, distribution, and governance of these finite resources. We survey the globe, exploring the causes and implications of individual and localized conflicts with the ultimate goal of providing viable and successful resolutions. Through the analysis of land-based conflicts centered upon the public lands of the American West, participatory and collaborative management is heralded as one potentially effective method of resolving these disputes. Left unresolved, disputes over natural resources can escalate into public demonstrations and even armed conflicts. For example, where the imbalance of water rights distribution in Latin America favors elites and private corporations, neglected rural and indigenous communities have taken to mass protests. In the resource-rich African continent, natural resources, including petroleum and rare earth minerals, have both catalyzed and fueled violent armed conflicts.[3] Only by carefully probing and dissecting these conflicts can we hope to curb such ghastly consequences.

Here at home, highly contested domestic policy debates center around petroleum extraction, especially in the American Southwest. However, the conversation is not limited to traditional high-value resources such as oil and diamonds. Instead, scholars are now turning their attention to conflicts emerging from water disputes. For example, conflicts have arisen over water use in Central Asia, stemming from long-term overexploitation and mismanagement. As fresh water resources increase in scarcity, this new "liquid gold" only amplifies the potential for conflict.[4]

This issue of Sustainable Development Law & Policy seeks to facilitate the discussion and understanding of important developments surrounding natural resources and their relationship to various types of conflicts. Our aim is to encourage further integration of sustainable development principles within existing and emerging legal and policy frameworks. The management and governance of natural resources exert a significant influence upon the fundamental survival and security of multiple stakeholders who live near, rely on, or benefit from those resources. Resource development decision-making must take into account relevant environmental, social, and political factors if the international environmental and legal communities are to minimize and ultimately thwart natural resource conflicts.



Features:

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1 Haya El Nasser, *World Population Hits 7 Billion*, USATODAY.com (Oct. 30, 2011), http://www.usatoday.com/news/world/story/2011-10-30/world-population-hits-seven-billion/51007670/1.

2 World Wildlife Fund, Living Planet Report 2010 (2010), http://www.footprintnetwork.org/en/index.php/GFN/page/living_planet_report_20101.

3 *Rising Energy Use: Overview*, World Resources Institute, http://www.wri.org/publication/content/8332 (last visited Dec. 20, 2011).

4 *See generally* Alexander Carius et al., *Water, Conflict, and Cooperation*, *in* Environmental Change and Security Project Report 10 (2004), http://www.unep.org/dnc/Portals/155/dnc/docs/ecp/ecspr10_unf-caribelko.pdf.

About SDLP

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Introductory Comments:

The Pervasive, Persistent, and Profound Links Between Conflict and the Environment

*by Carroll Muffett and Carl Bruch**

We are pleased to introduce this special issue of *Sustainable Development Law & Policy,* which explores the diverse linkages between conflict and the environment. For the last two and a half years, we have worked together co-editing (with Sandra S. Nichols) a volume on *Governance, Natural Resources, and Post-Conflict Peacebuilding* as part of a multi-volume series on post-conflict peacebuilding and natural resource management being developed jointly by the United Nations Environment Programme, the Environmental Law Institute, the University of Tokyo, and McGill University. The project incorporates the work of more than 230 researchers, several of whom are represented in this issue.

As the articles in this issue demonstrate, the linkages between conflict and natural resources are deep, complex, and often surprising. Resource dependence is recognized as an indicator of conflict risk.[1] Natural resources often serve as a vital and indispensable subsistence base for those displaced by conflict and for those working to rebuild their lives and communities when conflict has subsided. Managed improperly, however, these same resources may provide both an incentive and a means to keep fighting for those who profit from insecurity.[2] Similarly, natural resources can be both the subject and an incentive for crime—from petty thievery to complex timber mafias to corruption at every level of government, each of which, in turn, can erode personal security and social stability.[3] And while well-managed resources can help fund reconstruction efforts and help bring order from chaos, access to high-value resources can reduce government accountability to people and further feed corruption.[4] Thus, accountable and effective natural resource management is a critical component of peacebuilding in post-conflict countries.

The environment itself can also be a casualty of conflict.[5] Forests may be denuded for conflict timber, oil fields set ablaze as a form of scorched-earth warfare, or landmines and ordnance left behind to render large areas of the countryside unsafe for decades after a conflict ends. Still other impacts may be less direct, but no less significant. People displaced by conflict can be drawn together into informal tent cities or organized encampments numbering in the hundreds of thousands. These settlements can become major urban areas virtually overnight, requiring a steady supply of fresh water, sanitation facilities, fuel wood, building supplies, and food that far exceeds local resources. More subtly, but no less importantly, conflict has lasting and serious impacts on the infrastructure of natural resource governance—both in terms of physical infrastructure and in terms of the human capacity, political will, and the reservoir of civil order and trust that are needed to govern resources effectively.

In internecine conflicts, control of natural resources—and the substantial material wealth they can generate—can serve not only as a driver of conflict, but as fuel for warring parties and, ultimately, as a barrier to negotiating the peace.[6] This is particularly the case when high-value resources such as oil, timber, and precious minerals are involved.[7] Clementine Burnley reflects on this in *Natural Resources Conflict in the Democratic Republic of the Congo: A Question of Governance?* She examines the contrasting theories of natural resource wealth, on the one hand, and environmental scarcity, on the other, as causes of conflict in the Democratic Republic of the Congo ("DRC"). The author then asks why large-scale violence persists in some resource-rich parts of the country while other areas with similar resources and multiple ethnic groups are spared. She finds that often these clashes are linked to socio-economic factors at the local level.

Burnley observes that natural resource management remains a low priority for political actors in the DRC, and that the interest that does exist is too often focused on resource control as a means of consolidating personal power and wealth for elites. She discusses how the continued presence of stakeholders with a material interest in profiting from instability remains one of the most important obstacles to effective natural resource management and good governance in the DRC.

Burnley argues that both the context in which natural resources are used and the way in which those resources are managed are key to preventing and managing conflicts at all levels. Because the nature and scale of these conflicts differ widely, however, approaches to management must differ as well. She outlines ways in which donor institutions have worked to improve resource governance in the DRC—by supporting access to alternate income opportunities for local people, distributing revenues from extractive industries more equitably, and addressing local conflicts over resource access and use before they escalate beyond control. Burnley argues that many of the most successful initiatives emphasized active participation of affected communities. She argues that what is now needed in the DRC is to move beyond abstract commitments to strengthen institutions

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and improve rule of law to more detailed specifications of concrete, context-specific measures to improve natural resource management. Building on the structures and processes already in place, it will take significantly more planning, resources, and political will to bring the needed transparency and accountability to all natural resource management in the DRC.

As Burnley discusses, natural resources can serve as a resource not only for those who would build and secure the peace, but for those who seek to destroy it. On the long road from a fragile ceasefire to a stable peace, there are many who have strong incentives to reverse course, and who actively seek the means to foment that reversal. From gold to diamonds to conflict timber, natural resources have provided that means in prominent examples, including Sierra Leone and Liberia.[8] The problem of how to manage these peace spoilers remains one of the most challenging in post-conflict natural resource management. Philippe Le Billon explores one possible response to this challenge in *Bankrupting Peace Spoilers: What Role for UN Peacekeepers*? Le Billon discusses how reducing belligerents' access to revenues from high-value resources might help limit the success of peace spoilers, particularly when paired with resource management reforms addressing broader social and environmental causes of conflict and human rights abuses associated with those resources. Specifically, Le Billon examines the potential for the United Nations to move beyond economic sanctions alone and empower UN peacekeepers to secure control of natural resource production or transportation as a means of bankrupting prospective peace spoilers. In so doing, he considers not only the opportunities such an approach provides, but the challenges and issues associated with deploying peacekeepers to curtail access to conflict resources.

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Natural resources can also be a source of hope after conflict, where they can be seen as a ready source of revenue for rebuilding a cash-strapped economy. Handled carelessly, however, this can lead to the rapid liquidation of valuable resources while further entrenching elites and risking reversion to conflict.[9] In both cases, natural resources come under profound pressure in the wake of conflict. Päivi Lujala and Siri Aas Rustad, the editors of the first edited book in the ELI/UNEP/University of Tokyo/McGill University series, share some of the central lessons from their work in *High-Value Natural Resources: A Blessing or a Curse for Peace*? Drawing on the thirty different analyses and case studies in their book, Lujala and Rustad highlight how proper management of high-value natural resources is crucial in the aftermath of armed conflict. They document how effective management of such resources can be used to support a wide range of peacebuilding objectives, including grassroots livelihoods, large-scale economic recovery, good governance and inclusive processes, and a more secure and stable peace. At the same time, the authors caution that the risk of negative outcomes from post-conflict resource extraction is high.

Lujala and Rustad point out that there is no one-size-fits-all approach to natural resource management in post-conflict settings. Rather, resource management must be based on a nuanced understanding of the context in which the management takes place. This context includes the numerous and complex linkages—past, current, and potential—between the resources and conflict, international dynamics and trade patterns, institutional capacity, the conditions that have shaped resource management in the past, and the political will that will shape their management into the future. It is only with close attention to these factors, paired with good governance, that the resource curse can be turned into a blessing.

In post-conflict regions, careful management of natural resource issues can play a critical role in ensuring a sustainable peace not only within countries but also between them.[10] In *Liquid Challenges: Contested Water in Central Asia,* Christine Bichsel examines competing claims to water in the Syr Darya river basin, which is shared by the former Soviet States of Kyrgyzstan, Kazakhstan, Uzbekistan, Tajikistan, and Turkmenistan. She looks at water as a potentially contentious issue and assesses international efforts to mitigate the potential for violent escalation and degradation of the environment. She concludes by arguing that conflicts over water in Central Asia may be driven less by inter-state relations than by the particular interests of specific domestic actors in each country.

This use of conflict, real or perceived, as a tool to advance the economic interests of individual actors finds curious expression much closer to home in *Natural Resource "Conflicts" in the U.S. Southwest: A Story of Hype over Substance* by Laura Peterson et al. The authors examine the putative "conflict" between environmental protection and economic development in the context of the U.S. Endangered Species Act ("ESA"). As the title attests, the authors argue that the conflicts involved—between oil exploitation and agriculture on the one hand and two candidate endangered species on the other—owes more to perception, myth, and spin than to ineluctable reality. Peterson argues that this "fear mongering", and the attempts it has engendered to pass species-specific legislation undermining the ESA, represent a thinly veiled and dangerous attempt to push an industry agenda at the expense of the public good. In this, there are faint but recognizable echoes of the high-stakes (and all too real) experience with the peace spoilers discussed by Burnley, Le Billon, and Lujala and Rustad.

Richard Sadowski explores this private influence on conflict dynamics from a much different vantage point in *Cuban*

Off-Shore Drilling: Preparation and Prevention within the Framework of the United States' Embargo. Sadowski considers how Cuba's plans to exploit its offshore oil wealth have increased calls from lawmakers and the oil industry to relax the United States' half-century old embargo on Cuba. Proponents of greater engagement rest their arguments both on the potential environmental risks of offshore drilling and on the prospective economic benefits of partnering in the exploitation. Sadowski argues that, despite this added pressure from the oil lobby, the purpose of the embargo has not yet been met and calls for a continuation of the policy.

Disputes over access to and allocation of critical natural resources can serve as a flashpoint for conflict at all levels of social organization, including at the grassroots level.[11] Rutgerd Boelens et al. explore this phenomenon in the context of water in *Threats to a Sustainable Future: Water Accumulation and Conflict in Latin America*. Arguing that the concentration of rights to access water and participate in decision-making on water governance is a historical problem in Latin America, they examine how contemporary water policies in Ecuador, Mexico, and Peru have tended to aggravate this problem in the face of globalization, growing water demand, and decreasing water availability caused by ecosystem degradation and climate change. The authors argue that the context-based and locally devised water practices of small-holder communities and indigenous territories are being continually overruled by government bureaucracies, market-driven water policies, and top-down measures developed with little respect for the realities on the ground. The result is that water resources fundamental to survival and economic well-being accumulate in the hands of elites, to the detriment of marginalized populations, leading to a deepening of societal conflicts over water and mounting reactions "from below" to water issues.

As the articles in this issue highlight, failures of democratic inclusion are often a hallmark of natural resource-related conflict, in all its forms.[12] Indeed, we have found this one of the most recurring lessons from our own work in the field. Good natural resource governance is, ultimately, just good governance—it is strengthened by commitments to democracy, transparency, and accountability.[13] As a result, consulting and engaging stakeholders has proven time and again to be one of the most critical tools for managing resources while minimizing conflict risk.[14]

Daniel Kemmis and Matthew McKinney provide three case studies in how to do this from the ground up in *Collaboration and the Ecology of Democracy.* Drawing from experience with three stakeholder-driven resource governance efforts in the United States, the authors highlight citizen-driven, multiparty collaboration as an important tool in resource management and as an "emerging species within the 'ecology' of democracy." They argue that such collaborative problem-solving is a fundamental form of democracy in which people are working together to shape the very conditions under which they live.

The articles in this issue demonstrate the critical importance of situational awareness and conflict management when managing natural resources in the post-conflict (or peri-conflict) context. Natural resource management is intimately interwoven with conflict management; human security; livelihoods and recovery at both the macroeconomic and microeconomic scales; efforts at demobilizing, disarming, and reintegrating former combatants; transitional justice; and ongoing governance. Accordingly, those who would preserve an existing peace or build a new one must take care to identify, understand, and respond to the natural resource dimensions relevant to their objectives. Correspondingly, those concerned with managing and protecting natural resources in conflict-affected regions must expressly recognize the potential conflict dimensions of their work, however remote from conflict it may at first appear. Achieving this requires not only recognizing how the existing context has been shaped by conflict but how actions taken in seemingly unrelated fields can contribute either to ameliorating and recovering from conflict or to conflict reversion.

Endnotes: Introductory Comments: The Pervasive, Persistent, and Profound Links between Conflict and the Environment

1 *See* Indra de Soysa, *The Resource Curse: Are Civil Wars Driven by Rapacity or Paucity?,* in Greed and Grievance: Economic Agendas in Civil Wars (Mats Berdal & David M. Malone eds., 2000); Michael Ross, The Natural Resource Curse: How Wealth Can Make You Poor, Natural Resources and Violent Conflict: Options and Actions 17-18 (Ian Bannon & Paul Collier eds., 2003).

2 *See id*.

3 *See, e.g.*, Duncan Brack & Gavin Hayman, *Illegal Logging and the Illegal Trade in Forest and Timber Products, at* http://www.abc.net.au/4corners/content/2002/timber_mafia/viewpoints/viewpoints_ brack.htm (last visited December 18, 2011).

4 *See* Philippe Le Billon, Fuelling War: Natural Resources and Armed Conflict 36 (2005); De Soysa, *supra* note 1 at 121.

5 *Id.*

6 *See* Paul Collier, *The Market for Civil War*, Foreign Pol'y, May-Jun. 2003, at 38, 41-42.

7 *See* de Soysa, *supra* note 1, at 124.

8 *See, e.g.*, Luke A. Whittemore, *Intervention and Post-Conflict Natural Resource Governance: Lessons from Liberia*, 17 Minn. J. Int'l L. 387, 407 (2008).

9 *See* Le Billon, *supra* note 3 at 15.

10 *See id*.

11 *See generally*, de Soysa, *supra* note 1; Ross, *supra* note 1.

12 *See, e.g.*, Paul Collier & Anke Hoeffler, *Greed and Grievance in Civil War*, 56 Oxford Econ. Papers 563, 576 (2004); Ross, *supra* note 1 at 26.

13 *See* Philippe Le Billon, *Securing Transparency: Armed Conflicts and the Management of Natural Resource Revenues*, 62 Int'l J 93, 95 (2006-2007).

14 *Id* at 106.

Natural Resources Conflict in the Democratic Republic of the Congo: A Question of Governance?

*by Clementine Burnley**

Introduction

The Democratic Republic of the Congo ("DRC") is a fragile post-conflict state that is immensely rich in natural resources. Effective management of its mining, oil, and forestry resources is key to its future economic progress.[1] However, the DRC is widely regarded as a textbook forum for natural resource-induced conflicts at both local and national levels.[2] If natural resources are the main cause of conflicts, then improving governance over those resources could reduce the likelihood of conflict. Academic studies on conflict causes could be usefully linked to research on governance to improve the management of natural resources in conflict-prone societies. For instance, studies have revealed that countries with high quality institutions dedicated to the management of valuable natural resources minimize potential problems faced by resource-rich and conflict-prone countries.[3]

However, natural resource management can be complex and difficult due to incongruent political, social, economic, and environmental goals even in peaceful societies.[4] Conflict-prone societies such as the DRC present even more complex challenges given the underlying political and historical reasons for the conflicts.[5] Despite these significant difficulties, best governance practices such as incorporating stakeholder input and financing strategies could both prevent and resolve conflicts. This article summarizes findings about a number of important external and internal factors fueling conflict, institutional and governance challenges in managing resources, and highlights a number of ways in which donor institutions have worked with policymakers to improve resource governance in the DRC. In adopting these techniques for equitable and efficient natural resource management, the DRC could achieve long-term peace and economic stability.

Armed Conflict and the Role of Natural Resources

There is a large body of quantitative research on the external factors relevant for understanding civil conflicts at the local, national, and international level.[6] Examples of these external factors include resources type and the characteristics of the state.[7] These studies have focused on the access to and use of natural resources by conflict parties, especially the role of conflict financing through the exploitation of natural resources.[8] Valuable natural resources like diamonds, gold, oil, timber, and even drug crops and medicinal plants, have been found to be prone to misappropriation.[9] The control of these resources may allow rebels to generate conflict financing.[10]

Along similar lines, several quantitative political science studies demonstrated that the abundance of natural resources increases the statistical risk of armed conflict at the national level.[11] However, numerous other studies have criticized the robustness of such conclusions.[12] This criticism reflects flaws such as the methodology of the quantitative studies, which fail to distinguish civil war onset and ongoing civil war as equal components of civil war prevalence.[13] Despite this flaw, these studies can nonetheless be useful in understanding how conflict makes the management of natural resources more difficult and vice versa.[14]

Another set of academic studies focuses on environmental scarcity and competition between groups for these natural resources.[15] Increasing demand from growing populations and inequalities in the distribution of natural resources can ultimately lead to environmental degradation.[16] These studies have also been criticized for methodological weaknesses, paucity of data, and according too much weight to environmental factors and too little emphasis on human factors such as technological innovativeness and ingenuity.[17] Nevertheless, the concept of competition between groups over distribution of resources is pertinent to an understanding of the current, and sometimes violent, community-level conflicts over land and forest usage in the eastern provinces of the DRC.[18]

Past and Current Natural Resources Conflicts in the DRC

The DRC includes most of the Congo Basin region, an area of enormous wealth in terms of biodiversity, timber, and mineral resources.[19] Despite this natural wealth, however, the DRC is one of the poorest countries in the world with significant infrastructure deficiencies and an economy that is highly dependent upon agriculture and forestry.[20] Violent and non-violent conflicts linked to the use of its natural resources have historically prevented the DRC from fully utilizing its resources to generate revenue and improve quality of life for its citizens.[21] Specifically, numerous policy reports have highlighted the role of minerals in financing the armed groups involved in the

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most recent DRC conflicts.[22] Control over mining areas in the eastern provinces continues to shift between different independent armed groups and units of the Military of the Democratic Republic of the Congo ("FARDC").[23] The struggle for control over these resources has exacerbated conflict and created greater difficulty in managing the resources to benefit the public.[24]

Despite a recent transition towards peace, conflict and insecurity remain in the eastern provinces of North and South Kivu, Orientale, Maniema, and Katanga.[25] These conflicts are particularly acute in the northeastern provinces of Ituri in Orientale, and North and South Kivu, where local militia and foreign rebel forces continue to terrorize the regions.[26] A prime example of conflict is the Virunga National Park ("Park") located in northeastern DRC, on the border with Uganda and Rwanda.[27] The Park was the site of some of the large-scale armed conflicts that occurred in the Kivu Provinces.[28] The 1994 Rwandan genocide and resulting refugee crisis led to the presence of about 700,000 refugees on the edges of the Park.[29] These displaced groups increased the consumption of resources both inside and outside the Park, furthering the impact on the environment and leading to mass deforestation.[30]

Identity and nationality, which are linked to land and political power, have also played an important part in the different conflicts of the DRC. In the absence of alternative income-earning opportunities in the formal economy or in commerce, access to land is essential to livelihoods in DRC.[31] There have been several historic conflicts over grazing land and land ownership between Hema and Lendu peoples in Ituri.[32] These conflicts have killed 10,000 and displaced 50,000.[33] Moreover, these types of conflicts are likely to continue until those natural resources with income-generating potential, such as timber, are better managed.[34]

Natural Resource Management and Governance Challenges

The twin challenges of governance for the DRC are to provide security for all of its citizens and to build democratic, transparent, and accountable institutions capable of managing its enormous resource wealth for the benefit of its entire population.[35] Although the existing legal framework recognizes the right to use land via customary law, it also allows for land grabbing, the purchase of occupied land, and the eviction of tenants.[36] And since the government retains the right to define "Congolese people," the issue of who is entitled to land rights is highly politicized.[37] Further tensions stem from the unclear role of formal and customary authorities.[38] Thus legal reform is necessary to prevent future land-grabbing opportunities that could cause armed conflict.[39] Legitimizing certain existing formal and customary systems of land administration, and providing a forum for land use disputes, could help diffuse both future conflicts and lay a framework for sustainable land management.[48]

The demarcation of conservation areas in the DRC is also a contentious political issue. The existence of conservation areas has been linked to colonial land demarcations, which are not always understood or accepted by the communities affected.[40] In response, managers of these protected areas have engaged in participatory management methods involving local communities, such as consultations, participatory demarcation, and the creation of alternative livelihood activities.[41]

However, conflict exists not only over the natural resources but also over collaboration: site-specific, cross-border collaboration efforts between conservation organizations in Rwanda, DRC, and Uganda have continued during various wars at the regional level.[42] Furthermore, the DRC continues to face significant challenges in its reform processes in all natural resources sectors.[43] The widespread disintegration of government functionality during the prolonged conflicts has left a legacy of bureaucratic inefficiencies in knowledge, expertise, capacity, and resourcing across all sectors.[44] These shortcomings mean that institutions often are unable to respond to the serious problems they face.[45] For instance, in the area of education, only thirty-two percent of teachers in secondary school and twenty percent of those in higher education are qualified at the level mandated by their posts.[46] Congo's National Statistical Institute ("INS") lacks resources to collect the necessary information by which ministries' performance can be verified.[47] Even in areas where periodic reporting is mandatory, such as the mining industry, it is still difficult to find reliable data on mining operators, production, or exported commodities.[48]

Transparency in governance remains another main challenge to effective natural resources in the DRC. The country now ranks 164th out of 178 in the 2011 Transparency International Corruption Perception Index, while the World Bank/IFC Doing Business 2011 survey ranks DRC 175th out of 183 countries.[49] A number of authors have highlighted the negative effects of corruption on the management of natural resources in DRC.[50] For instance, policy processes are prone to disruption by politicians acting in their own, rent-seeking interests.[51] Furthermore, government agents at mine sites illegally tax the operations in eastern DRC, justifying their practice by blaming the lack of monetary support from the central government.[52]

The Need for Capacity Building in the DRC

The concept of "capacity" refers to the ability of individuals and institutions to conceive and carry out decisions effectively and efficiently.[53] There is a clear need for institutional capacity building in the DRC to ensure compliance with the international norms and agreements relevant to environmental management.[54]

At the individual level, capacity building refers to the processes of teaching and skills training.[55] At the local and national institutional level, improvements to the functioning of institutions and capacity of administrators could help civil services better use revenue and natural resources to reduce poverty.[56] Increasingly, administrators are using capacity building to encourage ownership through participation and mutual exchange of knowledge.[57] Building individual capacity in terms of natural resource management would involve increasing the level of expertise in its legal, scientific, or technical aspects.[58] For example, increasing expertise in the implementation and monitoring of regulatory compliance or increasing awareness of

the conflict risk in managing natural resources would increase the government and different communities' ability to address these conflicts.[59] Moreover, increasing scientific expertise in the geological field would allow DRC's institutions to improve their negotiating power with extractive industry counterparts.[60] Similarly, capacity building for local businesses could help to promote the development of homegrown industries in the minerals sector.[61]

On the international level, governance initiatives relevant to the environment in the DRC are conditioned by the various international treaties and environmental agreements to which the country is a signatory.[62] These initiatives and treaties specify actions to protect the DRC's biodiversity, endangered species, timber, and wetlands as well as to mitigate climate change.[63] USAID and the European Development Fund both have agreements with the DRC to fund such programs, which encompass regional conservation and production areas.[64] Given this outside support for local and national institutions, it is vital to create an implementation framework that creates coherent sector-wide programs.[65]

Specifically, the DRC is currently developing a governance framework for the forestry sector.[66] The population is highly dependent on the forestry sector and, although precise data is uncertain, the expansive forests of the DRC provide a wide array of benefits, including timber for domestic use and export, fuel wood, a variety of forest foods and medicines, and a carbon sink for sequestration programs.[67] It is estimated that the DRC's timber resources are equal to that of all other African countries combined and the timber industry is expected to benefit from increasing demand in China and India.[68] Therefore, this sector is a high priority for reform.[69] The ongoing forestry reforms are part of the preparation of a national strategy for Reducing Emissions from Deforestation and Forest Degradation ("REDD"), by the Ministry of Environment, Nature Conservation and Tourism (known by the French acronym "MECNT").[70] The DRC's 2002 Forest Code is an important first step in both regulating an important resource and creating an implementation framework for fund programs such as REDD. [71]

Best Practices of Post-Conflict Natural Resources Management

Land use conflicts between different resource users and managers have often arisen in eastern DRC. And although individual organizations managing land within or adjacent to protected areas have each addressed the conflicts differently, a number of good practices have been proven to reduce usage conflicts.[72] Such practices include devolving rights to local communities, diversifying economic activities around protected areas, improving land use planning and zoning, securing tenure to land and resources, ensuring stakeholder participation in resource management, integrating policies relating to natural resources, and legitimizing community-based management initiatives.[73] Given the success of these tactics, many national programs in the DRC are beginning to embrace these concepts.

Accordingly, donors and the government of the DRC are working together to build institutional and individual capacities for participatory management of natural resources in various sectors.[74]

Forestry

In the forestry sector, the International Development Association and the Global Environment Facility are supporting the Forest and Nature Conservation Project to provide infrastructure, equipment, training, and project coordination at the national level for the MECNT, regional, and provincial management bodies.[75] Implementing best practices will strengthen MECNT's institutional capacity to as well as community participation in sustainable forest management.[76] Striving for similar goals, WWF and United Nations Human Settlements Programme ("UN-HABITAT") are collaborating to manage conflicts linked to land tenure bordering protected areas in eastern DRC, combining participatory demarcation with conflict mediation and land administration.[77]

To facilitate best practices, it is important to recognize that the external economic environment, such as levels of direct foreign investment and variability in price of commodities, is largely outside the control of the Congolese.[78] However, Congolese policymakers and administrators can nonetheless control how revenues and investments are managed.[79] Improvements to the institutional governance systems for resource revenues have focused on increasing efficiency in three dimensions: management, allocation of revenue, and distribution of benefits.[80]

International efforts have focused on supporting transparency in revenue management and restricting the financing of armed groups.[81] The Extractive Industries Transparency Initiative ("EITI") tries to increase transparency surrounding resources exploitation, revenue generation, and budget allocations.[82] The DRC has been classified by the EITI as "close to compliant."[83] Transparency initiative objectives support the disclosure of information for the extractive industry and civil stakeholders' demands for accountability from policymakers and institutions.[84] However, it will take time for capacity building to redress the current imbalance between levels of influence by state and civil society actors.[85] At the moment, capacity and knowledge gaps on the part of civil society mean that it is difficult for civil stakeholders to hold institutions and political actors accountable for their actions.[86]

Mining

Trade restrictions have also been introduced to reduce availability of resource-based financing to conflict actors.[87] For example, the Kimberley Process for Conflict Diamonds is an intergovernmental process established to regulate and reduce trading in diamonds from rebel-controlled areas.[88] This and other similar initiatives require companies to report whether their supply chain contains minerals sourced from conflict zones that may have contributed to the financing of armed groups.[89] This, in turn, requires due diligence and traceability mechanisms to distinguish between "clean" and "dirty" minerals.[90]

In the DRC, a number of traceability initiatives already exist at the national, regional, and international levels. At the national level, the DRC's Mining Law of 2002 requires community consultations, disclosure of contract terms by both companies and the government, and revenue transparency through adherence to EITI guidelines.[91] The publication of the 2010 Mining Contracts Review, carried out to determine benefits of these contracts to the DRC, is still in progress.[92]

At the regional level, several regional groups have adopted traceability and accountability mechanisms. The Organization for Economic Cooperation and Development ("OECD"), for example, has drawn up auditing guidelines for mineral processors.[93] The International Conference of the Great Lakes has also committed to a regional certification mechanism, which provides a clear procedure and adequate records of mineral origins.[94] The International Tin Research Initiative has also improved due diligence, traceability, and certification processes for tin through the Tin Supply Chain Initiative.[95] However, these traceability initiatives in DRC ultimately face difficulties linked to cost, implementation, monitoring, human capacity, and resource gaps.[96]

National initiatives supplement industry-led and regional traceability schemes. In the United States, the recent 2010 Conflict Minerals Provision of the Dodd–Frank Wall Street Reform and Consumer Protection Act requires companies to represent accurate information regarding the source and supply chain of certain minerals.[97] The German Federal Institute for Geosciences and Natural Resources has supported the establishment of Certified Trading Chains.[98] These initiatives would assist in reducing resource-based financing to conflict actors through international trade channels.[99]

There are some examples of good non-renewable resource management in from countries of the global north. Norway, for example, has successfully used macroeconomic tools to guide oil revenues, domestic oil retention, and revenue utilization, avoiding the potentially harmful effects of equitable redistribution.[100] In this way, Norway has managed to avoid the typical problems of an oil economy, such as the boom-bust cycle and wealth concentration.[101] Despite the fact that the two countries differ in their government accountability systems and transparency, Norway's solutions may provide guidance to the DRC.[102] Combining Norway's approach with transparency and accountability initiatives could provide a better system for managing non-renewable resources.[103]

The challenge for the DRC is to improve the workings of institutional and political processes at both the national and the local level to ensure that natural resources are used in a sustainable manner to improve the lives of communities. International examples of successful resource management are often supported by international organizations and private nongovernmental organizations ("NGOs"). The World Heritage Institute (UNESCO), Congolese Institute for the Conservation of Nature ("ICCN"), and local NGOs are currently collaborating on "Biodiversity Conservation in Regions of Armed Conflict: Protecting World Heritage in the Democratic Republic of the Congo."[104] That project, which has been running since 2000 with multi-donor funding, supports not only the key financial, logistical, and technical sectors, but also provides access to the higher political decision-makers at the national regional and international levels.[105]

Another example, the World Wildlife Fund's ("WWF") Eco-Makala Project, has responded to the deforestation by refugees in the southern part of the Virunga National Park in North Kivu Province by introducing legal fuel wood plantations.[106] The WWF project increases the availability of sustainable energy for the area around Goma and to reduce rural poverty in Masisi and Rutshuru.[107] The United States Agency for International Development ("USAID") Central Africa Regional Program on the Environment is helping to support the WWF, demarking protected areas using a combination of participatory methods, mapping, and GIS tools.[108] The project works with local communities and chiefs, restricting access to certain areas in order to sensitize communities to the benefits of maintaining biodiversity in their surrounding areas.[109] Conservation International is supporting the ICCN to jointly manage resource reserves with local communities in the Equateur Province to provide livelihood alternatives and also to track deforestation.[110]

With normalization of relations between the DRC and Rwanda, and integration of some armed groups into the state army and police forces, the most important conflict management processes affecting the Kivu Provinces have taken place at the national and international level.[111] Security sector reform is also ongoing, but still leaves much to be desired.[112] The most immediate challenge for policymakers is to end illegal control over, and taxation of, mining, both by the Congolese army and by armed groups.[113] This would require bringing areas currently under the control of armed groups under state control through military action or negotiation.[114]

Additionally, the government needs to stop those at the highest military and political levels from seizing the profits from minerals. A number of specific recommendations have been made by expert organizations working in the field of safeguards, advocating the monitoring and inspection systems for mining areas where the Congolese military are deployed and reinforcement of military sanctions to end impunity and increase accountability in army units.[115]

Conclusion

The theories of environmental scarcity and of natural resources wealth as conflict causes in the DRC are well documented. What remains unclear, however, is why large-scale armed violence persists in some eastern provinces of the country, while other, equally resource rich provinces, such as Katanga and the hinterlands of the Kivu Provinces, escape such violence.[116] This suggests that additional tensions, such as those between industrial and artisanal miners and those linked to local socioeconomic factors are of the upmost relevance.[117]

This article has described the consequences of prolonged instability for natural resource management in the DRC. Further, natural resources management remains a low priority for

political actors, many of whom favor the consolidation of power and wealth.[118] The presence of those stakeholders who instigate and profit from instability constitutes the major obstacle to effective natural resources management and to improvements in overall governance in the DRC.[119]

The political, economic, and social contexts in which natural resources are used and the manner in which resources are managed is paramount to prevent and manage conflicts at all levels. The nature and scale of the conflicts described in this paper are each different and, therefore, the management approaches correspondingly different.

This article has also outlined a number of ways in which donor institutions have worked with policymakers to improve resource governance in the DRC. The initiatives described support alternative income opportunities for local communities, redistribution of revenues from some extractive industries, and prevention of local resources usage conflicts. Many of the natural resources management activities have had active participation of communities as a key component.

Governance objectives are often broadly formulated to strengthen institutions, build institutional and human capacity, and improve rule of law. These broad aims, while useful as guiding principles, remain extremely abstract. Successful governance, however, requires specific measures and binding timeframes for implementation in order to reform key areas such as the accurate monitoring and legal enforcement of natural resources management strategies. While the institutional structures and processes may already be in place, it will still take a long planning process, significant additional resources, and political will to achieve the needed transparency and accountability for the management of all natural resources sectors in the DRC.

Endnotes: Natural Resources Conflict in the Democratic Republic of the Congo: A question of Governance?

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3 Ivar Kolstad et al., Corruption in Natural Resource Management – An Introduction 2 (2008), http://www.u4.no/document/publication.cfm?2936=corruption-in-natural-resource-management-an.

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7 *Id. See also* David Collier et al., *A Sea Change in Political Methodology*, 9 Newsl. of the Am. Pol. Sci. Ass'n (2010).

8 *See* Indra de Soysa, *Paradise is a Bazaar? Greed, Creed, and Governance in Civil War*, 39 J. of Peace Research 395, 404-05, 413 (2002). *See also* Collier & Hoeffler, *supra* note 7, at 1.

9 *See generally* United nations, *supra* note 2.

10 *See* United Nations, *supra* note 2, at 20.

11 *See* Collier & Hoeffler, *supra* note 7; *see also* Le Billon, *supra* note 5.

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13 Sambanis & Elbadawi, *supra* note 13, at 307.

14 *See* Le Billon, *supra* note 5, at 563-66.

15 *See* Michael Renner, Fighting for Survival: Environmental Decline, Social Conflict, and the New Age of Insecurity (1996); *see* also Thomas F. Homer-Dixon, Environment, Scarcity and Violence (1999).

16 *See* Renner, *supra* note 16, at 36, 59.

17 *See* Nils P. Gleditsch et al., *Armed conflict 1946-2001: A New Dataset*, 39 J. of Peace Research, 615-37 (2002).

18 *See generally* Collier & Hoeffler *supra* note 7. *See also* International Peace Information Service (IPIS), *The Complexity of Resource Governance in a Context of State Fragility: The Case of Eastern DRC* 8, 54 (Nov. 2010), http://www.ipisresearch.be/publications_reports.php?&lang=en.

19 U.S. Department of State, Bureau of African Affairs, *Background Note: Democratic Republic of the Congo* (Sept. 30, 2011), http://www.state.gov/r/pa/ei/bgn/2823.htm.

20 *See* Peter Bofin et al. (eds.), *REDD Integrity: Addressing governance and corruption challenges in schemes for Reducing Emissions from Deforestation and Forest Degradation* 25 (2011), http://www.cmi.no/publications/file/3967-redd-integrity-addressing-governance-and.pdf.

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22 *See* IPIS, *supra* note 19. *See also* United Nations, *Final Report of the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth of the Democratic Republic of the Congo, supra* note 2.

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32 *See* René Lemarchand, *The Democratic Republic of Congo: From Collapse to Potential Reconstruction* 35, 36 (Oct. 27, 2011), http://www.teol.ku.dk/cas/research/publications/occ._papers/lemarchand2001.pdf.

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34 *See* Forests Monitor, The Timber Trade and Poverty Alleviation in the Upper Great Lakes Region 8-9 (2007), http://www.forestsmonitor.org/en/reports/556666.

35 *See* USAID, Country Profile: Democratic Republic of Congo, http://usaidlandtenure.net/usaidltprproducts/country-profiles/democratic-republic-of-congo (last visited Nov. 18, 2011).

36 *Id*.

37 *Id. See also* IPIS, *supra* note 19, at 71.

38 USAID, *supra* note 35.

39 *Id*.

40 *See* Kalpers, *supra* note 28.

41 *Id*.

42 *See* Connectivity Conservation Management: A Global Guide 73, 76 (Graeme L. Worboys et al. eds., 2010).

43 *See* USAID, *supra* note 35.

44 *Id*.

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Water Crisis in the Murray-Darling Basin: Australia Attempts to Balance Agricultural Need with Environmental Reality

*by Joshua Axelrod**

Overuse, pollution, increased salinity, and drought are threatening the water resources of Australia's Murray-Darling River Basin ("MDB"), a drainage of twenty-three rivers that is home to more than two million people[1] and generates nearly forty percent of Australia's agricultural revenue.[2] To address these threats, the Murray-Darling Basin Authority ("MDBA") submitted the Guide to the Basin Plan ("Guide") for public comment in October 2010, sparking controversy between the government and MDB's agricultural communities.[3] The Guide's comprehensive sustainable water management strategies seek to balance human and environmental water needs.[4] In an attempt to minimize the socio-economic impact of policy changes, the Australian government is buying water allocations from farmers and investing in irrigation infrastructure improvements.[5] Despite public opposition to these actions, aggressive sustainable water management strategies must nonetheless be implemented, and tied to environmental outcomes, if the MDB is to remain a key agricultural producer in the future.[6]

Efforts to implement sustainable water use policies are recent innovations in Australia.[7] The Australian states and territorial governments took significant steps to reform the management of overused rivers in 2004 with the ratification of the National Water Initiative.[8] Since the Initiative, the Australian government has moved quickly to preserve scarce water resources. The 2007 passage of the Water Act gave Australia's national government the legal authorization to create a centralized, independent agency[9] to draft, implement, and enforce water use policy for the MDB.[10] Soon after, the newly created MDBA began its work on the Guide.[11] The Guide provides the scientific,[12] economic,[13] and sociologic[14] rationale for a proposed Basin Plan that will be released in late 2011.[15]

The Guide sets forth comprehensive and aggressive water use policies with the goal of stabilizing and improving the health of the MDB's critical natural resources.[16] To accomplish this goal, the Guide proposes four key management policies: sustainable diversion limits ("SDLs"), environmental quality benchmarks, state-level SDL compliance, and an efficient water market.[17] SDLs will limit the volume of water that may be taken from a given river or aquifer;[18] environmental benchmarks will measure river salinity, overall water quality,[19] and wetland health;[20] monitoring state-level SDL compliance will localize enforcement of water resource allocation;[21] and an efficient water market will allow farmers to buy and sell allocated water resources to ensure a reliable revenue stream or increased water needs.[22]

Critics of the Guide argue that there was a lack of public input during the planning process and that the proposed plan will have a disproportionate impact on the communities most dependent on the MDB's water resources.[23] Food processers,[24] farmers,[25] and irrigation organizations[26] contest the MDBA's reliance on economic models that show that the proposed water management changes will have minimal impacts on the overall MDB economy.[27] They argue that economic assessments should have focused on short-term impacts to local and regional communities instead of nation-wide impacts.[28] Individual citizens, meanwhile, suggest that the Guide's proposals will lead to the continued economic and cultural decay of MDB cities and towns as residents relocate and abandon the MDB in search of economic stability.[29]

However, the fundamental issue remains: Action is required if Australia's scarce water resources are to be preserved. The MDB recently suffered the longest drought in recorded history and faces a predicted eleven percent decline in surface water availability by 2030.[30] At the same time, water use in the MDB has increased from 2,000 gigaliters annually in the early 1900s to more than 10,000 gigaliters in 2010.[31] The escalation of human water use coupled with historic drought illustrates the need for Basin-wide adaptation to diminished water resources if these resources are to remain viable in the future.[32]

Decision-makers must implement policies that require adaptation to declining water availability without compromising the overall economic vitality of the region.[33] Though irrigated agriculture in the MDB is vital to Australia's agricultural sector,[34] it represents only seven percent of the MDB's economy.[35] Thus, while reports to the MDBA suggest that there will likely be significant socio-economic impact on irrigation-dependent farmers[36] and communities,[37] actions can be taken to transition these communities to a more stable economic foundation.[38] Economic diversification of local communities[39] through flexible labor and capital markets seems to be the most viable option.[40]

Delaying reform because of community disappointment and apprehension presents a risk that the Australian government and local communities cannot afford to take.[41] Still, it is important for the MDBA to consider community input in order to ensure

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Bankrupting Peace Spoilers:

What Role for UN Peacekeepers?

*by Philippe Le Billon**

Introduction

Curtailing belligerents' access to weapons has been a major focus of international security actors.[1] Although weapons embargoes and disarmament initiatives remain important, they are difficult to implement and generally insufficient to secure long-term peace.[2] Curtailing belligerents' access to revenues from high-value natural resources—such as timber, minerals, and opium—provides a complementary approach to attain security, particularly when combined with resource management reforms.[3]

This paper focuses on the methods that United Nations ("UN") peacekeepers employ and their capacity to help curtail belligerents' access to resource revenues.[4] The first part of this paper reviews the principal instruments used by the UNSC to address "conflict resources."[5] The second part examines the specific use of peacekeeping forces to secure resource production areas and prevent the trafficking of conflict resources. Issues associated with the deployment of peacekeepers in efforts to curtail access to conflict resources are also discussed.

UN Initiatives

UN initiatives to address the links between high-value natural resources and armed conflicts have included commodity sanctions, expert panels, and specific measures undertaken[6] as part of the peacemaking, peacekeeping, or peacebuilding tasks.[7] Among these methods, the main approach taken by the United Nations Security Council ("UNSC" or "Security Council") to curtail belligerents' access to resource revenues has been economic sanctions.[8] Commodity sanctions target rebel groups by curtailing their access to resources in order to "bankrupt" peace spoilers.[9] Examples include the Khmer Rouge's access to logs in Cambodia;[10] the National Union for the Total Independence of Angola's ("*União Nacional para a Independência Total de Angola*" or "UNITA") access to diamonds;[11] the Revolutionary United Front ("RUF") access to diamonds in Sierra Leone;[12] the Taliban's access to opium production in Afghanistan;[13] and the New Forces' ("*Forces Nouvelles"*) access to diamonds in Côte d'Ivoire.[14] Resource-focused sanctions have also targeted the governments of Iraq[15] and Liberia,[16] for their training and funding of insurgent groups in civil wars, and Libya,[17] for its involvement in the Lockerbie bombing.[18]

With the exceptions of Cambodia, Iraq, and Libya, all these sanction regimes were associated with investigations by UN expert panels—consultants hired by the UN Secretariat to investigate war economies and "sanction-busting," or "trading with a country with which trade has been forbidden."[19] Because the panels' reports are made public, they have been instrumental in successful "naming and shaming" campaigns.[20] Even though less than a handful of sanction busters were successfully prosecuted by 2006, the public reports nonetheless had the desired chilling effect.[21]

Although the UNSC holds the greatest potential and has so far carried the most weight in efforts to address linkages between high-value resources and armed conflicts, UN transitional authorities and specialized UN agencies have also engaged in activities related to managing conflict resources, by deploying border monitors and troops, deploying UN troops as backup for resource management officials, and providing supervision and technical assistance for economic reforms and resource management.[22] Furthermore, these UN entities have partnered with national authorities and international aid agencies to reform resource sectors and build local institutional capacity to peacefully manage resources in post-conflict settings.[23] For example, the UN Transitional Authority in Timor-Leste renegotiated the maritime boundary between Timor-Leste and Australia, the results of which had implications for petroleum exploitation.[24] Additionally, the UN Mission in Liberia supported the Governance and Economic Management Assistance Program ("GEMAP").[25] An initiative led by the World Bank, GEMAP is a quasi-trusteeship agreement that allows direct international supervision of most of the financial operations of the Liberian government—including monitoring the administration of natural resources such as timber and mine products.[26] Other UN missions have had an indirect impact on resource sectors; for example, effective disarmament, demobilization, and reintegration programs often lead to employment for former soldiers who might otherwise turn to illegal resource exploitation.[27]

The UNSC decides whether to impose economic sanctions and dispatch UN expert panels, as well as the size and mandate of UN missions in conflict-affected countries.[28] Since the end of the cold war, the UNSC has theoretically had greater freedom to impose sanctions and similar measures because fewer members of the Security Council were inclined to veto such steps in order to support their allies.[29] However, he UNSC

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has been somewhat slow in adopting this potential in practice. Meanwhile, the importance of resources to armed groups has grown rapidly since the late 1980s, as belligerents turned to natural resources to replace external political sponsorship.[30] For most of the 1990s, the UNSC made increasing use of arms sanctions, negotiated settlements, and regional or UN peacekeeping missions, but rarely placed commodity sanctions.[31] Although arms sanctions may be more effective than commodity sanctions, and may therefore continue to be the principal sanction strategy, the two approaches can be combined to resolve conflicts.[32]

Although the UNSC began implementing commodity sanctions in the late 1980s, it has only done so in approximately one-third of the conflicts involving resources between 1989 and 2006.[33] Furthermore, most of these sanctions have been imposed after the late 1990s, nearly a decade after resources came to play a major role in belligerents' finances.[34] When the use of commodity sanctions finally increased, it was given a further boost by a more proactive use of sanction committees and expert panels.[35] Because of broader engagement on the part of nongovernmental organizations ("NGOs"), conflict analysts, and resource industries, sanctions are now better targeted, monitored, and enforced, and their humanitarian impact is more carefully considered.[36] The UNSC has even recently bolstered the authority and capacity of UN peacekeeping missions to more directly intervene in the control of resource sectors, most notably in the case of the Democratic Republic of the Congo ("DRC").[37]

UN Peacekeeping Missions and Conflict Resources

UN peacekeeping operations have been established in at least eight countries where conflict resources contributed to prolonging hostilities. This section briefly reviews the mandates, specific measures, and effectiveness in each case building on the three main cases: Sierra Leone, Liberia and the DRC.

Sierra Leone

Despite UN hesitation, the UN Assistance Mission in Sierra Leone ("UNAMSIL") used peacekeeping forces to regulate the diamond sector during the last stages of its 1999-2005 operation.[38] Before that point, peacekeeping forces had intervened in an ad hoc fashion to prevent the escalation of resource-related conflicts.[39] This ad hoc intervention was based on UNAMSIL's fear of overstepping its mandate,[40] antagonizing local interest groups, exposing UN troops to criminal violence, and reinforcing rumors that peacekeeping forces were involved in diamond deals.[41] Although some of these concerns were legitimate, reports from military observers about diamond-related armed conflicts, as well as requests for assistance from the government and from the donors who were funding diamond reforms, eventually led UNAMSIL to take on a more proactive role.[42] In 2003, two years after hostilities had ceased, UNAMSIL began conducting aerial surveys, deploying foot patrols, and engaging in targeted conflict-settlement interventions in the diamond sector.[43] Most notably, UNAMSIL also worked to prevent clashes between local youths with former RUF soldiers.[44] These efforts were often undertaken jointly with the Sierra Leone Ministry of Mines, where UNAMSIL occasionally served in a supervisory capacity for the ministry.[45]

Liberia

The ongoing UN Mission in Liberia ("UNMIL"), established in 2003, has illustrated potential complications of using peacekeeping methods to address conflict resources. UNMIL's mandate is "to assist the transitional government in restoring proper administration of natural resources" as part of the implementation of the peace process.[46] Conflict resources—mostly timber, but also rubber and diamonds—had played a major role in the Liberian conflicts between 1989 and 2003.[47]

Because of the rapid cessation of hostilities and improving security after 2003, UNMIL did not confront extensive problems with conflict commodities.[48] This was a positive factor considering that UNMIL's full deployment took nine months, largely because UN member countries failed to provide the pledged troops.[49] Nevertheless, UNMIL was subject to criticism for failing to do more to address the problem of conflict resources.[50] Among its critics was Global Witness, the leading NGO in the realm of resources and armed conflicts.[51] In 2005, Global Witness wrote a letter to the UNSC, stating that UNMIL had failed to implement its mandate because

> they have not been given the legal authority to act as independently and proactively as they need to effectively seek out and stop illegal timber or diamond operations. . . . UNMIL's ability to fulfill its mandate is further undermined by its lack of deployment in diamond and timber-rich areas, particularly along Liberia's porous border regions with Côte d'Ivoire, Guinea and Sierra Leone.[52]

While UNMIL did not undertake sufficient efforts to secure conflict commodities, it did create an environment and natural resources unit that worked with local and international organizations on protecting Liberia's natural resources[53] Arguably, other UN agencies—such as the UN Environment Programme, the Food and Agriculture Organization, and the UN Development Programme—have a more general mandate to engage in environmental protection and resource management, but the creation of the environment and natural resources unit was in line with UNMIL's quasi-trusteeship functions during the transition period from 2003 to 2005.[54]

UNMIL did carry out some aerial reconnaissance to monitor mining, along with occasional, but rare, ground patrols.[55] On some occasions, UNMIL also deployed troops in resource-rich areas—for example, to remove artisanal diamond miners operating illegally within an oil palm plantation;[56] to close a large artisanal diamond mining site that had been identified by an expert panel but had not been shut down by the transitional government—allegedly, diamonds were being stockpiled at the site while the owners waited for sanctions to be lifted;[57] and to protect the interests of a U.S. diamond company and "restore calm and order" after demonstrations at a Firestone rubber concession in 2007.[58] Some troop deployments have sparked controversy.

In particular, Liberian mining interests and company employees have accused UNMIL of protecting the interests of foreign companies over those of local populations.[59] Such accusations demonstrate that UN peacekeeping activities in resource sectors can generate new conflicts, and should therefore be considered from a political perspective instead of being narrowly conceived as a law-and-order measure.

Democratic Republic of the Congo ("DRC")

The UNSC has implemented an array of peacekeeping tools to address conflict resources during the UN mission in the Democratic Republic of the Congo ("*Mission de l'Organisation des Nations Unies en République Démocratique du Congo,"* or "MONUC"). Mineral resources have historically financed both local and foreign-armed groups especially in the eastern part of the country during the first civil war between 1996 to 1997, the second war from 1998 to 2003, as well as during the aftermath of the second war.[60] Although the UN has used expert panel investigations and public reporting to address this issue, it did not impose sanctions on conflict resources in the DRC until 2008.[61]

In December 2008, through Resolution 1856, the Security Council gave MONUC a mandate to "coordinate operations with the [Armed Forces of the Democratic Republic of the Congo ("FARDC") to prevent] the provision of support to illegal armed groups, including support derived from illicit economic activities."[62] Resolution 1856 also gave MONUC the authority to "use its monitoring and inspection capacities to curtail the provision of support to illegal armed groups derived from illicit trade in natural resources."[63] In Resolution 1857, the UNSC extended the list of individuals and companies subject to travel sanctions, financial sanctions, or both, to "individuals or entities supporting the illegal armed groups in the eastern part of the Democratic Republic of the Congo through illicit trade of natural resources," sending a strong signal to companies involved in trading conflict resources.[64] Despite its broad authority, however, MONUC faced challenges implementing Resolution 1856. These challenges included the fact that MONUC troops' lacked autonomous authority to intervene without the FARDC, and accusations of human rights abuses and resource trafficking by the FARDC.[65]

Table 1. Control of Conflict Resources by UN Peacekeeping Missions, 1988–2009[92]

Mission	General mandate and conflict resources related measures	Outcomes
Afghanistan: UNAMA[h] *(2002–present)*	Assistance. Counternarcotics operations	Policy coordination and technical cooperation; no military component.
Angola: UNAVEM[a] (*1988–1997*); MONUA[b] (*1997–1999*)	Observation. Ban on noncertified diamond exports	The mission had very limited effectiveness, but the ban was effective—partly because of military pressure on UNITA from the Angolan government, and partly because the governments in Kinshasa and Brazzaville, which had provided conduits for UNITA's diamond smuggling, were toppled; peacekeepers provided some assistance to UN expert panels.
Cambodia: UNTAC[c] *(1992–1993)*	Transitional authority. Ban on logging exports (sawn timber exempt)	Limited effectiveness because the ban was not implemented for long enough, and there was no UN enforcement of the ban in Khmer Rouge areas along the Thai border; the UN mission provided some assistance as a transitional authority in the area of environmental and resource management.
Côte d'Ivoire: MINUCI[j] *(2003–2004)*, UNOCI[k] *(2004–present)*	Assistance. Ban on all diamond exports	Embargo-monitoring unit; no mandate to address key resource sectors (e.g., cocoa) from which rebels obtain financing.
Croatia: UNTAES[d] *(1996–1998)*	Transitional authority. Border monitoring	Limited support for local police forces.
DRC: MONUC[f] *(1999–2010)*, MONUSCO[g] *(2010-present)*	Assistance. Curtailing financing of illegal groups	Monitoring, border control at airports, some military assistance to Congolese army to curtail armed groups' access to natural resources.
Liberia: UNMIL[i] *(2003–present)*	Assistance. Ban on timber and all diamond exports	Limited assistance in key areas; UNMIL also maintains an Environment and Natural Resources Unit, which assists UN expert panels.
Sierra Leone: UNAMSIL[e] *(1999–2005)*	Assistance. Ban on noncertified diamond exports	Peacekeepers provided some assistance with monitoring and conflict resolution in the diamond sector.

Notes:
a. UN Angola Verification Missions; b. UN Observer Mission in Angola; c. UN Transitional Authority in Cambodia; d. UN Transitional Administration in Eastern Slavonia, Baranja, and Western Sirmium; e. UN Assistance Mission in Sierra Leone; f. UN Mission in the Democratic Republic of the Congo (*Mission de l'Organisation des Nations Unies en République Démocratique du Congo*); g. UN Stabilization Mission in the Democratic Republic of the Congo (*Mission de l'Organisation des Nations Unies pour la stabilisation en République Démocratique du Congo*); h. UN Assistance Mission in Afghanistan; i. UN Mission in Liberia ; j. UN Mission in Côte d'Ivoire ; k. UN Operation in Côte d'Ivoire.

Discussion

As an international military force deployed to "keep the peace," UN peacekeeping operations—and, more broadly, non-UN peacekeeping forces, such as regional peacekeeping forces—have a unique ability to help sever links between resources and peace spoilers. Although peacekeepers could theoretically be deployed to control diamond mining, logging, or drug trafficking operations that finance armed groups, the governments that are mandating peacekeeping operations—through the UNSC, for example—are often reluctant to assign peacekeepers such roles.[66]

When deciding whether to deploy UN troops for combat operations intended to curtail rebel access to resources a number of considerations must be addressed, including the direct intervention's legality, the intervention's affect on relations between the UN mission, the host government, and local populations, and the peacekeeping missions capacity to intervene successfully. [67]

Legally, local authorities have the right to prohibit unilateral UN troop deployment, unless the country is under a UN trusteeship mandate whereby sovereign authority is vested in a UN administrative body.[68] Moreover, because many missions are carried out under Chapter VI of the UN Charter, which addresses pacific settlement of disputes, rather than Chapter VII, which addresses forceful settlement of disputes, peacekeeping missions are prevented from engaging in any "offensive" combat role, such as taking control of resource production areas.[69] Out of the half-dozen peacekeeping missions established since 1989 in response to commodity-financed conflicts, only one—MONUC—has been specifically mandated to address the financing of illegal groups by illicit economic activities.[70] That lone example included military support to DRC government troops.[71] In recent years, the UN Head of Mission and the UN Mission Chief of Staff, as well as individual UN-mandated military contingents have used their "room for maneuver" to investigate, report on, or stop illegal resource trade and management practices.[72] Despite this trend, decision makers within UN missions have generally been wary of overstepping their mandate, overextending or diverting resources, alienating economic or political stakeholders, or putting both peacekeepers and civilians at risk by interfering with the economic interests of criminals and armed groups.[73]

Sovereignty issues, including sovereignty over resources, have also discouraged those governments sending and receiving resources from assigning UN peacekeepers an active role in preventing conflict resources from funding peace spoilers.[74] The economic interests of governments and companies may conflict either because a company and a host government are competing producers, or because a sending government also happens to be the home government of investors.[75] Therefore, if peacekeepers are directly involved in conflict resources issue, there may be allegations that the peacekeepers are serving the interests of their home countries—specifically by protecting those countries' access to resources.[76] Although the U.S. invasion of Iraq was not a "peacekeeping" mission, the non-UN mandated and U.S.-led "coalition of the willing" was the subject of such allegations.[77] On the other hand, shared economic interests could create an incentive for granting peacekeeping missions broader mandates and thereby increasing their effectiveness.

Military capacity must also be considered when deciding whether to deploy UN troops to protect resources from peace spoilers. Most governments provide troops to UN missions on the assumption that the risk of casualties is very low.[78] In addition, the military capacity of most UN contingents is usually limited, especially for offensive combat operations.[79] Many governments that send troops to UN peacekeeping missions view resource control not only as a high-risk option, but as a distraction from or counterproductive to peacekeepers' principal political and humanitarian mandates.[80] "Robust" peacekeeping—entailing combat operations in mining or logging areas, for example—is thus unlikely, in part because of the risk of casualties among both civilians and UN troops.[81] Nevertheless, in some cases, the deployment of UN troops in resource areas has been viewed as a necessity.[82] Where such efforts have been undertaken, however, they have occasionally met with determined resistance from armed groups, and the resource-rich areas have often been the last ones to come under UN control.[83]

At the mission level, operational staffs, both at headquarters and on the ground, recognize the importance of curtailing peace spoilers' access to high-value resources, but they are also aware of the difficulties associated with intervention. Mission staff often report on the role of resources in local skirmishes, not only between armed groups, but also between rival government security agencies, private militias, and criminal gangs.[84] This low-level violence rarely receives political attention, but political affairs officers in UN missions have nevertheless warned of the potential for escalation.[85] They have also noted the broader implications of resource revenues for relations within and between armed groups.[86] Such issues have also received greater consideration because UN intelligence efforts have been boosted by Joint Mission Analysis Cells, which are charged with assessing the overall political and security situations of UN missions and reporting to the Special Representatives of the UN Secretary General that head the missions.[87]

After addressing these considerations, the UN intervention would proceed if it will likely make a substantial contribution to a speedier end to the conflict, without creating harmful consequences in the future, for example loss of livelihood or abuse by rebel groups. When armed groups' access to conflict resources is curtailed, they sometimes turn on the local populations, either to obtain funding or simply for revenge—events for which the UN would bear some responsibility.[88] Furthermore, analysis reveals that rebel groups operating in resource-rich environments tend to commit worse abuses against civilians.[89] This behavior appears to be associated with a membership pool of "consumers" rather than "investors"—that is, combatants who are drawn to the rebellion by short-term, opportunistic economic objectives rather than by long-term political objectives.[90] In the short term, UN military interventions in resource sectors may risk exacerbating abuses by rebels against civilian populations. But in the long term, such interventions may not only reduce the funding and operating capacity of rebel groups, but may also

help focus rebel movements on political objectives, and therefore on negotiations, rather than on survival and profiteering.[91]

Conclusion

Peacekeeping forces can play a role in curtailing peace spoilers' access to resource revenues. Yet, the evidence reviewed for this paper suggests that peacekeeping missions have so far gained limited direct experience in seeking to achieve this goal. Such interventions must be carefully considered from legal, humanitarian, political and economic standpoints before being carried out, preceded by careful operational planning, and conducted by adequately trained, equipped, and disciplined international forces so that the risks of human rights abuses, military failure and corruption are minimized. Additionally, any collaboration between peacekeepers with local forces should be come under stringent guidelines and monitoring. Short of engaging in interdiction, peacekeepers do have the potential to help collect information on resource sectors, remove peace spoilers from important resource extraction areas, and back up police efforts to arrest illicit traders.

Endnotes: Bankrupting Peace Spoilers: What Role for UN Peacekeepers?

1 *Tracing Small Arms is Key to Reducing Violence, Says the UN General Secretary*, United Nations Office on Drugs and Crime (2011), http://www.unodc.org/southerncone/en/frontpage/2011/04/26-rastreamento-de-armas-leves-e-estrategico-para-reducao-da-violencia-afirma-secretario-geral-da-onu.html.

2 Peter Wallenstein et al., United Nations, The Stockholm Process 105 (2003).

3 Norwegian Ministry of Foreign Affairs, Curtailing Conflict by Blocking Belligerents' Exports of Natural Resources to Legal Markets 7 (2006), http://www.un.org/Docs/journal/asp/ws.asp?m=S/RES/1643(2005).

4 In resource-rich areas, a higher incidence of abuses against civilians may also be linked to low dependence on local populations for sustenance; this is in contrast to rebellions that operate in resource-poor areas or that lack access to external sponsors. Ingrid Samset, Ralph Bunche Institute for Int'l Studies, Natural Resource Wealth, Conflict and Peacebuilding 3 (2009), http://www.cmi.no/publications/file/3283-natural-resource-wealth-conflict.pdf.

5 Conflict resources are defined as "natural resources whose systematic exploitation and trade in a context of conflict contribute to, benefit from or result in the commission of serious violations of human rights, violations of international humanitarian law or violations amounting to crimes under international law." *See Conflict*, Global Witness, http://www.globalwitness.org/campaigns/conflict (last visited Nov. 2 2011).

6 *See Update Report No. 2 Natural Resources and Conflict*, Sec. Council Report (June 20, 2007), http://www.securitycouncilreport.org/site/c.glKWLeMTIsG/b.2822787/k.CEE6/Update_Report_No_2BRNatural_Resources_and_ConflictBR20_June_2007.htm.

7 The UN has also supported other initiatives to address the links between high-value natural resources and armed conflicts, through resolutions; for example, the Kimberley Process Certification Scheme, passed in the UNSC and General Assembly, which is designed to stem the trade in conflict diamonds, is seeking strengthened standards of corporate practices among extractive companies operating in conflict zones through the work of UN Special Representative John Ruggie and the Guiding Principles on Business and Human Rights. *See* Rep. of the Special Representative of the Secretary-General on the Issue of Human Rights and Transnational Corporations and Other Business Enterprises, *Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework,* U.N. Doc. A/HRC/17/31 (Mar. 21, 2011), http://www.business-humanrights.org/media/documents/ruggie/ruggie-guiding-principles-21-mar-2011.pdf.

8 *See Update Report No. 2 Natural Resources and Conflict*, Sec. Council Report (June 20, 2007), http://www.securitycouncilreport.org/site/c.glKWLeMTIsG/b.2822787/k.CEE6/Update_Report_No_2BRNatural_Resources_and_ConflictBR20_June_2007.htm.

9 Philippe Le Billon & Eric Nicholas, *Ending 'Resource Wars': Revenue Sharing, Economic Sanction or Military Intervention?,* 14 Int'l Peacekeeping 613, 617 (2007), http://www.relooney.info/0_New_8467.pdf.

10 *Id*. at 621.

11 *Id*.

12 *Id*.

13 *Id*.

14 *Id*. at 624.

15 S.C. Res. 661, § 3(c), U.N. Doc. S/RES/661 (Aug. 6, 1990) (sanctioning all commodities from Iraq).

16 S.C. Res. 1478, § 17(a), U.N. Doc. S/RES/1478 (2003) (sanctioning timber products originating in Liberia)

17 S.C. Res. 883, § 17(a), U.N. Doc. S/RES/883 (1993) (freezing funds and financial resources that contribute to Libya's publicly owned oil).

18 Philippe Le Billon, Natural resources, armed conflicts, and the UN Security Council 2 (2007), http://www.ligi.ubc.ca/sites/liu/files/Publications/30May2007_Natural_Resources_Armed_Conflicts_UNSC07-001.pdf.

19 *Id.* at 2. *See* Sanction-Busting *Definition*, Merriam-Webster Dictionary, http://dictionary.cambridge.org/dictionary/british/sanctions-busting (last visited Dec. 15, 2011).

20 *Id*. at 2.

21 *Id*.

22 *Id*.

23 UNA-Canada, Is Peace in the World a Utopian Dream? The Role of the United Nations (2011), http://www.unac.org/peacecp/factsheet/role.html (last visited Dec. 2, 2011) (stating that the Food and Agriculture Organization, the UN Environment Programme, and the UN Development Programme are among the UN agencies involved in efforts to reform resource sectors and build local institutional capacity in post-conflict settings).

24 *See* Clive Schofield, *A "Fair Go" for East Timor? Sharing the Resources of the Timor Sea*, 27 Contemporary Se. Asia 255, 269 (2005).

25 Renata Dwan & Laura Bailey, Liberia's Governance and Economic Management Assistance Programme 6 (2006), http://siteresources.worldbank.org/INTLICUS/Resources/DPKOWBGEMAPFINAL.pdf.

26 *Id*. at 8, 16-18.

27 Second International Conference on DDR and Stability in Africa Kinshasa, Democratic Republic of Congo, June 12-14, 2007, *DDR and Transitional Justice*, http://www.un.org/africa/osaa/speeches/ddr%20and%20tj%20in%20africa%20-%20english.pdf.

28 *Role of the Security Council*, United Nations Peacekeeping, http://www.un.org/en/peacekeeping/operations/rolesc.shtml (last visited Nov. 21, 2011).

29 John Stremlau, Carnegie Corp. of New York, Sharpening International Sanctions: Toward a stronger role for the United Nations 8-9 (1996), http://carnegie.org/fileadmin/Media/Publications/PDF/Sharpening%20International%20Sanctions%20Toward%20a%20Stronger%20Role%20for%20the%20United%20Nations.pdf.

30 *See generally* Phillip Le Billon, *The political ecology of war: natural resources and armed conflicts*, 20 Political Geography, 561 (2001).

31 Stremlau, *supra* note 29, at 9.

32 Peter Wallensteen et al., Sanctions for Conflict Prevention and Peace Building: Lessons Learned from Cote D'Ivoire and Liberia 8, 17 (2006).

33 Le Billon, *supra* note18, at 2.

34 *Id.* at 5.

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36 *Id.* at 2-3.

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The Real Cost of China's Rare Earth Export Quotas on American Job Security

*by Katherine Weatherford**

The populist appeal for job creation currently dominating U.S. politics has spurred copious discussion about whether regulatory policy is responsible for the present economic condition.[1] Although this debate centers primarily on domestic regulations, recent congressional action[2] confirms reports that China's economic policies, particularly its export restraints and currency manipulation, have not only increased the already significant trade deficit between the U.S. and China, but have cost approximately 2.8 million U.S. jobs.[3] Of specific concern are China's export quotas on Rare Earth Minerals ("REMs").

REMs are used in the production of virtually all technological goods—from cell phones to wind turbines.[4] Thus, it is no surprise that the demand for REMs has increased exponentially over the last decade.[5] Even though the U.S. has sufficient REM reserves to satisfy demand, importing REMs from China costs less than producing them domestically.[6] And because many other nations also rely on China's low–cost REMs, China has dominated the global REM market, and currently produces 97% of the world's supply.[7] Consequently, when China set export quotas on REMs, it resulted in uncertainty about future availability accompanied by a drastic price increase.[8]

The implications of export quotas on rare earths, especially in light of the current economic downturn, make it evident that the U.S. must begin to consider feasible solutions to the REM access conflict.[9] One option is to continue accepting REMs from China subject to its export quotas. Yet, choosing this option will undoubtedly force U.S. taxpayers to continue financing China's REM stockpiles at the expense of American jobs.[10] This is because product manufacturers located in China can purchase REMs without the added costs associated with export quotas. This incents foreign manufacturers, including U.S.based companies, to relocate to China in pursuit of these cheaper REMs, and ultimately, to take U.S. manufacturing jobs overseas as well.[11]

A second option is for the United States to file a complaint with the World Trade Organization ("WTO"), as it did in 2009 in collaboration with the European Union and Mexico.[12] This 2009 complaint asserted that China's export quotas on raw minerals violated Article XI:1 of the General Agreement on Tariffs and Trade ("GATT"),[13] and various provisions of China's Accession Protocol and China's Working Party Report.[14] China invoked GATT Article XX exceptions, framing its export restraints as a means to "protect the environment and [its] limited resources" and arguing that its actions advance "the sustainable development of the global economy."[15] Nevertheless, the WTO panel rejected China's defense,[16] prompting China to file an appeal, which is currently pending.[17]

In both the 2009 complaint and the current conflict over REMs, China disguises its economic motives by implying that export quotas will result in reduced production, which will help protect natural resources. But this is not the case if China merely supplements wouldbe exports with domestic production. If China actually intended to protect its environment, it should have regulated its mining operations rather than its exports.[18] Regardless of China's intention, it seems futile for the United States to pursue a resolution through the WTO process given the failure of the 2009 consultations to produce an effective outcome thus far.

A third option is for the U.S. to produce REMs domestically.[19] While this is technically feasible, the U.S. closed its only remaining rare earth mining operation in 2002 as a result of environmental damage and intense global competition.[20] Plans are in motion to reopen the Molycorp, Inc. facility in Mountain Pass, California by 2012;[21] however, building new facilities will require a large investment.[22] Even with domestic production, the U.S. will still need to send the REMs to China for alloying and manufacturing, at least until the technology needed to safely and economically perform these processes is developed.[23] Although domestic production is likely the most sustainable mechanism to stimulate longterm job growth, the United States must take other steps in the interim to respond to China's REM export quotas.[24]

One intermediate step is to enact legislation modeled after the Conflict Minerals provision in § 1502 of the Dodd–Frank Wall Street Reform and Consumer Protection Act.[25] That provision instructs the Securities and Exchange Commission to promulgate a rule requiring any producer who uses conflict minerals "to disclose in . . . its annual report whether its conflict minerals originated in the Democratic Republic of the Congo or an adjoining country."[26] Just as the § 1502 reporting requirement will help to prevent human rights abuses in the Congo, a similar rule requiring disclosure of REMs originating in China would assist in combating China's protectionist policies and lax environmental regulations.[27]

Ultimately, the United States must begin evaluating legitimate solutions to the REM access conflict. In doing so, the U.S. must not act hastily, as an illconsidered solution will likely fail to focus on longterm sustainable development. Most importantly, in choosing whether and how to pursue domestic REM production the U.S. must be especially attentive not to neglect environmental protection in favor of economic stability.[28] Only by considering both domestic action and international diplomacy can the United States resolve the REM access conflict.

Endnotes: The Real Cost of China's Rare Earth Export Quotas on American Job Security *on page 55*

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High-value Natural Resources:

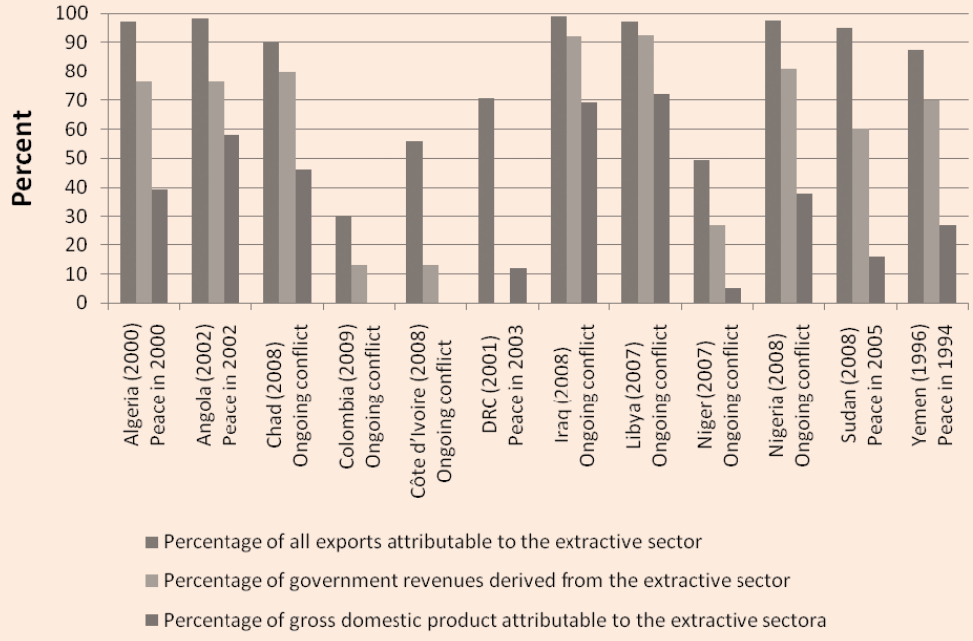
A Blessing or a Curse for Peace?

*by Päivi Lujala and Siri Aas Rustad**

Introduction

High-value natural resources have the potential to promote and consolidate peace. Too often, however, they make the path to sustainable peace long and hazardous. Valuable resources can help to jump-start development, secure sustainable growth, raise living standards, and increase economic equality. [1] They are also an important source of foreign currency for cash-strapped governments, can reduce dependence on international aid, and can support compensation and post-conflict relief for war-affected populations.[2] But the promise of a brighter and more peaceful future is often spoiled by deep-rooted corruption and patronage, which confer benefits on small groups rather than on the population as a whole, and by shortsighted management of the resources and the revenues they generate.[3] In addition, the mere presence of high-value resources can jeopardize peace if the resources become the focus of violent disputes or provide financing for groups that seek to ignite (or resume) armed conflict.

Figure 1. The Economic Role of the Extractive Sector in Selected Post-Conflict and Conflict-Affected Countries[12]



In many post-conflict countries, revenues from high-value natural resources— such as oil, natural gas, minerals, gemstones, and timber—are an integral (and even dominant) part of the national economy and state budget.[4] In post-conflict Algeria, Angola, and Sudan, for example, oil and gas account for more than sixty percent of government revenues and over ninety percent of all export revenues.[5] *See* Figure 1. In Sierra Leone, following a brutal civil war that ended in 2002, when diamonds accounted for ninety-six percent of all exports.[6] And in Chad, Iraq, Libya, and Nigeria—all of which were affected by armed conflict during the early years of the twenty-first century—oil and gas account for as much as seventy percent of gross domestic product and more than eighty percent of government revenues.[7] In Niger, uranium and gold are important revenue sources,[8] as are oil, cocoa, and coffee in Côte d'Ivoire,[9] and diamonds and timber in the Central African Republic.[10] In Burma, gas exports made up one-quarter of all exports, while forest products and gemstones were other important exports between 2008 and 2010.[11]

When peace comes, the revenues from high-value natural resources—when managed well—can help finance reconstruction and other vital peace-related needs.[13] When mismanaged, however, resource revenues can undermine both economic performance and the quality of governance, and thereby increase the risk of renewed violence.[14]

Recent high-profile reports by the U.N. Secretary-General, the World Bank, the U.N. Environment Programme, and the United Nations have highlighted the need to more effectively harness high-value natural resources for development and peacebuilding.[15] If managed effectively, high-value natural resources constitute substantial assets that national and international actors can use to support core peace building objectives, including macroeconomic recovery, generation and support of livelihood, the reform of governance and political processes, and security improvement.[16]

The fact that so many resource-rich countries are unable to achieve long-term peace, however, raises some difficult questions about how high-value resources should be managed in post-conflict settings. For example,

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how can the environmental effects of resource extraction be minimized? How can illegal extraction be curtailed without damaging livelihoods? How can one ensure that revenues are used to advance long-term development objectives? The goal of our analysis here is to provide insight into these and similar questions — for the benefit of national and local governments, national and transnational civil society organizations, extractive industries, and the international community. To this end, policy makers, field researchers, practitioners, and scholars—all of whom have close knowledge of the issues at hand—have been asked to share their views on the challenges associated with the management of high-value resources in post-conflict and conflict-affected countries.

From Potential Prosperity to Conflict: What Goes Wrong?

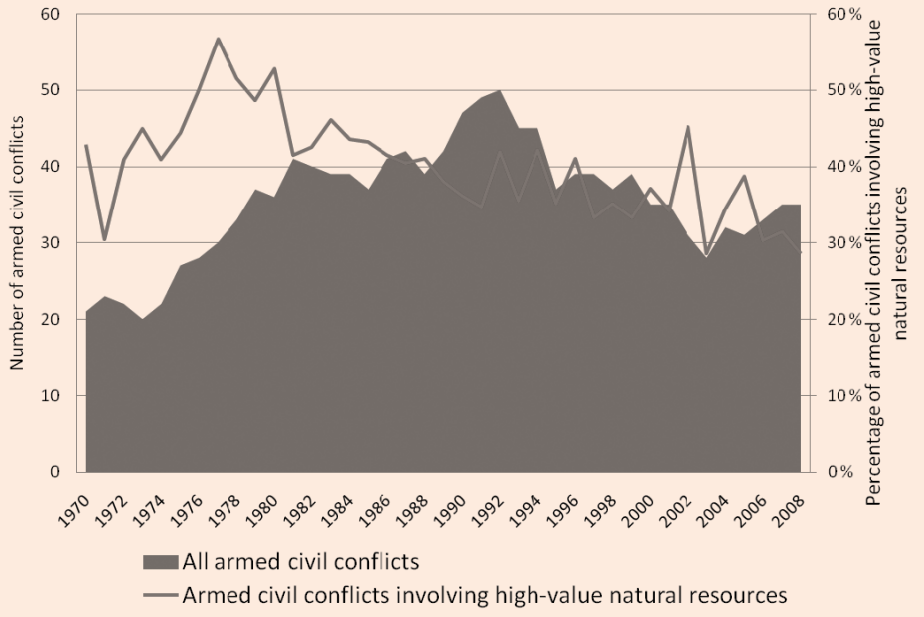
High-value natural resources have been associated with dozens of armed conflicts, millions of deaths, and the collapse of several peace processes; case study and statistical evidence confirms that such resources play a role in sparking and fueling armed civil conflict.[17] According to data gathered by Siri Aas Rustad and Helga Malmin Binningsbø, between 1970 and 2008 the portion of armed civil conflicts that were in some way related to high-value natural resources ranged from twenty-nine to fifty-seven percent.[18] *See* Figure 2.

Why is peace so difficult to achieve and sustain in the presence of these resources?[19] High-value natural resources increase the risk of conflict in a number of ways. The risk of conflict can be directly increased when access to revenues motivates or finances belligerent movements, or when grievances are created (1) by unmet expectations or inequalities in the distribution of revenues, jobs, and other benefits, or (2) by the negative side effects of resource exploitation.[20] The risk of conflict can be indirectly increased when resource sectors undermine a nation's economic performance and the quality of its institutions.[21] Thus, the three main avenues that lead from natural resources to armed conflict are resource capture, resource related grievances, and adverse effects on the economy and institutions.[22]

Paul Collier, Anke Hoeffler, and Päivi Lujala suggest that the capture of resources for personal or regional enrichment is a possible motivation for rebel uprisings and violent secessionist movements.[23] Although resource capture can be one of the goals of armed rebellion, it is rarely, if ever, the sole motivation.[24] Even in Sierra Leone, where the Revolutionary United Front has been represented as the classic example of a predatory, greed-driven movement, the reality is far more complex.[25] More often, resource capture is a means of financing warfare and attracting supporters.[26] For example, the Revolutionary Armed Forces of Colombia (Fuerzas Armadas Revolucionarias de Colombia, or "FARC") has for decades relied on kidnapping and the production and selling drugs to finance its insurgency.[27] As efforts to curtail FARC's access to income from these activities have met with some success, FARC has turned to gold mining to support its violent campaign against the government.[28]

Grievances can motivate armed conflict, particularly when the parties to a resource related dispute are divided along ethnic, religious, or other lines.[29] Among the events that may spark violent uprisings are land appropriation, environmental degradation, population displacement, large inflows of migrants, and frustration over unfulfilled economic expectations.[30] Examples of grievance-based conflicts include Aceh, in Indonesia; Bougainville, in Papua New Guinea; Kurdistan, in Iraq; northern Niger; and southern Sudan.[31] Grievances do not necessarily arise in the context of potential regional autonomy, as was the case in Aceh and South Sudan.[32] They may also occur in response to the abuse of power by local elites, as was the case in Sierra Leone.[33]

Figure 2. Armed Civil Conflicts Involving High-value Natural Resources, 1970–2008[34]



With respect to economic growth and developmental outcomes, many resource-rich countries perform poorly in comparison to their less resource-rich counterparts.[35] This phenomenon, often referred to as the *resource curse* or the *paradox of plenty*,[36] is exemplified in countries such as Algeria, the Democratic Republic of the Congo, Iraq, and Nigeria.[37] The resource curse has a number of potential causes, including the following:

- A government that is able to finance its budget through natural resource revenues rather than public taxation can easily become detached from, and therefore less accountable to, the populace.[38]

- Resource revenues often fuel patronage, corruption, and rent seeking, all of which may promote the interests of a small and predatory elite.[39] In Nigeria, for example, it is estimated that one percent of the population enjoys eighty percent of the oil revenues.[40]
- When the group in power focuses on short-term gains (sometimes in an effort to meet popular demands), the results may include overspending, poor investment decisions, and ill-conceived economic policies.[41]
- In countries whose economies depend on a few valuable resources, the weakness of political and economic institutions may be compounded by exposure to price shocks, which occur when rapid shifts in raw material prices lead to abrupt fluctuations in resource revenues.[42]

Political and economic underperformance is endemic in many resource-rich countries—which, according to empirical studies, renders them vulnerable to conflict.[43] Several studies have documented that armed civil conflict is more likely to occur in poor countries than in rich ones.[44] Research also shows that dysfunctional institutions and low state capacity are positively correlated with an increased likelihood of conflict.[45]

Supporting the case study evidence, several statistical studies document strong and significant relationships between particular natural resources and conflict, but few have been able to disentangle the possible mechanisms behind the relationships.[46] James Fearon and David Laitin, for example, have found that oil increases the likelihood of conflict—a finding that has been confirmed by the work of Indra de Soysa and Eric Neumayer, Macartan Humphreys, and Päivi Lujala.[47] Lujala has also found that when oil and gas are located in the conflict area, conflicts tend to be longer and more severe.[48] Taken together, Lujala shows that (1) oil-producing countries are 1.5 to 2 times more likely to experience armed civil conflict than nonproducers, and that (2) when internal conflict occurs in a region that has oil reserves, it lasts twice as long as conflicts that occur in areas without oil reserves, and combatant deaths are twice as high.[49] Collier and Hoeffler's 2006 study of conflict types links oil to higher risk of secessionist conflict, and Lujala shows that secessionist conflicts in regions with oil reserves tend to be more severe than any other conflicts.[50]

Diamonds and other gemstones have also been subject to statistical studies.[51] Fearon and Lujala have shown that gemstones have effects similar to those of oil—namely, conflict is more likely and tends to last longer.[52] The role of timber, opium, and other high-value crops is less clear.[53] There is some evidence that opium cultivation makes conflicts last longer, but little systematic evidence links timber production to civil war.[54]

…when internal conflict occurs in a region that has oil reserves, it lasts twice as long as conflicts that occur in areas without oil reserves, and combatant deaths are twice as high.

Resources for Conflict

Because natural resources have varying characteristics, they are not equally relevant to conflict—and those that are relevant may be so for different reasons.[55] High-value resources, for example, may be either renewable or nonrenewable, although most— such as oil, gas, rutile, coltan, cobalt, diamonds, and gold—are nonrenewable, and tend to be located in geographically limited areas.[56] What all high-value resources have in common, however, is the potential to yield substantial revenue.[57]

Some high-value resources are limited to confined areas and depend on sophisticated and expensive extraction methods or require special types of transportation (e.g., pipelines).[58] Because such resources are difficult to loot and are generally securely controlled by the government during periods of both peace and war, they provide fewer opportunities for conflict financing.[59] Thus, the revenues from resources such as oil, natural gas, kimberlite diamonds, copper, and rutile are likely to accrue to the central government and those who control it.[60] Such resources may nevertheless play a role in conflict: rebel movements may seek to oust the government to gain control of them, and if the resources are located in more remote areas, they may play a role in secessionist uprisings.[61] Rebels may also loot existing stockpiles of commodities or may attempt to bring extraction or transportation to a halt, in order to cut off the central government from its revenue source.[62] Finally, the large revenues derived from high-value resources may increase the risk of conflict through adverse effects on political and economic institutions.[63]

Some high-value resources are linked to conflict because of their financing potential.[64] However deep grievances may be, rebellion is unlikely to begin or to be sustained without financing opportunities.[65] Since the end of the Cold War, financing from the superpowers has declined and revenues from valuable natural resources have gained importance as a source of conflict financing.[66] The resources most suitable for wartime looting have extremely high value-to-weight ratio and can be easily extracted, concealed, smuggled, and sold.[67] Easy extraction is a particular advantage: a resource that can be extracted by individuals or small groups using simple tools (that is, through artisanal mining techniques) can be readily exploited by rebels who either undertake the mining themselves or use forced labor.[68] Among the commodities with high price-to-weight ratios that can be artisanally mined are alluvial gold, alluvial diamonds, and

gemstones such as rubies and sapphires.[69] Rebels do not need to rely on extraction directly; they also engage in illegal taxation of trade and export routes.[70] In some cases, including Colombia and Nigeria, rebels have succeeded in obtaining ransoms from extractive firms by threatening to blow up oil pipelines or by kidnapping personnel working on installations.[71]

When it comes to conflict financing, many natural resources have another advantage: they are generic, which means that their origins cannot be traced as easily as those of manufactured products.[72] Because generic illegal commodities can be readily integrated into legal trade channels, they are a particularly lucrative form of contraband, with trade prices that differ only marginally from those of their legal counterparts.[73] Another advantage of some high-value resources is their scarcity.[74] Some occur in only a small number of countries and have few substitutes, and are, therefore, of strategic importance.[75] Demand for such resources may sometimes override other considerations, such as the legality of the exploitation, the behavior of the government that has granted exploitation rights, and the role of the commodities in financing warfare.[76]

Of course, resources other than high-value minerals may play a role in conflict or have adverse effects on economic and political institutions.[77] Most notable are coca and opium, which have been linked to conflicts in Latin America and Asia, respectively, and timber, which has been connected to a number of conflicts in Africa and Southeast Asia.[78] Fisheries have also been used to finance conflict; in Somalia, for example, some warring groups have sold false fishing licenses for offshore tuna reserves.[79]

Conclusion

When conflict ends, many of the original causes often remain unresolved—whether they relate to resources or not—and may even have been aggravated by the grievances and economic and political havoc associated with the conflict itself.[80] Post-conflict countries thus face daunting challenges when it comes to building peace, reducing poverty, and managing natural resources—particularly when poor resource management may be undermining both peacebuilding and poverty reduction.[81] It is clear that many resource-rich post-conflict countries are unable to sustain peace.[82] This observation has been confirmed by empirical studies: for example, Rustad and Binningsbø's analysis of 285 episodes of armed civil conflict shows that when natural resources play a role, the period of post-conflict peace is forty percent shorter than when they do not.[83]

The difficulty of sustaining peace when high-value natural resources are involved has two key implications: (1) the conflicts involving such resources are generally harder to resolve; and (2) thus far, the measures that have been used to manage natural resources and their associated revenues are generally unsatisfactory.[84] Thus, improved management of high-value natural resources and the associated revenues is fundamental to peace building.

This article is an edited version of the first chapter of a volume entitled *High-Value Natural Resources and Post-Conflict Peacebuilding*, which addresses a full range of challenges associated with high-value resources in post-conflict settings. This volume reflects the perspectives of forty-one contributors and considers the experiences of eighteen countries with analyses of additional countries.

The volume's chapters are grouped into five sections that examine specific challenges and opportunities within each stage of the resource chain:

1. The ways in which host governments, extractive industries, and the international community can strengthen the management of extraction to promote peace.
2. The instruments used to track commodities and revenues.
3. The pros and cons of various options for revenue distribution, including whether producing regions should receive preferential treatment in revenue distribution, as well as measures for stemming corruption.
4. The role of revenue allocation and institution building, including several in-depth case studies on various approaches.
5. The importance of taking local livelihoods and economies into account in the design and implementation of approaches to managing high-value natural resources.

Taken together, the chapters in the volume offer a consistent message: proper management of high-value natural resources is crucial in the aftermath of armed conflict. Effective management of these key assets can support a range of peacebuilding objectives—from livelihood and macroeconomic recovery, to good governance and inclusive political processes, to improved security. The volume also demonstrates that there is no single, universally applicable approach to natural resource management in post-conflict settings.

Endnotes: High-value Natural Resources: A Blessing or a Curse for Peace?

1 *See generally* Shahid Yusuf, World Bank, *Economics through the Critical Look at Thirty Years of the World Development Report* (2008) (discussing the successes and failures of the World Bank and global development).

2 *See generally* U.N. Env't Programme, *From Conflict to Peacebuilding: The Role of Natural Resources and the Environment*, (Feb. 2009), http://www.unep.org/pdf/pcdmb_policy_01.pdf.

3 *See* Philippe Le Billon, *The Political Ecology of War: Natural Resources and Armed Conflict*, 20 Pol. Geography 561, 566-67, 578 (2001) (asserting that although many patronage systems are corrupt, the phenomenon of patronage is distinct from that of corruption).

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Weak Planning Process Frustrates Protection of Puerto Rico's Threatened Coastline

*by Mark Borak**

For over a decade, conservationists in Puerto Rico have waged a constant battle to gain legal protection for one of the island's most ecologically sensitive natural resources.[1] Thanks in part to its location on a picturesque stretch of coastline near its capital, San Juan, a swath of undeveloped land known as the Northeast Ecological Corridor ("NEC") has come under constant threat of large scale development.[2] Aside from its stunning view of verdant hills descending from *El Yunque* National Forest to the pristine shoreline, the corridor harbors a seven mile long sandy beach, a bioluminescent lagoon, mangrove forest, and habitats for over fifty rare, threatened, endangered and endemic species—including the leatherback sea turtle.[3] The critically endangered leatherback returns each year to nest on the beach, which is one of only three significant nesting sites left in the United States.[4] Leatherbacks are especially vulnerable to the effects of development activity such as beach renourishment and artificial lighting.[5] In response to a petition from the Sierra Club in August 2011, the U.S. Fish and Wildlife Service expressed its intent to review and revise the designated critical habitat for the leatherback, and possibly add the NEC as a critical habitat.[6] This review process, however, will likely take several years, and would only afford protection from Federal actions, leaving the NEC vulnerable to private development.[7]

During the administration of former Governor Aníbal Acevedo Vilá, concerned residents, fisherman, and environmental activists formed the Coalition for the Northeast Ecological Corridor ("Coalition"), which successfully swayed the former Governor to designate the area as a nature reserve.[8] Acevedo Vilá's order prohibited the planned development of large-scale Marriott and Four Seasons golf resorts in favor of less invasive uses centered on eco-tourism.[9] However, once Vilá's term expired in 2009, his successor Governor Luis Fortuño abruptly rescinded the nature reserve designation and pushed through a new plan that allows large scale residential, commercial and tourist development.[10] After a decade-long citizens campaign finally secured protection for the corridor, there was no effective check to prevent the new administration from reversing the order and further hampering conservation by changing the planning and permitting process in order to encourage more development.[11]

Among the first actions that Fortuño took upon entering office was to create a new agency to handle construction permits, which promises to process most permits within ninety days of receipt regardless of their complexity.[12] With the stewardship of several officials who had direct ties with local developers, the new development plan for the corridor was shuttled through the planning process with minimal opportunity for review or public comment.[13] This new plan, dubbed the Great Northeast Reserve, cobbles together tracts of existing parkland and retains some of the originally protected areas, but omits over 430 acres that were protected under the previous designation and permits extensive development in the heart of the corridor.[14]

While representatives from the Coalition contend that the new plan falls far short of conservation and are backing a Puerto Rico Senate bill to reverse it, the deeper issue is the manner in which it was approved.[15] After limited opportunity for public review, the plan gained rapid approval by the Puerto Rico Planning Board (whose Chair and four other members were appointed by Fortuño) and the Department of Natural and Environmental Resources (whose Secretary consulted for a private development project that was included in the new plan).[16] The Tourism Company (whose Director of Planning and Development prepared the Environmental Impact Statement for one of the developers) and the Department of Economic Development and Commerce (whose principal officer in charge of strategic project development served as construction manager for one of the proposed resorts) both assented to the plan after limited review.[17]

These direct conflicts of interest demonstrate how Puerto Rico's land use process has succumbed to regulatory capture, a condition in which industries most affected by regulation exert a disproportionately large amount of influence over the regulatory bodies meant to keep them in check.[18] Aside from the harm this bias toward rapid development does to responsible land use planning, the situation can also have a detrimental effect on the economic growth of the island, and even on real estate developers themselves.[19] Agency officials' current favoritism toward developers is largely a result of the pro-development Governor's ability to place sympathetic officials in key agencies. Likewise, the future election of a populist, anti-development Governor could result in a sharp reversal of fortunes and a chilling effect on development. Additionally, the Fortuño administration seems to have overlooked the fact that the NEC in its natural state is both an ecological haven and a tourist attraction that cannot be replicated elsewhere, which makes it an integral asset to the long-term viability of Puerto Rico's tourism industry. In the long run, political instability and unpredictable development policies satisfy neither the environmentalist nor the real estate developer.

Such has largely been the experience of Puerto Rico's land use planning process–repeated attempts at solidifying a predictable land use scheme have been frustrated by countless exceptions and orders circumventing the process.[20] Furthermore,

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Liquid Challenges:

Contested Water in Central Asia

*by Christine Bichsel**

Introduction

With the disintegration of the Soviet Union in 1991, the two large river systems of the Syr Darya and the Amu Darya were no longer situated within one state, but instead transected the borders of five newly independent states: Kyrgyzstan, Kazakhstan, Uzbekistan, Tajikistan, and Turkmenistan.[1] In the discourse of hydro politics, this was perceived as a geographical misfit between water and state boundaries, raising the potential for "water wars."[2] Water is a scarce resource that may be contended for by states and identity groups because it is essential for physical survival and basic for most human activities.[3] Indeed, water plays a crucial role in all five states of post-Soviet Central Asia.[4] The existing arid climate in the region limits the possibility for rain-fed agriculture and necessitates the supply of additional water.[5]

Irrigation zones have been mainly developed along the two major rivers, the Syr Darya and the Amu Darya, which drain into the Aral Sea.[6] One of the most hospitable areas to irrigated agriculture in Central Asia is the Ferghana Valley, an almond-shaped intramontane basin surrounded by extensive mountain ranges.[7] United as part of the Soviet Union until 1991, the Ferghana Valley is presently divided among the three successor states Uzbekistan, Kyrgyzstan and Tajikistan.[8] It accounts for forty-five percent of the total irrigated area within the Syr Darya basin.[9] However, water in Central Asia is not only used for irrigated agriculture, but also for energy production.[10]

This article discusses conflicting claims to water in the Syr Darya basin with a specific focus on the Ferghana Valley. It traces the emergence of these claims back to Soviet water management and irrigation and explores the contentious nature of water both at the regional as well as sub-state level. It equally assesses international efforts to mitigate the potential for violence and degradation of the environment. This article also makes recommendations in three fields. First, it stresses the continued need to address water conflicts and related issues in Central Asia not solely in the technical, but also the social, economic, and political contexts. Secondly, it emphasizes the links between the work of border commissions and water conflicts, particularly those in the Ferghana Valley. Thirdly, it proposes a rethinking of blueprint approaches to water management in Central Asia, and to allow for more space for alternative conceptualizations. The article concludes with the opinion that conflicts over water in Central Asia may be driven more by particular interests of specific domestic actors in each country than by non-cooperative inter-state relations.

Map 1: The Aral Sea Basin, *courtesy of International Water Management Institute*

The Syr Darya Basin and The Ferghana Valley

The irrigation network in Soviet Central Asia received particularly large financial and technological investments after World War II.[11] This entailed not only extending and widening the major canals, but also expanding the irrigated area upwards and outwards from the plains to the foothills.[12] Built in the 1970s on the territory of Kyrgyzstan, the Toktogul reservoir was designed to support this expansion and provide seasonal and multi-year water storage in order to increase the availability

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of water for irrigation in the Uzbek and Kazakh republics, as well as to regulate the distribution of water downstream in the Syr Darya River basin.[13] As was common with reservoirs in the USSR, a hydroelectric plant was constructed at the same time, enabling the Toktogul reservoir to generate hydropower in conjunction with its water management function.[14]

The Soviet Union, like the Russian Empire before it, encouraged cotton production in Central Asia to satisfy the demand of the domestic textile industry.[15] The Soviet Union therefore fervently pressed this water-intensive crop on the agriculturally and ecologically suitable lowlands of the Uzbek and Tajik republics, as well as further downstream in the Kazakh republic.[16] There, the Soviet Union developed irrigation and drainage projects primarily to increase cotton production in these lowland republics, which facilitated the rise in cotton production from 4.3 million tons in 1960 to approximately 10 to 11 tons in 1990.[17] With cotton being a strategic priority, Soviet leaders designated the lion's share of the Syr Darya river's flow to cotton production in the lowlands.[18] Conversely, Soviet planners resolved that the strategic priority in the Kyrgyz republic was animal husbandry with a focus on meat and milk products, as well as growing rainfed fodder.[19] The energy needs of the Kyrgyz Republic were met by importing electricity and/or natural gas, coal, and oil for its thermal power plants from the downstream Central Asian and other Soviet republics.[20] Thanks to these arrangements, the Toktogul reservoir, as part of a highly integrated network, became the key element in large scale cotton growing in Uzbekistan and Tajikistan. [21]

With the disintegration of the Soviet Union in 1991, the formerly integrated scheme of economic management collapsed.[22] Each of the five newly-independent Central Asian states was left to restructure the previously centralized water management system.[23] The Soviet Union left behind a highly integrated network of large irrigation canals and reservoirs, which was parceled out among its successor states.[24] This sudden transition meant that Kyrgyzstan, Tajikistan, Uzbekistan, and Kazakhstan were now individually responsible for managing the Syr Darya's water.[25] Moreover, these countries had to face the environmental consequences of Soviet irrigation practices.[26] During the 1970s it became apparent that the massive Soviet investments had not increased the efficiency of water use in Central Asia.[27] Rather, infrastructure problems actually led to huge water losses and inappropriate irrigation practices caused excessive application of water to the fields.[28] These problems culminated in the well-publicized disaster of the Aral Sea, which suffered decrease in water levels, substantial pollution, and increased salinity as a result of heavy water diversion for irrigation and poor water management policies.[29] Finally, although ample funds had been devoted to the construction of an irrigation infrastructure, little was spent on maintaining it.[30] Thus, by the early 1990s when these countries became independent large parts of the irrigation networks in Central Asia were already in need of repair.[31]

Accordingly, independence necessitated the subsequent establishment of new water management organizations, at both a domestic and inter-state level.[32] Each country established its own ministries and departments to supervise water resources.[33] These new, individualized ministries retained many of the Soviet organizational structures, yet faced drastically reduced funding.[34] The resulting water management organizations suffered from declining salary pools, shrunken operating budgets, and little money for equipment.[35] These difficulties, along with concerns over the efficiency of water usage, prompted the new states to introduce cost recovery measures, and shift the ownership of tertiary irrigation infrastructures to local water users as a way to increase their rights and responsibilities.[36]

The end of the centralized Soviet system of water management also necessitated new agreements among the new Central Asian states to regulate the Syr Darya and Amu Darya Rivers.[37] The Almaty Agreement of 1992 established the Interstate Commission for Water Coordination ("ICWC") as the highest decision-making body for all matters pertaining to the regulation, efficient use, and protection of interstate watercourses and bodies of water in Central Asia.[38] The ICWC consists of leading water officials from each of the five countries, who met several times annually to set allocations and quotas as well as resolve disputes.[39] From this commission a number of additional agreements emerged, some of them pertaining to all Central Asia and others to specific rivers.[40] On the Syr Darya River, annual agreements were reached in 1995 and subsequent years among riparian states concerning the allocation of water and energy.[41] In 1998, Kyrgyzstan, Kazakhstan and Uzbekistan concluded a watercourse-specific agreement on the use of the water and energy resources of the Syr Darya River, thus folding earlier annual agreements into the new Syr Darya Framework Agreement.[42] Tajikistan joined this agreement in 1999.[43] Thus, while the countries retained national control over crops, industrial goods, and electric power generated by their use, they also worked with one another to manage available water resources. [44]

Contested Links Between Water, Energy and Political Independence

Neither the processes of domestic reform nor inter-state negotiations have been smooth or predictable as disputes over how to distribute shared water resources have arisen. The first major conflict regarding the seasonal distribution of water across the Ferghana Valley involves the operation of the Toktogul reservoir and hydroelectric plant.[45] The disintegration of the Soviet Union placed great stress on the existing system of inter-republican compensation for water and energy.[46] The newly independent downstream countries experienced difficulties consistently providing cheap gas for Kyrganstan, and ultimately raised prices.[47] Unable to purchase enough gas to generate its thermal power plants, Kyrgyzstan experienced chronic electrical outages during the winter, and in the early 1990s began to release more water from the Toktogul reservoir during that season to drive its hydroelectric generators.48 But by providing for its own heating and lighting needs in winter, Kyrgyzstan reduces the quantity of water available to downstream Uzbekistan for irrigating its sector of the Ferghana Valley in the spring and summer.[49] And since a limited quantity of water can be retained in facilities such as the Kairakkum reservoir, Kyrgyzstan's release of water in the

wintertime have repeatedly flooded these downstream areas.[50] Uzbekistan often complains about the damage caused by winter flooding, demanding that water should be released mainly in summer so as to prevent flooding and sustain irrigated crops.[51]

A second dispute concerns the economic value of water provided across national borders. Since its independence, Kyrgyzstan has been neither willing nor able to assume the total financial burden of operating and maintaining the Toktogul dam and hydroelectric station nor willing to take actions to regulate the flow of water into the Naryn River and, accordingly, the flow into the Syr Darya.[52] Kyrgyzstan therefore seeks compensation from the downstream countries.[53] The annual cost to Kyrgyzstan of maintaining the Toktogul reservoir and its related infrastructure amounts to an estimated $15 to $27 million.[54] Until 2002, however, Uzbekistan and Kazakhstan did not contribute to the cost of maintaining and operating this facility.[55] Rising gas prices and the shift to a more market-oriented economy have prompted Kyrgyzstan's lawmakers to re-evaluate the value of water as a resource.[56] They argue that the Syr Darya waters flowing from Kyrgyzstan bring considerable economic benefit to the downstream countries via irrigated agriculture.[57] Therefore, they seek to place a specific value or price on water and to charge its users for what they receive from Kyrgyzstan.[58] Uzbekistan has, to date, been critical of this idea, questioning whether any country can actually own water and whether the water supply should be treated as an economic commodity.[59] Moreover, it asserts that because Kyrgyzstan provides no "value added" to the water flowing from its territory, it is hardly justified in asking for financial compensation.[60]

A third point of contention concerns the apportionment of water from the Syr Darya River and the quantity to which the respective riparian countries are entitled. Kyrgyzstan contests the old Soviet inter-republican quotas, which designated the lion's share of the Syr Darya's water to Uzbekistan and Kazakhstan.[61] With the 1992 Almaty Agreement on Water Resources, the new states confirmed that they would continue to observe the existing quotas for the time being, but did not detail the possibility of later changes.[62] The Agreement assigned 51.7 percent of the river flow to Uzbekistan, 38.1 percent to Kazakhstan, 9.2 percent to Tajikistan and only 1 percent to Kyrgyzstan.[63] The Kyrgyz claim is that this arrangement effectively barred them from developing irrigated agriculture during the Soviet period and denied them the economic benefit that would have come from development.[64] Kyrgyzstan, therefore, now seeks to correct what it sees as a historical injustice by claiming enough water to develop self-sustaining and market-based irrigated agriculture.[65] However, this runs in direct conflict with plans by Uzbekistan, Kazakhstan and Tajikistan, all of which seek to expand and modernize their own irrigated agriculture.[66]

At present, the outlined disagreements have resulted in plans to build new dams and to deal with the accompanying or resulting controversies. Among many smaller dam building projects in Central Asia, Kyrgyzstan and Tajikistan are each attempting to resume the construction of large reservoirs designed in the 1960s and 1970s and partly constructed in the 1980s.[67] In Kyrgyzstan, the two Kambar-Ata dam structures are planned upstream of the Toktogul reservoir on the Naryn River.[68] These dams would allow electricity production during winter, while saving water in the Toktogul reservoir for downstream irrigation purposes in the summer.[69] Moreover, since the necessary grid is already in place, the hydropower complex could generate surplus electricity for exportation.[70] However, there are doubts about the financial viability and environmental impacts of the project, one being that climate change-induced glacial melt and projected reduced water flow could render the structure obsolete within a generation.[71] Kambar-Ata I and II are estimated to cost around $3 billion, a significant investment which Kyrgyzstan is unlikely to assume.[72] So far, possible investors, including Russia, have been hesitant to invest.[73] Questions of political stability aside, this may also be due to Uzbekistan's firm opposition to the project, objecting, among other issues, to the increased control Kyrgyzstan would acquire over the Syr Darya River flow.[74]

The Rogun dam in Tajikistan is a similar project with comparable goals to regulate water usage and release of the Amu Darya River.[75] Its original purpose was to guarantee sufficient water supply during water-scarce years for users in the Amu Darya basin, an area that suffers from a greater lack of regulation than the Syr Darya River.[76] The Soviets never completed the project due to the USSR's collapse that delayed construction in 1992 but if completed, the large hydropower plant and enormous water reservoir to be situated on the Vaksh River, a tributary of the Amu Darya River, will provide yearly water runoff regulation of the Amu Darya.[77] This goal is aided by the fact that the Rogun River is not followed by a downstream reservoir, which would likely affect the flow of the Amu Darya directly.[78] However, the Rogun Dam has significant hurdles to overcome before it can become a reality as the huge financial investment needed to resume and complete the construction has not yet been secured.[79] Once operational, Rogun is expected to cover as much as eighty percent of Tajikistan's average energy consumption and even offers opportunities for exporting electricity.[80] However, Uzbekistan has raised opposition toward the dam, listing concerns about reduced downstream water availability and dam safety.[81] Downstream countries are particularly worried about water availability during the one to two decades in which the reservoir would need to be filled.[82] Moreover, downstream nations and communities stress the future risks of the dam, as Rogun is situated in a seismically active area near a geological fault line.[83] A potentially sudden outflow of such a large scale could have disastrous consequences for downstream riparian zones.[84]

Inter-Group Conflicts Over Water and Land

Thus far, the focus of disputes over water and energy has been among the successor states following the disintegration of the Soviet Union. However, no less serious tensions over water can arise *within* states.[85] With regard to conflicts over water, Eric Sievers, a Harvard University Russian and Eurasian scholar, writes that, "As the Syr Darya basin contains the Ferghana Valley, which is the most sensitive part of modern Central Asia in terms of ethnic violence, it presents a special case of conflict."[86] He

suggests that water scarcity and strained inter-ethnic relations could lead to violent conflict.[87] Indeed, many water users have faced declining access to water and greater uncertainties over its delivery after independence.[88] The changing seasonal patterns of water distribution and the effects of the inefficient and dilapidated infrastructure have negatively affected the situation.[89] Moreover, as the population continues to grow, there will be a further increase of pressure on water, land, and other natural resources.[90] Finally, as Sievers suggests, parts of the Ferghana Valley experienced a rapid social and economic decline following independence, which, if accelerated, could spur violence among a population overwhelmingly dependent on irrigated agriculture.[91]

Conflicts over water distribution are a frequent occurrence in the irrigated sections of the Ferghana Valley.[92] On the southern side of the valley, tensions tend to emerge in springtime when the beginning of the agricultural season brings a high water demand but the flow of the glacier-fed rivers has not yet filled irrigation canals to meet that demand.[93] Since most of the Ferghana Valley irrigation systems are gravity-operated, nearly all conflicts occur between upstream and downstream users.[94] A more erratic post-independence water supply has accentuated differences in access to water between upstream and downstream users and has increased competition for water during the springtime.[95] As a result, conflict parties form along territorial or residential affiliation rather than ethnic or kinship lines, although these categories frequently overlap.[96]

Water sources are contested particularly when rivers or canals transect the new international borders and are thus subject to inter-state agreements.[97] In the southern part of the Ferghana Valley this has entailed revising the allocation of water from several rivers and springs.[98] For example, during the Soviet period sixty-nine percent of the Shakhimardan Sai River's flow was allocated to the Uzbek Socialist Soviet Republic SSR, as compared with twenty-one percent for the Kyrgyz SSR (plus ten percent "water losses").[99] After the disintegration of the Soviet Union, Kyrgyzstan claimed, and sometimes simply appropriated, more water for itself.[100] Finally, in 2001 the Departments of Water Resources in Kyrgyzstan and Uzbekistan agreed that the water of the river should be divided equally between them.[101] Similar claims have been made on other rivers and sources, with several of them ending in allocation agreements.[102] These changed allocations that benefit upstream users have left downstream users discontent over their reduced water supply.[103] It is tempting to attribute these conflicts to the inevitable disputes arising out of new inter-state borders, however, it is at least as valid to suggest that they should be understood as the fallout from long-term economic shifts that are occurring in the region, the character and final dimensions of which are not yet fully evident.

As a general rule, Uzbek and Tajik groups in the Ferghana plains have a much longer history of agricultural production and sedentary lifestyles than the Kyrgyz, most of whom practiced animal husbandry and pursued a nomadic or transhumant existence in the foothills and premontane zones.[104] However, without clear-cut boundaries between them, there were constant interactions between these modes of production and lifestyle. [105] But with the 1924 Soviet national-territorial delimitation, these socio-economic distinctions became territorialized.[106] They served as a basis for establishing the political-administrative divisions of the Ferghana Valley in the Uzbek, Tajik, and Kyrgyz SSRs.[107] The borderlines of the Ferghana Valley represented not only the territory of newly established Soviet nationalities, but to some extent follow the territorial distinction between different socio-economic practices such as irrigated agriculture and animal husbandry.[108]

Initially, Soviet regional economic specialization enhanced these territorialized socio-economic distinctions. For example, specialization fostered irrigated agriculture in the form of cotton production in the Uzbek SSR and animal husbandry in the form of meat and milk production in the Kyrgyz SSR.[109] Later, however, Soviet actions undermined specialization. The effort to relocate and permanently resettle nomadic populations as well as the expansion of irrigated agriculture zones into the foothills had precisely this effect.[110] With independence, the disintegration of the big state farms that produced meat and milk in the Kyrgyz sector, and the subsequent privatization of land, led many Kyrgyz to turn to private agriculture for their livelihood.[111] Today, Kyrgyz, Uzbeks, and Tajiks in the foothills practice both animal husbandry and agriculture.[112] This has had the effect of further increasing the demand for both land and water in the foothills of the Ferghana Valley.[113]

This shift in resettlement created new claims for water and land in the foothills of the Ferghana Valley, with the competing interests drawn along geographic zones, economic classes, and ethnic distinctions.[114] Thus, conflicts over water and land are also driven by territorial claims to the Ferghana Valley.[115] Although the current de facto borderline is unlikely to undergo major changes resulting from delimitation, many areas on the border are still contested among the three countries.[116] Ultimately, the form of land use and the identities of the people using a specific section may influence decisions on the borderline.[117] A consequence of national-territorial delimitation is conflicting territorial claims among the new countries.[118] These tensions tend to be especially concentrated in the irrigation systems in the foothills.[119] While such claims have existed throughout the Soviet period, they acquired a new dimension with the post-independence nation-building processes. [120]

International Involvement

Immediately after the Central Asian countries gained their independence in 1991, a large number of international aid agencies rushed into the region with projects and funding.[121] A prime concern of early international engagement was to avoid violent conflict among new states over water and to instead seek more cooperative modes of engagement.[122] A further concern was the shrinking of the Aral Sea and its adverse impact on the people and the environment.[123] With a growing emphasis on agriculture, an increased need for irrigation and a wasteful water distribution infrastructure caused[124] the water levels in the Aral Sea to drop between thirteen and eighteen meters since 1960.[125] Combined

with salinity levels eight times higher than they were in 1960 and over 400,000 kilometers of land lost to heavy pollution, the Aral Sea garnered much attention.[126] Efforts were geared toward mitigating the disaster as well as protecting the environment for the future.[127] This meant reducing the draw of water for agriculture from the Amu Darya and Syr Darya Rivers by rehabilitating infrastructure and instituting water-saving irrigation practices.[128] It also meant finding more efficient means of using water, including the institution of some sort of pricing mechanism.[129] Finally, international institutions criticized Soviet top-down approaches that had reduced farmers—or farm workers, as it were—to the status of passive implementers of decisions rather than entrusting them with responsibility for their own water use.[130] Instead, international groups opted for decentralization in water management and supported the granting of a high degree of self-governance to water users.[131]

Efforts to rectify the Aral Sea environmental disaster led directly to the formulation of inter-state initiatives for the improvement of water management in Central Asia as a whole.[132] The well-publicized disaster generated large funds and a multitude of projects from multilateral agencies, bilateral donors, and private foundations.[133] Spearheading these projects from the outset were the World Bank, the United Nations Development Programme ("UNDP"), the European Union ("EU"), and the United States Agency for International Development ("USAID").[134] To different degrees, each of these organizations conducted scientific assessments, produced management plans, initiated conservation schemes, and held inter-state negotiations to improve the water regulation and ecological condition of the Aral Sea.[135]

Opinions differ on what all this work and funding actually accomplished.[136] Several agreements were reached on the management of water in the Syr Darya basin and the institutions established to implement them.[137] However, the actual allocations of water remain hostage to yearly barter agreements among the states.[138] Moreover, while the ecological condition of the Aral Sea region has been improved, it remains unlikely that this body of water will ever be restored to its pre-1960s level.[139] Among the many explanations for these outcomes, two warrant thorough consideration. One is that nearly all the inter-state negotiations sponsored by international agencies focused on the nexus of water and energy, but devoted insufficient attention to agriculture.[140] As a result, parties ignored environmental issues in the Syr Darya basin that were caused by water-intensive production and other critical agricultural policies.[141] Second, many of the international funders and agencies were not organized enough to assure substantial outcomes, while the local actors with whom they interacted lacked commitment to the projects and offered only hollow promises.[142]

Additionally, international involvement with water management in Central Asia has focused on promoting reform along the lines of Integrated Water Resource Management ("IWRM"), usually coupled with the rehabilitation of infrastructure.[143] In the Ferghana Valley, for example, the Swiss Agency for Development and Cooperation has run an IWRM project in cooperation with the ICWC since 2001.[144] The aim of the project was to improve and reorganize the institutional arrangements for water management.[145] This included the restructuring of water management on the basis of hydrological rather than administrative boundaries, and increasing farmers' participation in decision-making.[146] The project was joined by an effort towards Canal Automation, which would automate the measurement of water flows and the transmission of data.[147] More generally, international funders and organizations have been involved in decentralizing irrigation management along the lines of IWRM have established Water User Associations ("WUAs"). Major donor organizations promoting this work include the World Bank and Asian Development Bank in Kyrgyzstan, USAID in Uzbekistan and Kazakhstan, and the World Bank in Tajikistan. [148]

Irrigation reform based on IWRM principles altered the structure of water management in Central Asia. For example, International donors have established a large number of WUAs and introduced water service fees in Central Asia.[149] Considerable progress has recently been made to actually collect water fees, a process which was initially under-enforced.[150] Nonetheless, shortcomings remain.[151] WUAs usually enjoy little legitimacy in the irrigation communities in which they operate, exert limited influence on the actual distribution of water compared to informal authorities, and are frequently misunderstood as an arm of the state instead of representatives of local communities.[152] Yet it remains unclear who is to blame for these shortcomings. Dr. Jenniver Sehring, a policy associate at Ecologic Institute, has analyzed the irrigation reforms in Kyrgyzstan and Tajikistan, finding that WUAs themselves must bear responsibility for their modest impact on the distribution of water.[153] Thus, the WUAs' failures stem from their faulty implementation.

IWRM is a prescriptive concept predicated on the belief that democratic governance is good governance.[154] IWRM is based on a market economy and democratic governance inspired by neo-liberal thinking and assumes that the conditions for such governance are already in place.[155] As a consequence, IWRM is "politically blind" to the actual political economy and power relations which exist in the Ferghana Valley, especially in Tajikistan and Uzbekistan.[156] It is questionable whether the IWRM goals of economic decentralization, self-government, and empowerment of water users can ever be achieved within strongly centralized governance systems.

At present, another major organization in Central Asian water relations is the bilateral donor Deutsche Gesellschaft für Internationale Zusammenarbeit ("GIZ").[157] GIZ is commissioned by the German Federal Foreign Office to run the program "Transboundary Water Management in Central Asia" during the period of 2009-2011, targeting all five countries of the region.[158] The program aims to enhance the expertise and capacity of supra-state water management institutions and the International Fund for the Aral Sea ("IFAS").[159] An additional focus is on the improvement of management by river basin organizations situated on selected cross-border rivers.[160] GIZ approaches these issues with the advisory support of experts, the training of personnel, and the creation and facilitation of forums to foster

interdisciplinary and cross-regional exchange.[161] GIZ also provides funds for technical equipment, refurbishment of irrigation infrastructure, demonstration facilities, and small hydroelectric plants.[162]

Policy Recommendations

Irrigated agriculture is likely to continue to play a major role in Central Asia, particularly in the Ferghana Valley.[163] It remains the source of people's livelihoods and the backbone of the economies of Uzbekistan, Tajikistan, and of Kyrgyzstan, especially because of the water-energy nexus.[164] Desertification of the Aral Sea basin remains a critical issue affecting all Central Asian countries.[165] Although largely a result of poor Soviet management, like water diversion schemes, the Aral Sea basin remains a major environmental concern and an area of political contention.[166] In the coming years, the possible restoration of infrastructure and the correction of existing flaws remain a daunting challenge due to the social and economic concerns.[167] Constructing and maintaining a viable water management infrastructure will be a critical step towards mitigating the tension over water as the expansion of agriculture further forces nations to secure their own water needs even at the expense of a neighboring country.[168] Estimates from scholars Dukhovny and Sokolov show the cost of such repairs throughout the Aral Sea basin would reach $16 billion.[169] Still, this figure does not include the cost of applying water-saving technologies or adding new hydropower complexes.[170]

Identifying sources of such large investments will be a major challenge that cannot be borne by the Central Asian states alone.[171] Moreover, while the updating of irrigation systems is seemingly a matter of technical considerations, the physical, economic, and legal configuration of such systems are also shaped by the character of property rights and user relations.[172] Any effective step towards improving and expanding irrigation systems in the Ferghana Valley must address the social and political challenges relating to irrigated agriculture. Decisions on what form of irrigated agriculture are economically viable, environmentally sustainable, and ethically acceptable in the Ferghana Valley should be the result of social negotiation. Furthermore, that negotiation requires considering both the existing political economies and the needs of people's livelihoods.

As outlined above, the dilapidated infrastructural heritage of the late Soviet period has left huge problems which must be addressed. Water is limited in the Ferghana Valley and might become even scarcer in the Syr Darya basin over time due to climate change and population increase.[173] Moreover, these concerns are at the same time bound up with state territorialization and the construction of new collective identities.[174] Yet, the evidence presented above suggests that the core conflicts over land and water do not trace back to any inherent ethnic animosities, but to the to the economic and social modes that define the lives of each group.[175] This becomes particularly relevant as the ongoing processes of state-building foster new economic and moral attachments. Therefore, the decision of the bilateral and tripartite border commissions involving Kyrgyzstan, Uzbekistan, and Tajikistan on the final delimitation and demarcation of the Ferghana Valley will have a decisive impact on these conflicts.[176] However, the border commissions have not yet finished their work and the process is likely to be slow at best.[177] The historical changes of these borders and their linkages with the spatial layout irrigation infrastructure must be taken into account if conflict over water is to be addressed.

International actors have been engaged with water and ecological issues in the Ferghana Valley for fifteen years, and they are likely to continue such work in the future.[178] Large sums have been invested, but limited results have been attained.[179] This is partly the result of the normal work constraints of the involved international agencies. However, involvement has largely taken place within the framework of promoting neoliberal reforms leading to market economies and democratic politics in the region.[180] In the area of water management, the IWRM model was promoted both for its own survival and also as an indirect means of providing some kind of quid pro quo for broader governance reforms.[181] This may not always be the most productive way to resolve pressing water problems as overly normative or prescriptive approaches may divert attention from the stubborn realities on the ground. It is thus necessary to rethink approaches to water management and allow room for alternative conceptualizations.

Conclusion

Yearly barter agreements remain the central mechanism to determine water and energy transfers between upstream and downstream countries.[182] Again, it is important to note that they do not only result from interstate relations characterized by an uncooperative mode, but also from the domestic politics in the respective states.[183] Currently Kyrgyzstan is still cash-strapped and, thus, limited in acquiring energy carriers from abroad.[184] Kyrygyzstan's inevitable need for heating during cold winters, and the government's inability to provide sufficient electricity, is likely to give rise to public discontent and political unrest.[185] Operating the Toktogul reservoir to generate hydropower in wintertime, therefore, is an urgent political and economic concern of the government of Kyrgyzstan.[186] A similar logic applies to Kyrgyzstan and Tajikistan interests in the construction of Kambar-Ata and Rogun dams as well as hydropower plants. Beyond solving perennial power shortages, both countries also hope to export electricity to Central Asia and neighbors and, thus, become regional energy suppliers.[187]

Conversely, political elites in Uzbekistan, and to some extent Tajikistan, rely on cotton production in the Ferghana Valley to generate income and to support the existing system of social, political, and economic control.[188] This partly accounts for leaders' unwillingness to change to less water-intensive crops in the Ferghana Valley.[189] Furthermore, any related economic change may not sustain the existing, cotton reliant systems, which are based on exploitation and rent-seeking.[190] Thus, the annual ad hoc barter agreements on the use of Syr Darya's water may be less the result of inter-state cooperation and more the result of the conflicting political interests of domestic actors within each country.

Addressing the challenges in Central Asia requires the reassessment of domestic and regional policies, including improvement to the water management infrastructure of the Aral Sea basin. Additionally, any improvements to, or expansion of, the irrigation systems in the Ferghana Valley must first consider the social and political challenges relating to irrigated agriculture. International actors need to consider alternative approaches to water management outside of the prevailing neo-liberal reforms. Only by assessing the spatial layout of watercourses and irrigation infrastructure can resource management effectively avert conflicts over water and land in Central Asia.

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A Case for the United States' Opposition of International and Domestic Coal Subsidies

*by Josh Fieldstone**

Since the United Nations' Framework Convention on Climate Change[1] came into effect in 1994, international financial institutions have provided more than $37 billion in direct financial support for at least 88 new and expanded coal plants.[2] Although the United States has stated that it wants to deter international financial institutions from subsidizing coal,[3] it supports its vast domestic coal subsidies.[4] So long as these subsidies remain, the United States should refrain from opposing international coal subsidies in order to maintain its credibility.[5] The United States faces the following dilemma: it could either actively oppose domestic and international coal subsidies even though the subsidies are in its short-term energy interest, or it could continue supporting coal subsidies despite coal's long-term damaging effect on the environment and human health. The United States should prioritize public health and environmental interests and oppose all coal subsidies domestically and internationally. Specifically, it should begin by withdrawing tax credits for domestic coal production and pressure the World Bank to stop funding coal projects internationally.

International financial institutions have continued to finance coal projects despite the emergence of climate change as a major international issue.[6] Meanwhile, the United States refrained from applying political pressure to curb such financing. In 2010, the International Bank for Reconstruction and Development ("IBRD"), one of five institutions that compose the World Bank Group, funded a record high $4.4 billion for coal projects[7] in the face of both substantial protests[8] and a recommendation by the World Bank's Extractive Industries Review to refrain from financing coal.[9] The United States Executive Director abstained from voting on—and using its substantial political clout[10] to oppose—the largest of the projects,[11] a $3 billion loan to a South African coal-fired power plant.[12] However, if the United States takes a more active stance against coal projects, it could send a stronger message of opposition to international institutions that fund coal, in which the United States is involved, including the Inter-American Development Bank[13] and the African Development Bank.[14]

The United States has not only refrained from opposing international financial institutions' funding of coal, it has also continued subsidizing coal domestically. A great percentage of these domestic subsidies come from the Internal Revenue Code Section 45k[15] credit for production of nonconventional fuels.[16] This tax credit amounted to a $14 billion subsidy between 2002 and 2008, which has primarily benefited coal producers.[17] In addition to tax credits, the United States' subsidies for coal include low-interest loans[18] and loan guarantees.[19]

The United States has a strong incentive to promote coal subsidies because it has substantial short-term interest in maintaining—and even expanding—its present coal use to reduce energy costs and unemployment.[20] The United States has more coal reserves than anywhere else in the world and is the second largest producer after China.[21] In 2009, coal mines alone employed 90,000 people in the United States.[22] Coal can generate usable energy at a cost between $1 and $2 per Million Metric British Thermal Units ("MMBtu") compared to $6 to $12 per MMBtu for oil and natural gas, providing an inexpensive and relatively stable energy source.[23] Additionally fifty percent of electricity generation in the United States is dependant on coal, illustrating both the United States' interest in coal use and the importance of its domestic coal policy.[24]

Even though the United States' short term interests favor coal subsidies, its long term interest are against them. Some of the downsides of coal use are immediately tangible such as harm to the environment[25] and health hazards to those working at coal facilities.[26] Still, perhaps the most pressing concern is its effect on climate change.[27] A recent study of Harvard's Center for Health and the Global Environment found that the total external cost—the negative effect of an economic activity on a third party—of United States' coal-use[28] could amount to $523 billion annually.[29] The National Resource Council found the external costs to be $120 billion even without generally taking coal's effect on climate change into account.[30]

In light of these long-term realities, the United Sates should oppose coal subsidies domestically by terminating the tax credit for production of nonconventional fuels and internationally by pressuring the IBRD to refrain from giving any further loans to coal projects. By subsidizing coal now and leaving the greater cost of externalities for the future, the United States is supporting an economically and socially irresponsible position. Ending the existing tax credit and pressuring the IBRD would help mitigate coal's effect on climate change, catapult the United States as a credible leader on the climate change debate, and protect the United States from the predicted economic losses that far outweigh its current problems.

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Natural Resource "Conflicts" in the U.S. Southwest: A Story of Hype over Substance

*by Laura Peterson, Jay C. Lininger, Marty Bergoffen, Bill Snape, and Curt Bradley**

Introduction

Environmental laws and the ecosystems they support are under attack. Intermittently since the Reagan administration and increasingly since the 2008 economic collapse, certain politicians and their industry sponsors have inundated the media with angry rhetoric, blaming historic job losses on "overregulation."[1] Environmental laws are a frequent target of these politicians who often benefit from contributions supplied by the fossil fuel and mining industries.[2] Ignoring the successes of these laws—cleaner air, cleaner water, and recovering imperiled wild species and habitat—they claim that environmental regulations are "job killers."[3] Reflecting the success of these claims, the recent House Fiscal Year 2012 Interior and Environment spending bill contained forty-two proposed anti-environmental riders. These riders range from limiting the Environmental Protection Agency's ability to curb carbon emissions[4] to blocking the U.S. Fish and Wildlife Service's ability to list new threatened and endangered species.[5]

In the midst of these attacks, the Endangered Species Act ("ESA")—an act President Nixon signed in 1973 with the enormous popular support of the American people—has become a target for repeal.[6] A bedrock environmental law, the ESA protects both imperiled species and the habitat necessary for those vulnerable species to survive.[7] Capitalizing on widespread economic anxieties, opponents of industry regulation have proposed legislation to undermine the ESA and block the listing of threatened and endangered species.[8] Sometimes based on more hyperbole than fact, these opponents promote the false belief that resource development and environmental protection are mutually exclusive. Some industry supporters argue that jobs would be created if the government opened up protected lands for private use,[9] and that increased regulation may block development and destroy jobs, leading to further economic depression.[10] Such attacks on the ESA characterize the issue as a tradeoff between the economy and the environment, claiming that the government must choose between using scarce natural resources to protect wildlife or help the economy.[11] In the current climate of economic distress, these arguments, regardless of their truth, are particularly effective. Whenever environmental protections are proposed or enforced, industry proponents predictably forecast dire economic consequences.[12] However, these gloomy predictions rarely materialize.[13] There is no stark dichotomy of economy versus the environment when it comes to developing natural resources; the issues are much more nuanced. Overblown rhetoric about environmental regulation obstruct the public's access to open and honest debate about the best uses for scarce natural resources.

Figure 1: Dunes Sagebrush Lizard Distribution, 2010

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Controversy in the Permian Basin

The American Southwest, which is itself an intersection of diverse cultures, ecosystems, and political ideologies, is the on the front line for the cutting-edge natural resource battles of the early 21st Century.[14] The Permian Basin in southeast New Mexico and west Texas is the focus of the latest and most serious attacks on the ESA (*See* Figure 1). The Permian Basin is an area of great economic and ecological significance. It is one of the largest domestic producers of fossil fuel in the United States, providing seventeen percent of the nation's domestic crude oil.[15] In 2004, the Permian Basin produced about 841,000 barrels of oil per day.[16] In addition to oil and gas extraction, the Permian Basin is home to significant agricultural interests, producing both food crops and grazing livestock.[17] While these activities are important for the region's economy, they also have a significant effect on wildlife.[18] The lesser prairie chicken and the dunes sagebrush lizard are particularly vulnerable to these industrial activities that are destroying their diminishing habitats.[19] Their habitats and populations have been declining steadily for decades and their survival depends on protection under the ESA.[20]

As a result of their population decline, these two species are now candidates for listing under the ESA.[21] If approved, their listing would trigger certain protections for both the species and their habitats.[22] However, opponents argue that listing these imperiled species would virtually shut down oil and gas drilling and inhibit agricultural production, both of which are bases of the local economy.[23] These opponents argue that public resources should be dedicated to economic development to benefit workers rather than protecting environmental resources.[24] Responding to these claims, local members of Congress have spearheaded legislation that would preclude listing the dunes sagebrush lizard and lesser prairie chicken, regardless of the scientific merit of protecting them as endangered species.[25]

This article examines the pronounced controversy over natural resources in the Permian Basin, arguing that the supposed conflict between environmental protection and resource exploitation is not as stark as many claim. Protection would have little real effect on energy development and may ultimately help the economy of the American Southwest and lead to improved land management practices.[26] To the extent that there is a real conflict over use of scarce resources, the controversy presents a much-needed opportunity for healthy dialogue about sustainable development in the region. Any actual conflict can be resolved within the existing flexible mechanisms provided in the ESA.

The Lesser Prairie Chicken

The lesser prairie chicken is a medium-sized, gray-brown member of the grouse family that lives in the short grass prairies of the American Southwest.[27] It forages for insects, leaves, and buds on the shinnery oak and sand sagebrush grasslands in limited areas of Colorado, Kansas, New Mexico, Oklahoma, and Texas.[28] While the prairie chicken is best known for the male's unique courtship displays on communal breeding grounds, it also provides the vital ecosystem service of regulating the grassland insect populations, which can cause substantial economic damage to agricultural operations.[29] Destruction of habitat is one of the primary threats to the lesser prairie chicken.[30] Since the 1800s, its range has been reduced by over 90%, and its population has declined significantly.[31] The remaining habitat faces a myriad of ongoing threats from livestock grazing, oil and gas drilling, fire suppression, deliberate poisoning of shinnery oak, and fragmentation from structural and transportation development.[32]

The lesser prairie chicken has been caught in regulatory limbo for over a decade. In 1998, the U.S. Fish and Wildlife Service ("FWS") concluded that it warranted protection as an endangered species.[33] However, it has since remained a "candidate species" with no protection while its numbers decline.[34] Now, the FWS characterizes the extinction threat to this terrestrial bird as high, ongoing, and imminent.[35] To survive and recover, the lesser prairie chicken needs protection under the ESA.

The Dunes Sagebrush Lizard

The dunes sagebrush lizard is arguably the most controversial animal in the current ESA fight. The lizard exclusively makes its home in shinnery oaks on the sand dunes of southeastern New Mexico and west Texas.[36] This habitat specialist has a limited range.[37] living under the shade of oak trees and burying itself in white sand to avoid predators and regulate its body temperature.[38]

The primary threats to the lizard stem from fossil fuel development and agricultural activities within the lizard's specialized habitat.[39] Roads, pipelines, and power lines, as well as vehicular traffic and soil compaction associated with extraction operations, have destroyed and fragmented the lizard's native environment.[40] In addition, ranchers historically used herbicides to kill the shinnery oak necessary for the lizard's survival because it is poisonous to livestock in the spring when it is budding.[41] Farmers also remove the oak to clear land for livestock grazing and crop production.[42] Killing the shinnery oak not only removes the lizard's habitat, it also destabilizes the entire dunes ecosystem.[43]

The FWS classified the dunes sagebrush lizard as a candidate for listing under the ESA in 1982.[44] As a candidate species, neither the lizard nor its habitat has received any federal protection.[45] As a result, and despite listing by the State of New Mexico as an endangered species, its habitat has decreased by forty percent since 1982.[46] This fact is particularly troubling given the direct link between the lizard's survival and the quality and quantity of the shinnery oak.[47] In 2010, after twenty-eight years, the FWS proposed to formally list the dunes sagebrush lizard as endangered under the ESA.[48] The survival of the dunes sagebrush lizard depends on its ultimate protection under the ESA. However, this protection could be undermined if federal action under the ESA is blocked by oil, gas, and agricultural interests.

Backlash over Protection Exploits Economic Fears

Based on media reports, it would seem that protecting the lesser prairie chicken and the dunes sagebrush lizard from extinction would have a significant negative impact on economic

activity in the Permian Basin.[49] Proposed ESA listings have generated virulent opposition, with some predicting dire economic scenarios in the region if these at-risk species receive protection.[50] Representative ("Rep.") Steve Pearce (R-NM) alleged that protecting the lizard would place "[m]ost of the oil and gas jobs in southeast New Mexico . . . at risk."[51] Echoing this sentiment, a Texas newspaper asserted that listing the lizard as an endangered species would put 27,000 jobs in jeopardy by severely limiting oil production.[52] Senator ("Sen.") John Cornyn (R-TX) has advanced similar claims, stating that lizard protection is just another way the federal government puts obstacles in the way of job creation.[53] These members of Congress have proposed legislation that would preclude the ability of the FWS to list either species as endangered.[54] In addition to these claims, industry has inundated the local media with claims that environmentalists are determined "to shut down the oil and gas industry in Texas."[55]

However, when the rhetoric is peeled away, these claims of imminent job loss resulting from wildlife protection have little substance. Instead, protection of at-risk wildlife would arguably have little or no effect on continued fossil fuel extraction in the Permian Basin.[56] A recent study on the impact of listing the dunes sagebrush lizard on oil and gas activities in New Mexico shows that claims of economic calamity are overblown.[57] The dunes sagebrush lizard's potentially suitable habitat covers only 600,000 acres—less than one percent of all oil and gas lands in the Permian Basin.[58] The study examined the leasing activity from January 2010 to July 2011 of the Bureau of Land Management ("BLM") Pecos District, which manages most of the land in the animal's range in New Mexico.[59] Instead of the consequences purported the media, the study shows that lizard protection will have almost no effect on oil and gas activity.[60] Only five percent (2,920 acres) of 52,874 acres offered for lease in New Mexico are habitat for the lizard.[61] Moreover, only fifteen percent (3,484 acres) of 22,383 acres where BLM proposed leases in the second half of 2011 were lizard habitat.[62] The Permian Basin Petroleum Association claims that lizard protection "would shut down drilling activity for a minimum of two and as many as five years" while the FWS determines whether listing is warranted.[63] On the contrary, BLM will defer leasing of only 560 acres—less than one percent of lands proposed for oil and gas development during the study period—to conserve habitat for the animal.[64] Further, leases offered by BLM during the study period outnumbered those purchased by oil and gas companies, indicating a market surplus.[65] Additionally, in Texas, the state comptroller and land commissioner jointly found that only three percent of the 197,606 acres of dunes sagebrush lizard habitat overlaps developable oil and gas land.[66]

Instead of shutting down all oil and gas activities in the Permian Basin, protecting the dunes sagebrush lizard and its habitat would affect only a miniscule portion of lands that the oil and gas industry wishes to exploit in the Permian Basin.[67] Given the current surplus of leasing opportunities on public land in New Mexico alone, listing the lizard would have little effect on oil and gas activities in the Permian Basin.[68]

The ESA Provides the Flexibility to Deal with Conflicts that Arise

This article does not deny the existence of conflict over natural resource development in the American Southwest or that the ESA can inhibit resource development. The ESA does and should prevent development in certain circumstances. However, to the extent that conflicts about the use of natural resources in the Permian Basin exist, the ESA provides flexible mechanisms to minimize the economic impacts of wildlife protection.

The ESA requires public involvement and recognition of competing interests when the FWS considers protection of at-risk species.[69] The ESA is flexible: it either mandates or allows socio-economic considerations at nearly every stage of the process including designation of critical habitat,[70] consultation with federal action agencies,[71] recovery planning,[72] and prohibition against "take"[73] (i.e., harm or harassment of endangered species).[74] The act provides ample opportunity for public involvement and for provision of information on listing decisions and critical habitat determinations.

The decision to list an imperiled species under the ESA must take into account only "the best scientific and commercial data available" after a status review.[75] This science-based listing requirement ensures that decisions are based on the actual status of the species as opposed to politics.[76] However, the FWS does not act unilaterally.[77] Before making a determination of whether to list a species as endangered, the agency must take into account any state or local efforts to protect that species.[78] Although the FWS ultimately must base its decision to list a species only on the best available science—a requirement that is essential to prevent extinction—it must undertake extensive procedural steps to ensure that wildlife protection is accomplished through a transparent process.[79] The FWS must notify the state and local jurisdiction that might be affected by the listing decision.[80] If it decides that listing is warranted, the FWS must conduct a "status review" and solicit comments and information from the public, including industry and conservation groups, scientific experts, as well as affected state, local, tribal and federal agencies.[81] After the status review, the FWS must publish a proposed rule in the *Federal Register*, which then undergoes another public comment process and sometimes includes public hearings.[82] The FWS then incorporates the comments into a final listing rule.[83] In addition to the public review processes, listings undergo considerable internal review as well as formal, independent scientific peer review.[84]

The FWS must undertake a similarly public process when it designates critical habitat, which by law is necessary for the survival and recovery of imperiled species.[85] The FWS must consider economic impacts, the impacts on national security, as well as any other relevant impact of specifying a particular area as critical habitat.[86] The FWS can go so far as to exclude an area from critical habitat if it determines that the benefits of excluding the area outweigh the benefits of designation as long as this decision will not result in the extinction of the species.[87]

Beyond these opportunities for involvement in the decision-making process, stakeholders can minimize the impact of

regulatory protections by voluntarily entering into conservation agreements to prevent extinction of a species and potentially preclude the need for listing under the ESA.[88] Conservation agreements routinely facilitate the protection of species that are candidates for listing or are proposed to be candidates for listing.[89] They give non-federal property owners incentives to implement measures that prevent the decline of imperiled species.[90] Conservation agreements are not overly burdensome, and participants must only address the issues that they can control under their property rights.[91] Such agreements can protect populations on participants' land, restore degraded habitat, create new habitat, and promise not to take an action that would harm an at-risk population of wildlife.[92] After signing a conservation agreement, if the FWS later lists the species under the ESA, non-federal property owners may not be subject to additional use restrictions beyond those agreed to in the conservation agreement.[93] This provides landowners with valuable operational certainty in the face of potential regulation.

What is Driving the Attacks on the ESA in the Permian Basin?

Resistance to regulation by affected industries is the primary force driving attacks on the ESA. By capitalizing on widely-shared anxieties created by the current economic climate and high unemployment, industry proponents can advance a long-standing agenda to avoid new regulations and rollback existing ones.[94] Backers of industry claim that listing the chicken or the lizard will lead to regulatory uncertainty and cost jobs in rural communities.[95] However, there is little evidence to support this contention.[96] Studies show that there is little connection between supposed "regulatory uncertainty," and economic growth.[97]

Financial incentives play a significant role in the decisions of potentially affected industries. Accordingly, industry financial support of Congressional initiatives to block wildlife protection is not surprising. Rep. Pearce is largely funded by the oil, gas and agriculture industries.[98] In the 2011 to 2012 campaign cycle, the oil and gas industry was his number one industrial contributor.[99] Yates Petroleum, Mack Energy, and Exxon Mobil were included in Pearce's top five individual contributors.[100] In 2009-2010, Pearce's top contributors included Yates Petroleum, Marbob Energy, Devon Energy, Chesapeake Energy and Exxon Mobil.[101] Sen. Cornyn is similarly funded by the oil and gas industry—Exxon Mobil is his largest organizational contributor.[102] The heavy industry backing of both politicians may explain their stances on federal regulation that would financially benefit these contributors with promises of increased profits.

Blocking Wildlife Protection is Counterproductive to the Public Interest

Proposed amendments to shortcut listing the lesser prairie chicken and dunes sagebrush lizard under the ESA would exclude the public from standard ESA involvement in the decision-making process.[103] Rep. Pearce and Sen. Cornyn's proposed policy riders to appropriations bills would therefore prevent the consideration of competing interests in making decisions regarding natural resources. This result is unacceptable. A functioning democracy requires accurate information about the real implications and benefits of wildlife protection and an open and honest dialogue about the best uses for natural resources.

Creating a false dichotomy between economic development and wildlife protection is also counterproductive to the economic future of the Permian Basin. Studies show that protection of natural resources actually helps to diversify local economies and can even lead to job growth.[104]

The Pacific Northwest provides an instructive example of habitat protection improving long-term economic health.[105] Like the current controversy in the Permian Basin, there were foreboding claims in the Pacific Northwest that species protection would lead to significant job losses in the region.[106] In response to a federal court ruling temporarily banning logging on twenty-four million acres of national forest land to protect the northern spotted owl from habitat loss, the local timber industry rallied communities around predictions of a widespread economic depression.[107] Industry spokespersons stated that the ban would cost hundreds of thousands of jobs and create ghost towns throughout the region.[108] However, these predictions failed to materialize. Instead, in the decade following the temporary logging ban, the Pacific Northwest's economy outperformed the rest of the country in job and income growth.[109] The regional economy's base has continued shifting away from the logging industry and the newly-protected forests provide recreational opportunities and enhanced quality of life, drawing new businesses and mobile professionals.[110] Accordingly, protection of owl habitat directly contributed to the economic growth of the Pacific Northwest, leading to higher quality of life, higher income, and more jobs.[111]

Protecting the lesser prairie chicken and the dunes sagebrush lizard in the Permian Basin would arguably lead to similar benefits. For one, a healthy economy is linked to a healthy environment and preservation of resources.[112] From quality of life to public health to recreation and tourism, preservation of resources has a positive effect on regional economies.[113] In addition, protecting at-risk wildlife in the Permian Basin will likely have a beneficial effect on the very industries that currently seek to avoid new regulation. Preserving the shinnery oak habitat that is necessary for the survival of both species keeps sand dunes intact and prevents erosion.[114] The continued existence of the lesser prairie chicken allows that species to continue regulating the insect population in a way that could benefit agricultural interests.[115] Sustainable development of energy resources will promote the continued vitality of the region in the long term. Therefore, species protection will not only benefit these individual species, but will benefit the public at large.

Conclusion

Conflicts over the allocation of natural resources in the American Southwest are overblown, driven more likely by economic greed and political power than a rational examination of

the public interest. The economic downturn has provided a convenient opportunity for industry-backed interests to capitalize on economic fears and campaign for de-regulation of the powerful fossil fuel industry. Listing and protecting the lesser prairie chicken and the dunes sagebrush lizard under the ESA will not destroy the economy of the Southwest, nor will it stop oil and gas drilling or lead to widespread job loss. Instead, protecting these animals from extinction will uphold an honest and science-based debate of the best uses of the natural resources.

To ensure constructive dialogue about the use of natural resources, Congress and the current Administration must allow environmental laws to work. Yielding to hyperbolic rhetoric neither preserves natural resources nor aids the working people directly impacted by natural resource conservation. The goal of natural resource management must continue to be the recovery of imperiled species and their natural habitats, which remain the best gauge of healthy ecosystems and the economies upon which we ultimately depend.

Endnotes: Natural Resource "Conflicts" in the U.S. Southwest: A Story of Hype over Substance

1 *See, e.g.*, Paul Krugman, *Phony Fear Factor*, N.Y. Times, Sept. 29, 2011, http://www.nytimes.com/2011/09/30/opinion/krugman-phony-fear-factor.html?_r=3&hp (describing flawed claims that regulation is to blame for the weak economy and asserting that such claims are "pure fantasy" because there is no evidence to suggest such a connection).

2 *See, e.g., Foul Environmental Winds Blow Through D.C.*, SFGate.com, Sept. 24, 2011, http://articles.sfgate.com/2011-09-24/opinion/30196805_1_polluters-coal-burning-plants-environmental-panel. (emphasizing that GOP-backed changes would undermine clean air and water laws to help big industry polluters).

3 Many studies show that there is no truth to this claim. There is no connection between environmental regulation and job loss. *See, e.g.*, E.B. Goodstein, Econ. Policy Inst., Jobs and the Environment: the Myth of a National Trade-Off 1, 2 (1994), http://epi.3cdn.net/83dfae8d6d0c6151e1_55m6id8x6.pdf.

4 *See* H.R. 2584, 112th Cong. § 431 (2011) (requiring the EPA to stop its work limiting harmful carbon dioxide pollution from power plants and refineries for one year).

5 This sweeping "extinction rider" would have prevented the U.S. Fish & Wildlife Service from spending any money to list new species, designate critical habitat, or upgrade the status of a species from threatened to endangered. It was strongly defeated with a vote of 224-202 in favor of an amendment to strip the bill of this detrimental rider. *See* Defenders of Wildlife, Assault on Wildlife: The Endangered Species Act Under Attack 3 (2011), http://www.defenders.org/resources/publications/policy_and_legislation/esa/assault_on_wildlife_the_endangered_species_act_under_attack.pdf.

6 *See* Defenders of Wildlife, *supra* note 5, at 6-8.

7 *See generally* Endangered Species Act ("ESA") 16 U.S.C. § 1531-1544 (2006).

8 *See* Defenders of Wildlife, *supra* note 5, at 20, 21(discussing Senator Cornyn's, and Senator Inhofe's proposals amending the ESA to exempt the dunes sagebrush lizard and the lesser prairie chicken from ESA protection).

9 *See* Nick Snow, *Alaskan Officials Cite Job, Economic Gains From Opening ANWR*, Oil & Gas J., Sept. 31, 2011, http://www.ogj.com/articles/2011/09/alaskan-officials-cite-job-economic-gains-from-opening-anwr.html?cmpid=EnlEDSeptember222011 (describing Alaska officials' claims that opening the Alaska National Wildlife Refuge to drilling would provide thousands of new jobs and help reduce the federal deficit).

10 *See* Joe Newby, *Administration Set to Put Lizards Ahead of Energy Jobs*, Spokane Conservative Examiner, Sept. 19, 2011, http://www.examiner.com/conservative-in-spokane/administration-set-to-put-lizards-ahead-of-energy-jobs (claiming that protecting the dunes sagebrush lizard would lead to the loss of 27,000 jobs and inhibit energy exploration in the Permian Basin).

11 *See* Newby, *supra* note 10.

12 *See, e.g.*, Ernie Niemi et al., ECONorthwest, The Sky Did NOT Fall: The Pacific Northwest's Response to Logging Reductions 1, 21-33 (1999), http://pages.uoregon.edu/whitelaw/432/articles/SkyDidNotFallFull.pdf (discussing the timber industry's prediction that a federal judge's temporary ban on logging 24 million acres of national forest in the Pacific Northwest to protect the northern spotted owl would lead to wide spread job losses and an economic depression).

13 *See* Krugman, *supra* note 1; *see also* Goodstein, *supra* note 3, at 32, 33 (debunking the myth that environmental regulation threatens jobs and finding that environmental protection actually raises overall employment levels).

14 The New Mexico LPC/SDL Working Group, Collaborative Conservation Strategies for the Lesser Prairie-Chicken and Sand Dune Lizard in New Mexico: Findings and recommendations of the New Mexico v (2005), http://nwcos.org/Resources/LPC_SDL_Conservation_Strategy_CD.pdf.

15 Tex. R.R. Comm'n & N.M. Oil Conservation Div., *Graphs and Data on Permian Basin Oil Production and Reserves*, Univ. of Tex. Permian Basin Ctr. for Energy & Econ. Diversification, http://ceed.utpb.edu/energy-resources/petroleum-library/permian-basin-statistics/graphs-and-data-on-permian-basin-oil-production-and-reserves/ (last visited Oct. 26, 2011).

16 Advanced Resources Int'l, Basin Oriented Strategies for CO2 Enhanced Oil Recovery: Permian Basin 2-1 (Feb. 2006), http://fossil.energy.gov/programs/oilgas/publications/eor_co2/Permian_Basin_Document.pdf. Although the Permian Basin is one of the largest domestic oil producers, oil production in the region has been declining for thirty years since its peak in 1974. *Id*.

17 *See* The New Mexico LPC/SDL Working Group, *supra* note 14, at 1, 12.

18 *Id*. at 4-5.

19 Defenders of Wildlife, *supra* note 5, at 20-21 (describing threats faced by lesser prairie chickens and dunes sagebrush lizards such as loss of habitat caused by oil and gas drilling).

20 *See id*. (arguing that without protection the lesser prairie chicken and dunes sagebrush lizard could face extinction).

21 *See* 75 Fed. Reg. 66370, 66385 (Oct. 26, 2011) (concluding that the priority for listing the lesser prairie chicken is high); 75 Fed. Reg. 77801 (Dec. 14, 2010) (proposing to list the dunes sagebrush lizard as endangered under the ESA).

22 *See* 75 Fed. Reg. 66370, 66385 (Oct. 26, 2011); 75 Fed. Reg. 77801 (Dec. 14, 2010).

23 *See* Patrick Manning, *Saving the Dunes Sagebrush Lizard Could Endanger Oil Production, Lawmakers Say*, FoxNews.com (May 10, 2011), http://www.foxnews.com/politics/2011/05/10/saving-dunes-sagebrush-lizard-kill-oil-production/; Caroline May, *Is the Obama Administration Protecting Lizards at Expense of Jobs?,* The Daily Caller (Sept. 19, 2011, 12:18 AM), http://dailycaller.com/2011/09/19/is-the-obama-administration-protecting-lizards-at-expense-of-jobs/ (repeating the president of the Permian Basin Petroleum Association's statement that listing the dunes sagebrush lizard would shut down drilling in the Permian Basin for a minimum of two years and as many as five years).

24 *See* Manning, *supra* note 23; May, *supra* note 23.

25 Representative Steve Pearce proposed two amendments for inclusion in the FY 2012 Interior Appropriations bill that would block listing of the dunes sagebrush lizard and the lesser prairie chicken. Representative Pearce has been a presence in the media predicting economic calamity if the listing of either species moves forward. *See*, e.g., Milan Simonich, *New Mexico Congressman Pearce: Protecting Lizard Would Put Jobs at Risk*, El Paso Times (Apr. 19, 2011, 6:53:12 AM), http://www.elpasotimes.com/news/ci_17877554.

26 *See* Goodstein, *supra* note 3, at 5, 8, 32, 33.

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Cuban Offshore Drilling: Preparation and Prevention within the Framework of the United States' Embargo

*by Richard Sadowski**

Introduction

Cuba plans to drill seven exploratory oil wells in the Gulf of Mexico by 2014.[1] Some argue that the threat of Cuban offshore oil drilling will increase the embargo's costs and that U.S. oil companies will miss out on oil exploration that will go to foreign countries.[2] In response, some U.S. lawmakers and U.S. oil lobbyists have advocated for an exception to the Cuban embargo permitting energy cooperation.[3] Notwithstanding these concerns, the long-standing Cuban embargo is an economic restriction with a significant purpose and should not so easily be forsaken.

This article argues that, despite the added pressure Cuba's offshore oil developments have placed on U.S. policy, the embargo's twin goals of bringing democracy to the Cuban people and ending their oppressive rule have not been met. Thus, now is not the time to lift or ease the embargo. The embargo itself serves to restrict Cuba's drilling efforts[4] and new legislation may further hamper Cuba's exploration.[5] Additionally, the economic concerns of the U.S. energy industry do not warrant a change in the U.S. foreign policy toward Cuba, and those concerns can be better met by tapping U.S. resources. Furthermore, fears of a Cuban oil spill can be assuaged through less drastic measures such as an oil spill emergency response agreement with Cuba, similar to the one that the United States has enacted with Mexico.

The Embargo

In 1960, President Eisenhower ended U.S. sugar purchases from Cuba and halted all oil deliveries to Cuba in response to the then new communist government under Fidel Castro.[6] These sanctions were put into place to destabilize Castro's new government and promote democracy.[7] The Foreign Assistance Act of 1961 authorized the president to impose a "total embargo upon all trade between the United Stated and Cuba."[8] On February 7, 1962, President Kennedy signed an Executive Order[9] utilizing this authority to initiate the Cuban embargo.[10] This was followed by the enactment of the Cuban Assets Control Regulations on July 8, 1963,[11] under the Trading with the Enemy Act ("TWEA").[12]

In 1996, during the Clinton administration, the Helms-Burton Act[13] was passed in an effort to prevent foreign companies from trading with Cuba.[14] The Helms-Burton Act also codified much of the embargo as well as restricted the power of the President to unilaterally remove the embargo.[15] President Obama recently eased restrictions through the Omnibus Appropriations Act of 2009[16] and has planned even further changes.[17] The Cuban government applauded these new measures, but averred that the United States did not go far enough to ease the economic sanctions.[18] According to the Cuban Foreign Minister, Bruno Rodriguez, U.S. policy has, in fact, become more restrictive.[19] Indeed, these changes stop well short of ending the embargo[20] or even opening dialogue between the United States and Cuba.[21] Ultimately, trade between the United States and Cuba remains heavily restricted.

Restrictions Relevant to Cuba's Oil Exploration

The embargo on Cuba has widespread and significant economic effects for both the United States and Cuba. Various provisions of the embargo impact Cuba's ability to obtain U.S. technology and to work with U.S. companies.[22] Additionally, TWEA prohibits U.S. oil exploration companies from dealing with Cuba by prohibiting the transfer of assets in which the Cuban government or Cuban nationals have an interest.[23]

On September 9, 2009, Platte River Associates ("PRA"), a U.S. company, was fined for violating TWEA.[24] PRA sold oil and gas exploration software to the Spanish oil company Repsol[25] even though PRA was told that the software was being utilized for drilling in Cuban waters.[26] Describing the seriousness of the violations, United States Attorney David Gaouette explained that "[t]rading with the enemy is a serious crime, and in this case, a Colorado company has been rightfully held accountable for committing that crime."[27] PRA was sentenced to a fine of $14,500 for its violations.[28] This case exemplifies the extent of the embargo and the related laws to restrict Cuba's access to offshore-drilling technology.

Increased Pressure to End the Embargo

A U.S. Geological Survey estimates that Cuba's offshore oil fields hold at least four and a half billion barrels of recoverable oil and ten trillion cubic feet of natural gas.[29] Cupet, the state-owned Cuban energy company, insists that actual reserves are double that of the U.S. estimate.[30] One estimate indicates that Cuba could be producing 525,000 barrels of oil per day.[31] Given this vast resource, Cuba has already leased offshore oil exploration blocks to operators from Spain, Norway, and India.[32] Offshore oil discoveries in Cuba are placing increasing pressure for the United States to end the embargo. First, U.S. energy companies are eager to compete for access to Cuban oil reserves.[33]

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Secondly, fears of a Cuban oil spill are argued to warrant U.S. investment and technology.[34] Finally, the concern over Cuban offshore drilling renews cries that the embargo is largely a failure and harms human rights.

Economics: U.S. Companies Want In

For U.S. companies, the embargo creates concern that they will lose out on an opportunity to develop a nearby resource.[35] Oil companies have a long history of utilizing political pressure for self-serving purposes.[36] American politicians, ever fearful of high energy costs, are especially susceptible to oil-lobby pressures.[37] This dynamic was exemplified in 2008, when then-Vice President Dick Cheney told the board of directors of the U.S. Chamber of Commerce that "oil is being drilled right now sixty miles off the coast of Florida. But we're not doing it, the Chinese are, in cooperation with the Cuban government. Even the communists have figured out that a good answer to high prices is more supply."[38]

This pressure for U.S. investment in oil is exacerbated by America's expected increase in consumption rates.[39] Oil company stocks are valued in large part on access to reserves.[40] Thus, more leases, including those in Cuban waters, equal higher stock valuation.[41] "The last thing that American energy companies want is to be trapped on the sidelines by sanctions while European, Canadian and Latin American rivals are free to develop new oil resources on the doorstep of the United States."[42]

The BP Disaster Adds to Concerns

Further pressure on the embargo comes from those voicing environmental concerns about Cuba's drilling plans.[43] These concerns are undoubtedly more poignant in the wake of British Petroleum's ("BP") historically tragic Deepwater Horizon oil spill.[44] Currently, there is no agreement between the United States and Cuba to deal with oil spills.[45] The embargo would prevent, or at least hamper, any efforts by U.S. companies to aid any cleanup efforts.[46] In addition, the embargo bans U.S. technologies designed to prevent or contain oil spills from being sold to Cuba.[47]

David Guggenheim, a senior fellow at the Washington Ocean Foundation punctuated the United States' concerns over the potential impacts of Cuba's drilling by remarking that "the Gulf isn't going to respect any boundaries when it comes to oil spills."[48] This statement was recently exemplified by Cuba's own expressed fears that oil from the BP disaster would reach its shores.[49] The Deep Horizon oil spill's threat was enough that several Cuban leaders called for the reexamination of Cuba's own plan to extract oil off its shores.[50] Nonetheless, Cuba's oil exploration plans seem unfazed.[51]

Opponents Argue the Embargo Harms Human Rights and Does Not Work

Many critics of the embargo complain that the policy is inherently ineffective and actually exacts a human toll.[52] They note that many of the societal ills of the Cuban people are furthered by the embargo's economic impacts on Cuba. [53] For instance, the American Association for World Health's yearlong study of Cuba concluded that the embargo itself has led to increased suffering and death in Cuba, a condition that has been aggravated by the passage of the Helms-Burton Act.[54] The study found that "the declining availability of foodstuffs, medicines and such basic medical supplies as replacement parts for 30-year-old X-ray machines is taking a tragic human toll."[55] Further, they argue that the opposition of the Cuban people to the embargo is ignored.[56] Opponents view the embargo as a hypocritical U.S. policy that allows enthusiastic trade with China, a communist nation where political oppression is at least as great as in Cuba.[57] These criticisms put further demands on the United States to end the embargo in the interest of human rights.[58]

Dealing with Cuba's Oil Plans without Compromising the Embargo

The Embargo is Still Necessary

Despite calls for its revocation, the embargo's purpose is as important now as when it was enacted. Cuba is still an oppressive country.[59] Cubans may not leave the country without permission and still lack fundamental freedoms of expression.[60] José Miguel Vivanco, the director of Americas division at Human Rights Watch, notes that as "Cuba's draconian laws and sham trials remain in place, [the country] continue[s] to restock the prison cells with new generations of innocent Cubans who dare to exercise their basic rights."[61] Moreover, a recent proposal by the Cuban Communist Party makes clear that there will be no change in the country's oppressive one-party political system.[62] In doing so, the lengthy document declares "[o]nly socialism is capable of overcoming the current difficulties and preserving the victories of the revolution."[63] Cuba's treatment of its own citizens is a situation the United States cannot ignore. The embargo's twin goals of backing democracy and ending oppressive rule have not been met. Until they are, the embargo must remain in place.

Calming Environmental Fears with an Oil Spill Response Agreement with Cuba

Fears that Cuban offshore drilling poses serious environmental threats because of the proximity to the United States and the prohibition on U.S. technology transfer are overblown. Cuba has at least as much incentive to ensure safe-drilling practices as does the United States, and reports indicate that Cuba is taking safety seriously.[64] Lee Hunt, President of the Houston-based International Association of Drilling Contractors, said, "[t]he Cuban oil industry has put a lot of research, study and thought into what will be required to safely drill," and that "they are very knowledgeable of international industry practices and have incorporated many of these principles into their safety and regulatory planning and requirements."[65] Thus, while the economic embargo of Cuba restricts American technology from being utilized, foreign sources have provided supplemental alternatives.[66]

Further, spill response planning can be implemented before drilling begins. The United States currently has oil spill response agreements with Mexico[67] and Canada,[68] but not with Cuba.[69] As the Deepwater Horizon spill highlighted, planning for disaster is essential. To achieve this goal, the United States can model

a Cuban plan on the Joint Contingency Plan between the United Mexican States and the United States of America Regarding Pollution of the Maritime Environment by Discharge of Hydrocarbons or Other Hazardous Substances ("MEXUS Plan").[70] That plan originates from an agreement between Mexico and the United States signed on July 24, 1980, and developed in accordance with the International Convention on Oil Pollution Preparedness, Response and Cooperation, adopted on November 30, 1990.[71] The Plan pre-designates on-scene coordinators, a joint response team, response coordination centers, rapid notification protocols, and communications procedures for the event of an oil disaster.[72] The Plan has triumphed in test simulations, which validates its concepts.[73]

The United States must initiate the same level of planning with Cuba. Given the proximity of potential Cuban wells to the Florida coast, the need for a contingency plan is clear. Fortunately, the MEXUS Plan provides a guiding framework upon which the United States and Cuba can draw. Furthermore, a recent Congressional report indicates that Cuba is open to certain bilateral agreements with the United States, noting Raul Castro's willingness to engage with the United States where mutual interests exist.[74] Since an oil spill agreement is of mutual interest, both countries should work to draft and implement it.

The United States Should First Utilize U.S. Oil Resources

The United States' thirst for oil should first be quenched with local resources before resorting to end the embargo. Allowing U.S. companies access to Cuban offshore oil fields would effectively allow those companies to drill for oil in waters closer to the U.S. coast than laws currently allow.[75] J. Larry Nichols, Chairman of Devon Energy, an independent U.S. oil and natural gas producer, opined that "[w]hen U.S. companies are not even allowed to drill in the eastern half of the Gulf of Mexico, we have a long way to go before we can think about international waters off the coast of Cuba."[76] If access to oil is indeed the main U.S. rationale behind lifting the embargo, this need is best met by first allowing companies to drill more extensively in U.S. waters.[77]

Moreover, dependence on other countries for oil is not a responsible option.[78] Because the United States has the best oil safety standards in the world, it is most environmentally competent to tap America's own natural resources.[79] Furthermore, because drilling has yet to start, there is time yet for Cuban political change to occur.[80] Not only is there simply no pressing need for Cuban oil, as portrayed by U.S. oil lobbyists, but U.S. resources offer a more attractive alternative.[81]

Recent Economic Policy Changes in Cuba Signal the End of Oppressive Cuban Rule

Economic pressure has been weighing heavy on the Castro regime, foreshadowing an end to its oppressive rule over Cuba.[82] When asked if Cuba's economic system was still worth exporting, Fidel Castro admitted, "[t]he Cuban model doesn't even work for us any more."[83] Stephen Wilkinson, a Cuba expert at the London Metropolitan University, notes that Castro's words are not a condemnation of socialism but rather "an acknowledgement that the way in which the Cuban system is organised has to change . . . [w]e can now expect a lot more changes and perhaps more rapid changes as a consequence."[84] Fidel's departure as the leader of Cuba and Raul's subsequent economic reforms are indicative of imminent political changes, and signal the end of communism in Cuba.[85] These developments may result in an improvement in Cuban human rights and social conditions. For example, Raul has already eased the impact of the world food crisis, released prisoners, and commuted death sentences.[86]

Congressman Buchanan's Bill to Stop Cuban Offshore Drilling is the Proper Action for the United States

On January 21, 2011, Florida Congressman Vern Buchanan introduced a bill in the House of Representatives aimed at thwarting Cuba's drilling efforts.[87] The bill would permit the U.S. Secretary of the Interior to deny drilling leases to foreign companies that deal with countries under U.S. trade sanctions, including Cuba.[88] Following the successful application of U.S. pressure on Repsol to pull out of drilling in Iran, Buchanan's bill is designed to again put pressure on Repsol to pull out of Cuban drilling plans.[89] Buchanan's bill could threaten Repsol's projects elsewhere in U.S. territory where the company operates rigs near Texas and Louisiana.[90]

While the success of the bill is not yet certain,[91] foreign firms should seriously weigh the rewards of Cuban oil against the possible risk of being ostracized by America economically.[92] Mr. Buchanan's bill is the proper approach for U.S. legislation and policy to make a stand against Cuba's offshore oil exploration.[93]

Conclusion

Since its inception, the Cuban embargo has ebbed and flowed in severity and support. While the measure seems to be increasingly unpopular, it takes legitimate aim at a Cuban regime characterized by intolerance and oppression. Though the Castros utilize the embargo as a scapegoat upon which to blame Cuba's failures,[94] recent changes suggest the embargo is indeed close to accomplishing its goals.[95] Despite this, critics, including U.S. oil producers, want the embargo dropped.

Regardless of criticism, the embargo must remain in place until its goals are met. Environmental fears can be effectively countered through bilateral response and preparation agreements with Cuba. Also, economic and energy needs are more properly addressed through drilling U.S. resources. Ultimately, with the aid of legislation such as Buchanan's bill, the United States should exercise its political and economic power to pressure foreign companies to avoid offshore drilling in Cuba. The United States can dissuade foreign investment without compromising the embargo. It appears an end to oppressive communist rule in Cuba is nearing. Now is the time for the United States to both reject offshore drilling in Cuba and demonstrate resolve in meeting the goals of the economic embargo.

Endnotes: Cuban Offshore Drilling: Preparation and Prevention within the Framework of the United States' Embargo *on page 63*

The Arctic Council: Gatekeeper or Doormat to the World's Next Major Resource Battle?

*by Oded Cedar**

It has long been said that "Those who cannot remember the past are condemned to repeat it."[1] If history indeed repeats itself, then all indicators suggest that the global community is ripe for another major "land grab."[2] This time, the land at issue is the Arctic[3] and the bounty is the abundant oil and natural gas reserves trapped beneath its surface.[4]

Over the last decade, a coalescence of different factors has shifted the search for natural resources such as oil and gas to the Arctic.[5] Advances in exploration, drilling, and extraction technologies have helped mitigate the traditionally cost-prohibitive factors of developing ice-locked reserves.[6] Geopolitical concerns about the waning global supply of oil and gas have also driven countries to explore for these resources in the Arctic.[7] However, the primary force behind this focus is the undeniable fact that the Earth's changing climate is melting away the Arctic's ice sheet and permafrost, making the region's oil and gas reserves accessible for the first time.[8]

The Arctic Council ("AC" or "Council") is a leading forum for the dialogue on the development of natural resources in the region.[9] This intergovernmental body is comprised of eight member-nations, all of which border the Arctic Circle.[10] The Council also includes six "permanent-observer" nations[11] who, though they have no voting rights, can participate and contribute to the work of the Council.[12] The AC's stated mission is to: "promot[e] cooperation, coordination, and interaction among the Arctic States . . . on common Arctic issues, in particular [on] issues of sustainable development and environmental protection in the Arctic."[13]

The AC's mission stems from the Ottawa Declaration, which established the AC in 1996.[14] This document avows the commitment of AC member-nations to seek "sustainable development in the Arctic region including conservation and sustainable use of natural resources."[15] This language from the Ottawa Declaration incorporates the Arctic Environmental Protection Strategy ("AEPS") that was instrumental the Council's creation.[16] Thus, the impetus behind the AEPS and the AC makes it reasonable to expect as well as demand some action from the Arctic Council to oversee and regulate the development of fossil fuels in the Arctic.[17]

Despite its benevolent mission and establishing documents, the AC has in actuality provided a forum for member-nations to lay the groundwork for unsustainable fossil fuel development in the Arctic.[18] Most recently, the Danish ambassador to China noted his strong support for China's inclusion into the AC as a permanent-observer nation.[19] This move garnered speculation from scholars and analysts, who noted China's aid to Denmark in the development of Greenland's natural resources, and China's interest in Arctic resources since 2004.[20] Canada is an especially vocal claimant, touting the country's long-standing sovereignty over certain areas in the Arctic, and further expressing the country's intent to exercise its sovereignty in documents published with the AC.[21] Other actions by the AC member-nations outside of the forum, like Russia's placement of a national flag on the Arctic's ocean floor, presumably stir echoes through the AC.[22] At one point or another, every member nation of the AC has published reports with the council, expressing their plans to exercise sovereignty over the region and to develop its fossil fuel resources.[23]

These national assertions make fossil fuel extraction in the Arctic seemingly expected and inevitable.[24] However, the AC member-nations' plans for fossil fuel extraction contradict their commitment to protecting the Arctic environment expressed in the Ottawa Declaration.[25] In addition to worsening the effects of climate change, unchecked oil and gas development can have direct, catastrophic environmental consequences. For example, the lack of oversight that allowed the BP oil spill to occur illustrates what could happen in the Arctic without proper regulation by the AC.[26] Furthermore, the AC has emerged as the key platform for the indigenous tribes of the Arctic to voice their concerns.[27] Without a proper oversight mechanism, these indigenous tribes will lose a key forum for ensuring their negotiating parity with the member-nations.[28] Therefore, it is imperative for the AC to develop environmentally conscious standards for fossil fuel extraction to protect the Arctic environment under the Ottawa Declaration. If the AC fails to do so, then it risks becoming an obsolete and ineffectual organization.

The AC should also create mechanisms that will enforce the member-nations' Ottawa commitments and environmental regulations for oil and gas development in the Arctic. However, since the AC is a "cooperative" group it currently has no binding enforcement authority.[29] Therefore, the first step must be the establishment of the AC's binding powers, .[30] Without the essential ability to enforce its resolutions, the AC has no mechanism through which it can ensure that its member-nations do not act in contradiction with the AC's core missions. However, given their support for fossil fuel development in the Arctic, it is unlikely that the AC member-nations will voluntary create a new regulatory authority in the region. Thus action must come from the international community, who —through the "permanent-observer" nations—must apply pressure on the AC

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Threats to a Sustainable Future:

Water Accumulation and Conflict in Latin America*

*By Rutgerd Boelens, Mourik Bueno de Mesquita, Antonio Gaybor and Francisco Peña***

Introduction

In Latin America, debates over natural resource management policies and legislation fill discussion forums. This is a needed discussion as coherent policies that both promote democratic, equitable water use systems and also safeguard the sustainability of water resources are rare in the region.[1] The absence of effective water regulation that considers the common interest and long-term water availability results in poor management and use of natural resources, driving explosive conflicts.[2] As in many regions of the world, there is growing demand and competition for access to water in Latin America. Agricultural, industrial, mining and energy companies, as well as large cities and housing developments, have altered socio-natural geography and are changing the rural panorama profoundly.[3] These recent demands are competing with existing water rights and ignoring local water management rules in rural communities and indigenous people's territories.[4] Moreover, climate change and ecosystem degradation are further reducing water availability in the region.[5]

Generally, new water reform processes have done little to curb this situation and some have even worsened it. In many cases in Latin America, elites and corporations have taken advantage of government interventions.[6] New international privatization policies trample over the water rights of indigenous and other rural peoples, monopolizing water access and control.[7] This article reviews the general context and issues of water governance in Latin America and analyzes the accumulation of management power by a few elites through modern extractivist policies and neoliberal governance. Using case studies in Ecuador, Mexico and Peru, this article also illustrates how the prevailing water economic and policy models lead to a deepening of societal water conflicts, triggering reactions "from below."

The Context of Water Governance

Studies in Latin America have shown a serious disconnect between water laws and actual governance. This is particularly evidenced by fragmented enforcement of these regulations with separate agencies administering different water uses.[8] These agencies take actions that are often contrary to public interests and collective rights.[9] State projects and water management agencies also favor political agendas, often creating economic opportunities for elites and government players.[10]

As a reaction to the Latin American government's disjointed and inefficient efforts to manage water resources, there is consensus among most of the region's stakeholders–both groups with investment power and indigenous organizations, promoting a move toward decentralized water management.[11] Water management agencies have thus initiated decentralization and privatization schemes that have transferred some authority to local or municipal authorities, user groups, private companies, and public-private institutions.[12] However, redefining water policy is difficult given the varied ideologies and interests held by the relevant stakeholders. [13] Among the issues discussed is whether water can, or should, be treated as a privatized commodity rather than as a fundamental, non-transferable human need.[14] Discussion also centers around what roles the State and private sectors should play in decentralizing water governance, as well as whether market forces could effectively allocate water to meet various needs.[15] Even if these difficult ideological questions are answered, current Latin American governance structures provide a challenging platform for the effective implementation of new water management ideas. In some cases, weak agencies run by bureaucrats or local elites leave little room for multi-actor participation.[16] Therefore, even if the government takes action to decentralize or privatize water services and establish water markets they are face inadequate regulation and enforcement.[17]

Furthermore, central government agencies also reject and supplant local and indigenous water management initiatives.[18] In general, cultural practices of water management are not taken into consideration in national lawmaking; society is portrayed as homogenous, with no room for differing water rights or forms of water governance.[19] Water policies and laws often assume that simply adopting official legal norms will work to shape and standardize the multi-faceted reality of water management, creating a "modern", "efficient" and "rational" management system.[20] Therefore, these methods of local water management are discriminated against, and water rights are instead turned over to "modern production and producers" – legally and illegally.[21]

**This paper presents results from investigations done by researchers associated with the International Justicia Hídrica / Water Justice Alliance (www.justiciahidrica.org), in collaboration with the NWO-WOTRO (Netherlands Organization for Scientific Research) inter-Andean projects 'Struggling for Water Security in the Andes' and 'The Transnationalization of Local Water Battles', all coordinated by Wageningen University, The Netherlands.*

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These centralized practices have disrupted a localized, pluralistic water management system that has existed for centuries, especially in irrigation-based communities that have developed management practices by incorporating both ancient water traditions and modern norms.[22]

Water accumulation and control by the few is a long-standing problem in Latin America. Recent national and international policies, combined with the economic power of multinational corporations, make this problem more pressing than ever before. Water thievery by these privileged stakeholders in times of increasing scarcity, is leading to numerous conflicts, most of them local.[23] Unfortunately, these conflicts are usually not mentioned in the national or international media.[24] The few local conflicts and protests that do reach the national media, which is dominated by the ruling political and economic power sectors, are immediately demonized.[25]

Latin American is not the only place where public water policies are problematic. International interest in coordinating better water management and enacting laws to enable local decision-making is growing.[26] This vision calls for a greater decentralization of power from national authorities to local watershed organizations, where local citizens would have a voice in deciding how to allocate water resources.[27] The following sections present some Latin American examples from Ecuador, Peru and Mexico that highlight the issues of water governance.

Ecuador: Concentrating Water In Agri-Business

Ecuador has witnessed two simultaneous growing trends over the last three decades: the increase in water use for agriculture and the development of irrigation for particularly profitable crops.[28] In the field, this is producing a certain type of commodities.[29] In the past, exports were mainly dry land crops, but current exports now require higher irrigation water content.[30]

Irrigated cultivation of certain commodities has become a necessary condition for competitiveness in the international and national markets where costs are low and the selling prices are high.[31] Some crops, such as bananas and flowers, would never reach the international market without irrigation.[32] The main exporters of these water-intensive crops are the countries of the South; in Ecuador, for example, all corporate agriculture ("agribusiness") for export is irrigated.[33] This practice has spread throughout Latin America, including growth in Mexico, Colombia, and Peru. The domestic large-scale agriculture market is also highly extractive of water resources, as evidenced by water-demanding sugar cane production.[34] In contrast, agriculture for domestic consumption from small and medium farms, including coffee and cacao for export, is not irrigated for most crops.[35]

This asymmetry helps explain the highly differentiated dynamics of production and reproduction in these distinct types of agriculture. In Ecuador, agribusiness profits for some crops are high while profits for other crops are extremely low or non-existent, especially for most small farmers.[36] Thus, to narrow the specificity of the agricultural crisis, only small farming has a crisis while large-scale agribusiness is booming.[37] Agribusiness hoards the best land, almost all the water, and all the profit.[38] Ecuador is heavily concentrating water with the industrial few - this is the age of water dispossession.[39]

Neoliberal policy has given national and multi-national power groups a normative framework to ensure their monopolization of Ecuador's water and land.[40] Water is plundered two ways: formally, through concessions or authorizations granted by the Ecuadorian government, or illegally.[41] This historical, long-standing process has continued to grow over these last decades.[42] The concentration of water in the hands of a few mirrors the similarly inequitable distribution of land in Ecuador. According to official figures, rural and indigenous populations with community-based irrigation systems account for eighty-six percent of users, but have only twenty-two percent of the irrigated land area.[43] What is worse is that these populations have access to only thirteen percent of total water flow whereas the private sector, representing one percent of agricultural production units, has amassed sixty-seven percent of the water.[44] When it come to land distribution, three quarters of farms in the country account for only twelve percent of arable area, while the two percent of farms owning larger than one hundred hectares account for forty-three percent of the national total.[45] Water, like land, is becoming increasingly scarce, and most irrigation-ready water has already been allocated formally or seized illegally to national or international corporations.[46]

Examining some examples reveals the magnitude of this water theft. Water monopolies are evident in three parishes in the Ecuadorian province of Imbabura where large farms are allocated ninety-one percent of the flow and only nine percent is left for small and medium farms.[47] In the lower Guayas river basin, case studies of six rivers show that seventy-six percent of water flow is used by sixty-one companies, while nearly one thousand small and medium farms are left with the remainder.[48] In the Guayas province, some sixty-two companies formally receive water for irrigation at an average rate of six hundred liters per second, an amount that could irrigate one thousand small farms on the Ecuadorian coast.[49] It is common in these areas for large companies to block an entire river without government authorization to use all or part of its flow.[50]

Of further concern, some large companies control the entire production process, including the transformation of products, the marketing of inputs, and capital goods.[51] In Ecuador, an estimated 400,000 hectares of farmland (out of eight million total) are dedicated primarily to agribusiness and the industrial production of sugar cane.[52] This area constitutes only five percent of the country's farmlands but demand at least 400,000 liters per second of water.[53] To put this in perspective, this flow rate is eighty percent of the total volume granted by the entire country in 2008 (499,000 liters per second).[54]

Increasingly, this concentration of water rights and use in the hands of a few creates conflict with and mobilization by the larger population. These conflicts have historically been localized as the farmers and rural residents who are affected cannot afford to oppose the more powerful organizations.[55] However, increasingly, conflicts have begun to branch out from the local level to become regional, and even national, mobilizations.[56]

Mexico: Concentrating Water Rights in a Country With High Social Polarization

In modern Mexico, it is not only water rights that are being concentrated but wealth as well. Scholars estimate that fifty to seventy-five percent of Mexico's population can be classified as poor.[57] Half of them are in "food poverty," a federal classification whereby their income is not enough to provide the calories required to survive.[58] In the year 2008, the wealthiest ten percent received thirty-six and a half percent of the nation's income, while the poorest ten percent received a mere four and a half percent.[59] Fifty families repeat and interweave their names on lists of the country's most industrial, financial and service groups, thirty-nine of which are among the country's richest families.[60] The deciding threads of Mexican economic life are held by a small, powerful ruling class.[61]

Post-revolution Mexico, which for decades claimed to grant social rights and promote "balance among production factors," has instead driven the concentration of wealth to favor the most powerful economic groups over the past thirty years.[62] For example, the political class transferred government property to private ownership in exchange for juicy bribes to top officials.[63]

Similarly, there has been a wave of water rights concentration by large landowners (mainly in northwestern and northern Mexico), and by industry, especially those using large volumes of water. Examples can be seen in the food industry, chemical plants, cement plants and mining industry (particularly open-pit mines using huge quantities of water to separate metal ores by leaching).[64] Real estate developers also purchase low-priced agricultural water rights to transfer for urban use.[65] These developers increasingly expropriate the water of rural communities and small localities to supply resort developments (Acapulco and Cancún for example) and expropriate community springs to promote "green" tourism.[66]

In such a socially polarized country, this water concentration is not as visible as it should be. The media tends to conceal the realities about the concentration of water rights and uses, claiming that water is scarce due to global warming, and waste by municipalities.[67]

Finding legal documentation of this water concentration is no easy task. The Mexican Public Register of Water Rights (REPDA) is an unreliable instrument with rampant under-registration of actual use, disclosing little about concessions realities.[68] Not recording the water used, or under-recording, is common practice in Mexico and is often tolerated or even promoted by the agencies responsible for enforcing the law.[69] Although federal administrators often complain that small and medium farms are the ones to blame, there is evidence that industry, urban water supply companies, and even the government are guilty of under-reporting actual usage.[70] For this reason, inequality in accumulation of water rights is revealed through direct evidence, such as the size of water facilities, production volumes, amounts of wastewater discharged, and the like.[71]

This under-recording reveals at least two different things. First is the existence of a legal pluralism in which indigenous and rural communities do not feel it necessary to register their water use, simply because this use is perceived to be based on their local and historical water sources and rights.[72] The second revelation is that large landowners who under-record avoid paying for their water rights, demonstrating the power of the Mexican elite in conjunction with governmental complicity.[73] Corruption also enables major under-recording of industrial water use and pollution by large industries.[74]

Water rights are no exception to the overall concentration of wealth throughout Mexican society. The government's asserted efforts to incorporate society into the water management responsibility are far from the truth. Watershed councils, theoretically designed to assist this management and build consensus, don't work because they have become yet another arena for deal-making by controlling elites.[75] The councils systematically exclude rural groups, small businesses, environmental organizations and social platforms.[76] For example the construction of the *La Parota* dam (designed to supply tourism businesses in Acapulco) was completed without notice from the watershed agencies supposedly responsible for sustainable water management.[77] Conflicts over water continue to increase in number, intensity, and regional coverage.

Peru: Natural Resource Governance and Socio-Environmental Conflicts

The recent history of water governance in Peru demonstrates the contradiction between nationalization efforts by reform governments in the 1970s and a push for privatization in recent decades.[78] Common themes in this recent history include the denial of rural communities and small farmers' management of their own water sources, the concentration of water access with the few, and the centralizing of water control in government agencies and economically dominant sectors.[79] When Alan García took office as President in 2006, he aggressively promoted a neoliberal policy that included the total opening of investment in agro-export, mining, hydrocarbon extraction, and forest concessions.[80] He also declared social protests to be "anti-system."[81] In July and August 2008, the Peruvian government prepared a portfolio of ninety-nine legislative decrees to fill the gaps in Peru's policies on natural resources, environment, water, land access, and the management and organization of rural and native communities.[82] These decrees ushered in a Trade Cooperation Agreement, generally known as the Free Trade Agreement, with the United States and intensified neoliberal economic policy.[83]

The Amazon indigenous peoples' movement led protests against these legislative decrees which threatened their territories and livelihoods.[84] They argued that the national government was not recognizing their rights to territory, natural resources, and their cultural systems.[85] These groups pointed out that Peru's Constitution obligated the government to consult them before any legislation involving them.[86] The government's response has been both counterproductive and repressive.[87] The conflict led to the violent repression in Bagua, in the Amazon region.[88] And while the government made some concessions, its lethargy and lack of political will gave indigenous peoples little to no hope.[89] The same goes for the protests by Andean peoples

and communities about mining companies.[90] The relationship between government and civil society is quite fragile and there is no productive dialogue.[91] Admittedly, this dynamic has earned some indigenous movements political presence and influence in Peru[92]—for example, the government is promoting the legalization of land titles and family ownership of land in rural communities of the Highlands[93]—but the successes are limited.[94] The formalization of water rights among as groups and individuals ultimately grants mining companies access to water and land owned by communities.[95] Rural households are threatened with the disappearance of community farming and communal resource organization.[96] These conditions are encouraging youth to migrate to seek alternatives in cities or mining.[97]

A new water law, drafted by a team of professionals in urban Lima, enacted with little debate in Peru's congress,[98] speaks broadly of integrated water resource management by watersheds.[99] This new law, however, actually reinforces top-down management, creating local offices that are strongly dependent on their central offices.[100] This practice promotes watershed councils that do not effectively involve constituents.[101] Moreover, though the law makes vague claims to regulate the "usage and customary" rights of rural and indigenous communities, in practice it leaves significant gaps regarding the scope of privatizing water management and access.[102]

The weak management of water resources by Peru's public sector has resulted in widespread water pollution as well as increased concentration of water access by extractive industries and some major cities.[103] These trends are further generating socio-environmental conflicts. For example, the Ombudsman Office, which monitors conflicts in Peru, reported 32socio-environmental conflicts in April 2007 and 132 in October 2009 (79 percent involving mining and hydrocarbon companies).[104] The conflicts between corporations and local communities center around inter-basin water transfer, water access, and ownership. Some of the corporations involved include hydropower companies, rural communities, and mining companies.[105]

Conflicts have also increased between communities in micro-watersheds regarding water division, scarcity and degradation. The effects of climate change over the last thirty years have only worsened these problems.[106] In the Peruvian Andes, for example, communities are estimated to have lost fifty percent of their water from sources such as springs and high-altitude wetlands (*bofedales*), creating vulnerable rural communities and decreased food security.[107] Although Andean communities are accustomed to climate variations, they are also facing increasing limitations on social governance of rural communities under such adverse circumstances.[108] Lack of vision and limited socio-technical capacity for public governance provide no support for Andean adaptation efforts, which is worsened in conflicts with economically powerful stakeholders.[109]

The newest Peruvian government regime has a different discourse regarding rural communities and indigenous peoples, speaking of "inclusion."[110] However, as seen in neighboring Bolivia and Ecuador,[111] which also have governments who are supposedly "anti-neoliberal" policy discourse is often only rhetoric as mega-cities and agribusiness or extractive industries pressure for water access and control for– *water flows in the direction of power*.[112]

Civil Society Responses

A variety of responses from populations affected by dispossession of water or land and environmental pollution have emerged. In general, such mobilizations are both dispersed and localized throughout the continent.[113] They vary from road blockades to litigation, and eventually to partial agreements.[114] Frequently, mobilizations rely on specialized advice from civil society organizations working with local leaders.[115] In some cases, mobilizations can lead to the temporary inclusion of the conflict into public and political dialogues.[116] However, any dialogue is typically prolonged over long periods of time while the controlling elite maintains the status quo by dividing the mobilizations and prosecuting their leaders.[117] However, a select few civil society responses have been more successful. In Ecuador, for instance, various social groups—mestizos, *montubios*, indigenous and Afro-Ecuadorians—mobilized to advocate for the inclusion of water rights principles in the Ecuador Constitution in 2008.[118] These groups, working with the Water Resources Forum (*Foro de los Recursos Hídridicos*) and the National Constituent Assembly (*Asamblea Nacional Constituyente*), held three major events focusing on the issues of water rights, allocation, and concentration.[119] Approximately 1000 civil society delegates from around the country participated, discussing water rights at length.[120] The conclusions of the delegates were then delivered to the Assembly, whose representatives publicly committed to incorporating the proposals for the equitable redistribution of water in the political and constitutional plane.[121] The Constitution, approved in October 2008, incorporates the proposed redistribution of water in the following terms:

> The Executive Branch, within two years after the entry into force of the present Constitution, shall review the situation of access to irrigation water for the purpose of granting concessions, avoiding abuse and inequity in the fees charged for water use, and guaranteeing more equitable distribution and access, especially for small and medium-sized farm and cattle producers.[122]

It should be clarified, however, that the Ecuadorian government has not followed through with this proposal.[123] More pressure is needed from social organizations, particularly along coastal regions where the concentration process is the most severe.

Currently, a new water resources bill is pending in the Ecuadorian legislature.[124] Also addressed was the human right to water.[125] Without a doubt, one of the most transcendental subjects in the debate was the decentralization of water.[126] The national indigenous movement also presented on two main themes. The first revealed the large amount of irrigation that is concentrated among the wealthy as a result of the concessions or water theft.[127] The second was the implementation of a collective right under the 2008 law that makes water a public asset.[128]

In Mexico, less powerful social groups, such as rural and indigenous, low-income urban residents, and small businesses,

are also taking various lines of action. These groups are promoting local management and action, such as advocating that private corporations obtain renewable permits from local communities to develop and use water resources, and pay communities to preserve water resources from production.[129] The movements focus on local control of springs, rivers and wells in addition to some agricultural water.[130] These community actions have involved regulations on access to water, shared responsibilities to maintain common availability, defensive actions to protect community assets, and agreements with neighbors.[131] A second promising trend is the preference for smaller water systems and less-centralized administration. In the last two decades, social opposition to large water systems, such as inter-basin transfers and dams, has come back to life.[132] Conversely, governmental programs are now accepting smaller works, even involving direct labor input by local inhabitants.[133]

A third trend is an increase in mobilization and direct political action, particularly in the heaviest conflicts. These actions generally overlap with local action, involving coalitions of community authorities, groups of neighbors, and national or international non-governmental organizations.[134]

In Peru, like in Mexico, the mobilizations are usually less coordinated and less integrated between local and national movements.[135] However, increasing social mobilizations has generated political influences that commonly express themselves in electoral processes and strengthen movements at the regional and national levels.[136] These movements generate high expectations by the affected populations, but their impacts on big interests and dominant powers are rarely substantial.[137] Instead, the influence of international opinion is frequently more influential in the Peruvian government.[138]

When mobilizations begin to have a political presence, the government actively works to divide the movements and weaken momentum.[139] Recent political changes that promise social and cultural inclusion or new discourse rarely come to fruition.[140] For actual change to take place there needs to be a restructuring of the Peruvian government and a redefining of its relationship with the population.[141] In Peru, the government resistance is ever-stronger, easily overcoming the cries for water equity by social mobilizations.[142]

Conclusion

In the last three decades, Latin America has experienced aggressive governmental implementation of neoliberal policies that are favorable to extractive exploitation and agro-export companies.[143] This has generated the accumulation and concentration of natural resources in the hands of the few at the expense of water security, food security, and less-privileged parts of society.[144] The affected parties are enveloped in frequent conflicts. State interventions often end unfavorably for rural and indigenous people in light of the massive power asymmetry and cultural marginalization.[145] Under these circumstances, these parties feel increasingly excluded and marginalized, making protest intense.[146]

This article has analyzed how in Ecuador, Mexico and Peru this process of water concentration limits and seriously affects potential for local development, prospects for survival among small communities and reproduction of the social fabric.[147]

In "modern" Latin American societies, natural resources—particularly water—are valued predominantly in economic market terms, to the detriment of social, cultural and environmental values.[148] At the same time, these last two decades of international policies claiming to democratize water management and decentralize decision-making, have instead aggressively taken over governments in the Latin American region, obscuring any interference by the majority of localized water users.[149] Political and legal reform for water management is grounded in standardizing management norms.[150] To facilitate bureaucratic control by "hydrocrats," or to create an efficient market for water rights along neoliberal lines, it is considered necessary to leave behind the practices of the rural or indigenous population labeled as "backward."[151] Diversity in rules and rights is actively discouraged because it would obstruct regional and international transfers and sales, which require a uniform legal framework.[152] Local rules and rights are considered anomalies that would curb investments and profits.[153] Therefore, decentralized water policies are not replacing bureaucratic policies, but instead regiment and oppress local pluralism.[154] Government bureaucracies are "reformed" to draft and enact legislation that enables water markets to emerge.[155] Community and collective rights systems that do not fit in the neoliberal system are, by definition, denied as "backward" and "inefficient."[156]

For these reasons, there is a lack of trust between the government and civil society with obvious exceptions when shared public governance is recognized by the public.[157] This unwillingness to engage in intercultural dialogue about management of natural resources, water, land, and territory is problematic.

The effects and impacts of concentrated water rights by dominant economic producers will likely worsen with increasing climate change phenomena.[158] The vulnerability and poverty of rural peoples deepens as water is less available and competition increases. If this neoliberal policy and economic development model grounded in extractive industries and large agro-export companies remains, this situation of accumulation, concentration, and waste cannot change and conflicts over access to and uses of water, land and territories will only increase.

Nevertheless, "bottom-up" responses are useful. In some cases, large public protest and the proposals for alternative law and policy can be influential, potentially even influencing the national constitution, as in Ecuador. In other cases, as in Peru and Mexico, mobilization and alternative policy-making tend to be of lower profile and the few successes can be noticed especially in localized events. Along with protests and mobilizations by civil society and rural and indigenous communities against private and concentrated water rights, there is also a more subtle struggle for these constituents to establish and enforce their own rights and rules.

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Collaboration and the Ecology of Democracy*

*by Daniel Kemmis and Matthew McKinney***

Introduction

This article explores various citizen-driven, multiparty natural resource and public land management collaborations, viewed as one emerging species within the "ecology" of democracy. Examples from the Quincy Library Group Partnership, Beaverhead–Deerlodge National Forest, Blackfoot Valley, and Valles Caldera Trust will trace the trajectory of collaborative democracy from its organic inception to its present form. To anticipate the core of the argument: we believe that the kind of problemsolving collaboration we will be examining is democratic in the most fundamental sense of that word because it is nothing more nor less than the effort of people to shape the conditions under which they live, rather than leaving that shaping to someone else.

We begin by explaining what we mean by an "emergent form of democracy." This concept of emergence derives primarily from complexity theory. Complexity theorists stress that it is inherently impossible to provide in advance a rule or algorithm that will produce the structure or pattern that in fact emerges.[1] This phenomenon is illustrated both in the social and physical realm: similar to emerging markets and cities, politics seem to merge naturally out of the human condition. As the bureaucratic state matured throughout the 20th century, it produced its own characteristic set of mechanisms for "participatory democracy," including public notice and hearings, comment periods, and administrative appeals.

In terms of the evolving ecology of democracy, a new democratic life form is emerging in the open spaces left by the older, established democratic forms of representative, procedural, and direct democracy.[2] This movement toward a collaborative democracy is a direct response to some of the shortcomings of the late 20th-century framework of procedural democracy.[3] Whatever else public hearings might accomplish, they rarely result in democratic solutions.[4] Surprisingly, it is the stakeholders, who have battled each other in public hearings for decades, who are beginning to engage in serious, face-to-face problem solving.[5] Therefore a desire for authentically-engaged and constructive citizen involvement arose, producing new, less structured forms of deliberative and collaborative democracy. Multiparty collaborative natural resource and land management includes elements of alternative dispute resolution and deliberation, but also exhibits unique features that justify its treatment as a separate species of democracy. Specifically, the emergence of collaboration is also a reaction to the previously neglected importance of "place" when governing public lands. Because so much of the collaborative experience to this point is place-driven, it seems worthwhile to explore what there is about place-focused problems in land management that has produced so much of this emergent democratic form.

The Emergence of Collaborative Land and Natural Resources Management in the American West

To that end, we turn our attention to the remarkable spread of collaborative practices in our own place—the American West—and to a range of collaborative activities arising within this familiar setting. The West is characterized by contentious, fairly localized natural resource issues on or near public lands in the western states.[6] Our hope is that, by examining how collaboration has emerged and matured in this rather narrow niche of public land management, we can develop useful methodologies for studying what catalyzes, constrains, and sustains its existence (or for studying what might cause its failure to thrive) in other settings.

There are two especially salient components of this land management niche. One is literally ecological: these collaborations, without exception, revolve around the uses to be made of very specific landscapes, as well as the soil, water, flora, and fauna of those landscapes.[7] Part or all of each of these landscapes consist of public land, usually administered either by the U.S. Forest Service or the Bureau of Land Management.[8] In most cases, the parties to the collaboration include natural resource extractors and users of the public land in question on the one hand (timber or grazing interests, for example) and conservationists seeking to protect the land or the species inhabiting it on the other.[9] A fundamental feature of the dynamics behind collaboration in these cases is the simple fact that different people or interests have conflicting objectives for what should happen to one particular piece of land and its natural resources.

The second key component of this setting is the existing decision-making system that constitutes the governing framework for the public lands. This decision structure is remarkably complex, comprising a broad range of statutes such as the National Environmental Policy Act of 1969 ("NEPA"),[10] the

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Endangered Species Act of 1973 ("ESA"),[11] the National Forest Management Act of 1976 ("NFMA"),[12] the Federal Land Policy and Management Act of 1976 ("FLPMA"),[13] and the Federal Advisory Committee Act of 1972 ("FACA").[14] These statutes are further fleshed out by a corresponding and even more voluminous set of agency regulations, multiple layers of appeals (including frequent recourse to federal courts), and the case law emerging from that litigation.[15] This is the "procedural republic" in all its glory.[16]

The increasing problems with this governing framework have been extensively noted and analyzed. For example, former Secretary of the Interior Cecil Andrus describes the public land and natural resources governance system as "the tangled web of overlapping and often contradictory laws and regulations under which our federal public lands are managed."[17] Congressman Scott McInnis, former Chair of the Subcommittee on Forests and Forest Health, defines the system as "a decision-making apparatus that is on the verge of collapsing under its own weight."[18] Similarly, former Forest Service Chief Jack Ward Thomas calls this governing framework "a sort of blob,"[19] and in June 2002, Forest Service Chief Dale Bosworth presented to Congress a report entitled, "The Process Predicament," which describes the effects of regulatory and administrative gridlock on national forest management.[20] The report focused heavily on the Agency's increasing inability to fulfill its primary duties.[21] The undeniable fact remains that the current resolution processes for addressing natural resource conflicts on public lands simply do not work.

Collaborative democracy is emerging so profusely in this setting because many of the people with the greatest stakes in the landscapes in question find that the existing decision system cannot reconcile competing stakes in these resources as effectively as can the stakeholders themselves acting on their own initiative.[22] This response is especially rife in the vast reaches of the West where public lands and natural resources are so prevalent.[23] Here, in what is often referred to as the "public lands West," we have seen a steadily growing number of local agreements among environmentalists, ranchers, loggers, miners, and recreationists about how the public land and natural resources should be managed in their particular river drainage area or ecosystem.[24] More and more Westerners have come to realize that they can do better by their communities, economies, and ecosystems by working together outside of the established, centralized governing framework.[25] Accordingly, they have largely abandoned the cumbersome, uncertain, underfunded, and increasingly irrelevant mechanisms of that older structure.[26]

The collaboration movement is a pragmatic response to the slowly accumulating evidence that our historical experiment with proceduralism produces mixed results at best. The more statutory and regulatory layers added to any particular issue, the denser the maze and the higher the likelihood that the system will malfunction. Then, it is not surprising that the "public lands West," where more layers exist than anywhere else, is the place where the search for an alternative decision making structure is most active.[27] It is because the existing system is so pervasively and palpably unworkable out West that people are willing to put so much work into fashioning an alternative. It is this set of circumstances, above all, that is propelling the collaborative movement in the West.

There is simply too much at stake to let the prevailing system continue—and inevitably fail. As such, the collaborative method of resolving public land and natural resource issues has spread across the region evolving from a purely organic creation into its now-institutionalized state.[28] And although some agencies now promote collaboration in a variety of ways,[29] this has not established the method's foothold on the landscape at anyone's direction or by anyone's design; collaborative democracy remains almost entirely undirected and most often occurs without any official sanction or any clear way of connecting it to the existing decision structure.[30] Thus, we will begin our tour of this democratic evolution with the most feral examples of collaboration, and then move on to more domesticated instances.

The Quincy Library Group

The Quincy Library Group is a typical example of a collaborative effort that arose organically and originated outside the established governing structure. In Quincy, California, mutually dissatisfied with a management plan proposed by the Forest Service, a group of loggers, environmentalists, citizens, and local government officials from the area came up with an alternative five-year management plan to preserve old growth, endangered species habitats, and roadless areas for 2.5 million acres of forest surrounding Quincy, and also to keep the town's local sawmills in business.[31] Unable to persuade the Forest Service to adopt the plan through the traditional methods, the group enlisted the support of their congressional delegation and eventually got their bill through Congress in 1996.[32] Ultimately, the locally initiated collaboration created a congressionally binding resolution to the region's valuable timber resources.[33]

The Beaverhead–Deerlodge Partnership

The Beaverhead–Deerlodge Partnership is another example of the organic development of collaborative democracies. This Partnership emerged in response to the Forest Service's forest plan review, which the Forest Service is obligated to conduct at least every fifteen years.[34] In keeping with that requirement, the Forest Service published a new draft forest plan for the Beaverhead–Deerlodge National Forest of southwestern Montana in 2006.[35] But reactions to the draft plan were mixed.[36] Conservationists and timber interests had a shared history of deep antagonism, in which they had typically taken diametrically opposed positions at public hearings on anything proposed by the Forest Service.[37] Thus, the owners of the locally owned lumber mills still operating in the area, already hard-pressed by global competition, were concerned that the proposed plan would drive them out of business because it would not allow them to harvest enough timber from the national forest to keep their mills running.[38] Conservationists, on the other hand, were convinced that the proposed plan was short on wilderness designation and that the proposed fish and wildlife programs were not protective enough of threatened species.[39]

One local sawmill owner, Sherman Anderson, observed that environmental activism and Forest Service policy had reduced the amount of public timber coming into his sawmill from ninety percent of his feedstock to five percent.[40] Those supply problems, coupled with fierce competition from Canadian mills, had driven a steady stream of small sawmills out of business over the last few years.[41] Anderson, operating at a loss even before the bottom dropped out of the housing market in the recession of 2008, feared that he would be next.[42]

After years of conventional management tactics that resulted in this situation, representatives from five Montana lumber mills instead began meeting independently with local representatives from the National Wildlife Federation, the Montana Wilderness Association, and the Montana Trout Unlimited to explore whether they might collectively find more beneficial outcomes for forest management than those proposed by the Forest Service.[43] This collaborative effort became known as the Beaverhead–Deerlodge Partnership.[44] The partners found common ground after some of the conservationists acknowledged that logging itself was not necessarily bad for wildlife and water quality if it was conducted in the right way and at the right scale.[45] The timber interests, meanwhile, acknowledged the conservationists' view that substantial portions of the forest should not be logged, but would be better protected as wilderness.[46] The two sides hammered out ways to fit fish and wildlife restoration into a sustainable timber-harvesting program.[47] The Partnership's laborious efforts were eventually incorporated into legislation introduced by Senator Jon Tester, which is currently pending in Congress.[48]

The Blackfoot Challenge

As this kind of citizen-initiated collaboration has gained momentum in the public land and resources arena, government agencies have sometimes been invited to become collaborating partners. Consider, for example, the Blackfoot Challenge. This collaborative group that includes private landowners, federal and state land managers, local government officials, and corporate landowners now coordinates much of the management of the Blackfoot River, its tributaries, and adjacent public and private lands—approximately 2,400 square miles in western Montana.[49] Working together, the mission of the Blackfoot Challenge is "to coordinate efforts that conserve and enhance the natural resources and rural way of life throughout the watershed."[50] The Blackfoot Challenge is now known nationally as a collaborative model for preserving the wild beauty, ecological health, and natural resources of the watershed.[51]

When the Obama administration launched its America's Great Outdoors initiative in 2010, it staged its first public event on the ranch owned by Jim Stone, the chair of the Blackfoot Challenge board, as a way of underscoring how important the collaborative efforts of groups like this have become in the recent history of American conservation.[52] In a recent interview, Denny Iverson, the Challenge Board's Treasurer, explained that he moved with his parents from Minnesota to a Blackfoot Valley ranch in 1975.[53] He was in high school at the time, and he tells how his father, whose dream had long been to own a ranch in Montana, initially struggled to make this dream ranch profitable.[54] Many ranchers were already employing creative ways to preserve their properties. For example, like many of their neighbors, one way the Iverson's had kept their ranch in the black was by leasing some of the surrounding public land for their cattle to graze on.[55] As with hundreds of other ranchers across the West, the profitability of their ranch depended on the grazing resources of those leases.[56] But once public land grazing had become a target of several national environmental groups, these groups threatened the ranchers that their leases would not be renewed unless grazing could be done in an environmentally benign way.[57]

Another way the Iversons kept their ranch solvent was by spending a fair amount of time in the local woods, supplying timber to local sawmills.[58] Some of that timber came from private land, like their ranch, but some also came from Forest Service land.[59] As with public land grazing, some national environmental groups sought to end all commercial harvesting of timber from public land.[60] If successful, those efforts would have reduced the thin margin that supported the Iverson ranch and family. Ultimately, the family survived by collaborating with neighbors and local interests in the Blackfoot Challenge. Whether it was grazing or logging, the Iversons and their neighbors (including the neighboring sawmills) learned that they had to become conservationists to preserve their way of life. It is primarily the Blackfoot Challenge that enabled them to do that. Above all, i t has given them a new way of working with conservation organizations like the Nature Conservancy or Trout Unlimited, and with government agencies like the Forest Service.

Both federal and state land management agencies are seated on the Board of Blackfoot Challenge, and Iverson spends a lot of time working with them.[61] When asked whether his involvement with this collaborative group has changed his view of government, Iverson responded, "It's changed it in a big way. Before, I was just trying to scratch a living out of the ground. I was a pretty right-wing conservative, with very little use for government, especially the federal government."[62] Although he has not changed his core principles, he now recognizes that both he and the government agencies have changed since their initial consultations; Iverson considers himself to be more moderate than before, [63] and says that the agencies are "more efficient [and] more responsive."[64] Iverson attributes his involvement with the Blackfoot Challenge with enabling him to see the agency personnel as people who share similar community values.[65] According to Iverson, "When the meeting's over, we'll buy them a beer. In fact, we'd never have gotten to know each other so well if we hadn't started going to Trixie's Antler Saloon together."[66] Iverson and the Blackfoot Challenge have show "how government works—or maybe more important, how it can work."[67]

Here again, as with the Beaverhead-Deerlodge Partnership, a diverse group of citizens has taken the initiative to conserve a place that is near and dear to their hearts. As a result, the Blackfoot Challenge's mission statement, "to coordinate efforts that

conserve and enhance the natural resources and rural way of life throughout the watershed," has finally become a reality.[68]

The Valles Caldera Trust

At present, one of the strongest tributes to the effectiveness of collaboration in the public land and resource arena is the fact that the practice itself has become more often blessed, if not mandated, by both statutes and agency rules and procedures.[69] One good statutory example is the Valles Caldera Trust.[70] In 2000, Congress acquired the privately-owned Baca Ranch in northern New Mexico.[71] Instead of giving one of the existing land management agencies responsibility for this newly acquired public land, Congress mandated that "an experimental management regime should be provided by the establishment of a trust capable of using new methods of public land management that may prove cost-effective and environmentally sensitive."[72] Specifically, Congress established a diverse, multiparty governing board for the land and its natural resources and, in effect, mandated that it be managed collaboratively.[73] Given the initial success of the Valles Caldera Trust, Congress again called collaboration into play three years later in the Healthy Forests Restoration Act of 2003.[74] This shows that Congress has confidence in the various stakeholders' ability to "reduce wildfire risk to communities, municipal water supplies, and other at-risk Federal land through a collaborative process of planning, prioritizing, and implementing hazardous fuel reduction projects."[75]

Moving Towards Government-initiated Collaborative Land and Natural Resource Management

Following this trend toward governmental involvement, public land management agencies themselves now routinely invite or encourage collaboration among various stakeholders. To illustrate this type of collaboration, consider the ongoing process to develop a new planning rule for the Forest Service. The National Forest Management Act ("NFMA"), which governs land and resource management in the national forests, requires the Agency to develop plans for all national forests and grasslands.[76] The Forest Service adopted the first set of rules to guide the development of these plans in 1979.[77] Although the planning rules were revised in 1982, all four subsequent attempts to revise the rules have each failed.[78]

In 2009, at the direction of the Obama administration, the Forest Service launched yet another effort to revise and update the planning rules.[79] Collaboration has emerged as a hallmark of this new process. According to the official Forest Service website, the agency "is committed to developing a new planning rule that endures over time. We believe a transparent and participatory method is the best way to accomplish this. We'll be working hard to gather input collaboratively throughout the development of a new planning rule."[80]

This rulemaking approach is an example of how government agencies now frequently use collaboration. In this case, it is being used to develop administrative rules, but agencies also increasingly use collaboration to develop policy proposals, management plans, and site-specific work plans.[81] The government's use of collaboration is not limited to natural resources and environmental policy, and is increasingly invoked at every level—local, state, and federal—to formulate (via the legislative branch) and implement (via the executive branch) public policy.[82]

However, the transition of place-specific collaborative results into legislation remains problematic. One observer has noted, for example, "if replicated more broadly, the place-based approach to forest management could further disaggregate the National Forest system."[83] This concern was also echoed by Undersecretary of Agriculture Harris Sherman when he testified on Senator Tester's pending bill, noting that place-specific collaboration "establishes a potentially harmful precedent because it may lead to multiple site-specific legislative efforts transferring much needed resources from other units of the National Forest System where priority work must also be accomplished."[84] Here again, the difficulty may be viewed as a manifestation of the old problem of the few and the many. The perspective of a more broadly representative, but genuinely deliberative, public could be brought to bear on some of these conflicts, which could expand the range of public involvement without necessarily losing the problem solving impetus that has led to the collaborative solution in the first place. Integration of the enactment into legislation of place-based collaborative management into legislation, then, is both promising and problematic.

The one thing that contributes most significantly to the steady expansion of collaborative problem solving is the fact that, in so many circumstances, it works. And in fact, it works better than other available democratic mechanisms.[85] In evolutionary terms, this is a straightforward example of natural selection: what works well survives and thrives.[86] Collaboration has gained a foothold in certain niches of our political ecology because it brings a kind of selective advantage to those settings.

Conclusion

Although these government-sponsored efforts are a welcome addition to the ecology of democracy, they represent a qualitatively different kind of collaboration than the type of citizeninitiated collaboration illustrated by the Beaverhead–Deerlodge Partnership or the Blackfoot Challenge. Our experience has convinced us that, at least in the public lands arena, collaboration would never have been widely employed by agencies, let alone mandated by legislative bodies, had it not initially emerged in a completely organic, indirect way, and if it had not proven its viability on the challenging political landscape that produced it. It is this organic, citizen-initiated form of collaboration that we mean when we speak of "collaborative democracy."

Encouraging as the government adoption of collaborative methods may be, it also raises questions about how readily collaboration can be transposed into settings that vary substantially from those in which it emerged. To extend the ecological metaphor a step further, creating collaborative approaches to public land and resource issues by the use of legislation or administrative practice can be viewed as the equivalent of domesticating

animals or plants that originally emerged and evolved in the wild. Useful and often lovable as these domesticated species may be, it nevertheless remains true that a dog is not a wolf, nor is a cat a tiger. Thus, while we promote and encourage collaboration in a number of constrained institutional settings, the need to preserve space and if possible, native habitat, means that collaborative democracy must continue to flourish and evolve in its own organic, undirected way.[87]

Recall, for example, the Blackfoot Challenge, the landowner-based group in Montana that helps to coordinate the management of the Blackfoot River, its tributaries, and adjacent public and private lands.[88] The Challenge was organized locally, but known nationally as a model for preserving the rural character, ecological health, and natural beauty of its watershed.[89] It supports environmentally responsible resource stewardship through cooperation of private and public interests.[90] These interested parties all share a common vision of how the Challenge operates in the Blackfoot watershed, and all believe that success is most likely to result from building trust by working together.

The Blackfoot Challenge, however, is merely part of a grander scheme. It is a good example of how place-based collaborative efforts often "nest" within one another as the watershed lies within the much larger Crown of the Continent.[91] During the past eight years, a number of independent and complementary initiatives (including the Blackfoot Challenge) have emerged to promote conservation and community stewardship in this remarkable landscape.[92] These initiatives present the prospect of grander collaboration between individual collaborative coalitions.

The enticing possibility is that this nesting of networked, collaborative initiatives will evolve into new forms of governance. This is best described by Meg Wheatley and Deborah Frieze in "Using Emergence to Take Social Innovations to Scale," as a common phase in the process of emergence characterized by "the sudden appearance of a system that has real power and influence."[93] Further, Wheatley and Frieze explain how "[p]ioneering efforts that hovered at the periphery suddenly become the norm."[94]

This emerging system has profound implications for regional entrepreneurs. By better understanding the emergent properties of nested, place-based collaborative efforts in a locale like the Crown of the Continent, individuals and organizations will be better poised to mobilize political power and facilitate lasting change. Coincidentally, they can also develop and test new forms of governance, thinking regionally and acting at whatever spatial scale makes sense.

These, then, are some of the governance implications that seem to be manifesting in conjunction with the ongoing emergence of collaboration (especially place-based collaboration) as a democratic form. While it may be impossible to predict with any precision what exact forms of democratic governance might actually emerge, it seems clear that the better we understand the dynamics driving these exciting and promising developments, the better positioned we will be to encourage those most likely to advance both the cause of democracy and protection of America's natural resources.

Endnotes: Collaboration and the Ecology of Democracy

1 *See generally* John Cleveland, Innovation Network for Communities, Complexity Theory: Basic Concepts and Application to Systems Thinking (1994), *available at* http://www.slideshare.net/johncleveland/complexity-theory-basic-concepts/download (providing an overview of complex adaptive systems).

2 *E.g.*, Tischa A. Muñoz-Erickson, Bernardo Aguilar-González, & Thomas D. Sisk, *Linking Ecosystem Health Indicators and Collaborative Management: A Systematic Framework to Evaluate Ecological and Social Outcomes*, 12 Ecology & Soc'y 1, 1 (2007), http://www.ecologyandsociety.org/vol12/iss2/art6/ES-2007-2092.pdf (noting that collaboration is emerging as a "promising decision-making approach for resolving conflicts over the management of public lands and natural resources").

3 Donald Snow, *Coming Home: An Introduction to Collaborative Conservation, in* Across the Great Divide 1, 1–2 (Philip Brick et al. eds., 2001).

4 *See* Nat'l Research Council, Public Participation in Environmental Assessment and Decision Making 1, 9 (Thomas Dietz & Paul C. Stern, eds., 2008) (discussing the growing tension about the continuing efficacy of public participation in agency decisionmaking).

5 *See* Snow, *supra* note 3, at 3–6 (describing how collaborators were able to overcome gridlock among interested parties).

6 Snow, *supra* note 3, at 4–6.

7 *See* Ellen M. Williams & Paul V. Ellefson, Dep't of Forest Res., Paper No. 113, Natural Resource Partnerships: Factors Leading to Cooperative Success in the Management of Landscape Level Ecosystems Involving Mixed Ownership 1 (1996), http://www.forestry.umn.edu/prod/groups/cfans/@pub/@cfans/@forestry/documents/asset/cfans_asset_184413.pdf (discussing how land use goals have evolved to include ecological values).

8 *See About Us – Meet the Forest Service*, U.S. Forest Serv., http://www.fs.fed.us/aboutus/meetfs.shtml (last visited Nov. 3, 2011); *Land Use Planning*, Bureau of Land Mgmt., http://www.blm.gov/wo/st/en/prog/planning/planning_overview.html (last visited Nov. 3, 2011).

9 *See supra* note 3 and accompanying text.

10 National Environmental Policy Act of 1969, 42 U.S.C. § 4332 (2006).

11 Endangered Species Act of 1973, 16 U.S.C. §§ 1531–1544 (2006).

12 The National Forest Management Act of 1976, 16 U.S.C. §§ 1600–1614 (2006).

13 Federal Land Policy and Management Act of 1976, 43 U.S.C. §§ 1701–1782 (2006).

14 Federal Advisory Committee Act of 1972, 5 U.S.C. app. 2 §§ 1–16 (2006).

15 *See generally* Sarah Bates Van de Wetering, Pub. Policy Research Inst. of Univ. of Mont., Collaborative Governance Rep. No. 1, The Legal Framework for Cooperative Conservation (2006), http://cnrep.org/documents/by_author/bates/Final%20Legal%20Framework%20CC%20Report.pdf (providing an overview of public resource management laws).

16 *See generally* Michael J. Sandel, *The Procedural Republic and the Unencumbered Self*, 12 Pol. Theory 81 (1984) (noting how divisions of procedural authority at multiple levels make it difficult to reach workable solutions).

17 Cecil D. Andrus & John C. Freemuth, *Policy After Politics: How Should the New Administration Approach Public Land Management in the Western States?,* 21 J. Land Resources & Envtl. L. 1, 2 (2001).

18 *Conflicting Laws and Regulations: Gridlock on the National Forests, Oversight Hearing Before the Subcomm. on Forests and Forest Health of the H. Comm. on Res.*, 107th Cong. 2–3 (2001) (statement of Rep. Scott McInnis, Chairman, Subcomm. on Forests and Forest Health).

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Water Crisis in the Murray-Darling Basin: Australia Attempts to Balance Agricultural Need with Environmental Reality

by Joshua Axelrod

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adoption of the forthcoming Basin Plan and eventual compliance with its standards.[42] The MDBA faces the challenge of redirecting policy toward a future of sustainable water use that recognizes the vulnerability of the communities that will be affected most.[43] As the Guide's proposals are integrated into the forthcoming Basin Plan, the MDBA must show MDB communities how their input has been incorporated and how the central government's policy decisions have the communities' interests at heart.[44] As proposed by the Guide, the Basin Plan, and its implementation, must provide a viable framework for balancing these considerations in order to ensure future water resource security, economic stability, and necessary environmental rehabilitation.[45]

Weak Planning Process Frustrates Protection of Puerto Rico's Threatened Coastline

by Mark Borak

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the development of an island-wide master plan has been in the works for many years, but has been repeatedly delayed.[21] This legacy of poor planning has fostered the island's chronic sprawl, causing increased consumption of land even as population growth has slowed.[22] By drafting and enacting a long-range master plan focused on resolving the island's inefficient land use patterns and prioritizing natural resource conservation, policymakers have an opportunity to reverse this trend. Accompanied by transparency, public participation and gubernatorial accountability, the approval of a comprehensive master plan could represent the best hope of protecting finite natural resources and promoting sustainable economic development on one of the world's most densely populated islands.[23]

The Arctic Council: Gatekeeper or Doormat to the World's Next Major Resource Battle?

by Oded Cedar

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member-nations to establish the organization's binding powers. The permanent-observer nations should argue that the impacts of fossil fuel development are of global concern and affect all nations.[31] Therefore, proper safety and environmental standards are needed to ensure stable and sustainable development of the Arctic's natural resources, a goal to which the AC is already committed.

The permanent-observer nations should also seek more influence on the affairs of the AC in relation to fossil fuel development. Without usurping the position of the member-nations, the permanent-observer nations should demand some limited voting rights when the AC wishes to enact binding resolutions. Providing the permanent-observer nations with voting rights would allow more countries to voice their priorities and concerns, which may force the AC member-nations to consider the implications of their fossil fuel development plans on the global community.

If the AC member-states wish to take advantage of the benefits of climate change in the Arctic, they should do so in a manner that also honors their Ottawa commitments and the AEPS. The international community, then, should pressure the AC to make changes to its structure and provide effective oversight of fossil fuel extraction in the Arctic. In turn, the AC should respond by making the Ottawa Declaration binding and enforceable upon member-nations, allocating voting power to the permanent-observer nations, and effectuating the needed regulations.

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[46] *See* Open Society Initiative for Southern Africa, The Democratic Republic of Congo Effective Delivery of Public Services in the Education Sector 8 (2009).
[47] *Id*. at 4.
[48] *See* IPIS, *supra* note 19, at 10.
[49] *See* Bofin, *supra* note 21, at 26.
[50] *Id*.
[51] *Id*. at 27.
[52] *See* IPIS, *supra* note 19, at 62.
[53] *See* World Bank Institute, *Overview of WBI's Capacity Development and Results Framework* (June 1, 2011), http://wbi.worldbank.org/wbi/Data/wbi/wbicms/files/drupal-acquia/wbi/Overview%20of%20CDRF_June1.pdf.
[54] *Id*.
[55] *Id*.
[56] *Id*.
[57] *Id*.
[58] *Id*.
[59] *Id*.
[60] *See* USAID, *supra* note 35.
[61] *See* IPIS, *supra* note 19, at 67, 71-72.
[62] *See* The Congo Basin Forest Partnership, *The Forests of the Congo Basin — State of the Forest 2006*, 17-18 (2006), http://www.gtz.de/de/dokumente/en-state-of-forests-congo-basin-2006.pdf.
[63] *Id*.
[64] *Id*.
[65] *See* Laurent Debroux et al. (eds.), *Forests in Post-Conflict Democratic Republic of Congo: Analysis of a Priority Agenda* 56 (2007).
[66] *Id*. at 25-38.
[67] *Id*. at 21-24.
[68] *Id*. at 21.
[69] *Id*. at 4-6.
[70] *See* Bofin, *supra* note 21, at 24-25.
[71] *Id*. at 30.
[72] *See* Patricia Kameri-Mbote et al., Effective Natural Resource Management for Conflict Prevention: Tethering Plural Legal Norms in Diverse Contexts in Eastern Africa (2007), http://www.asareca.org/paap/uploads/publications/Effective%20Natural%20Resource%20Management%20for%20Conflict%20Prevention.pdf.
[73] *See id*.
[74] *See* United Nations Expert Group Meeting on Natural Resources and Conflicts in Africa: Transforming a Peace Liability into a Peace Asset, Cairo, Egypt, June 17-19, 2006, https://www.un.org/africa/osaa/reports/Natural%20Resources%20and%20Conflict%20in%20Africa_%20Cairo%20Conference%20ReportwAnnexes%20Nov%2017.pdf.
[75] *See Overview, Democratic Republic of Congo – Forest and Nature Conservation Projects*, World Bank (2009), http://web.worldbank.org/external/projects/main?Projectid=P100620&theSitePK=40941&piPK=64290415&pagePK=64283627&menuPK=64282134&Type=Overview (last visited Nov. 10, 2011).
[76] *Id*.
[77] *See* African Development Bank, Geographically Integrated Econmakala + REDD Pilot Project, Project Appraisal Report (2010), http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/RDC%20-%20Approved%20-%20Gographically%20integrated%20Ecomakala%2B%20REDD%20pilot%20project.pdf.
[78] *Id* at 5.
[79] *Id* at 6.
[80] *Id*.
[81] *What is EITI?,* Extractive Industries Transparency Initiative, http://eiti.org/eiti, (last visited Nov. 10, 2011).
[82] *Democratic Republic of Congo, Candidate Country*, Extractive Industries Transparency Initiative, http://eiti.org/DRCongo (last visited Nov. 10, 2011).
[83] *Id*.
[84] Rainbow Insight, Evaluating the EITI's Impact on the Transparency Of Natural Resource Revenues (2009) http://eiti.org/files/Rainbow%20Insight%20Report.pdf
[85] *Id*. at 6.
[86] *Id*.
[87] Daniel Feldman, *Conflict Diamonds, International Trade Regulation, and the Nature of Law*, 24 U. Pa. J. Int'l. Econ. L. 835 (2003).
[88] *What is the Kimberley Process*? Kimberley Process, http://www.kimberleyprocess.com/home/index_en.html, (last visited Nov. 10, 2011).
[89] *Id*.
[90] IPIS, *supra* note 119, 64-65, 67.
[91] *See* Hubert André-Dumont et al., Democratic Republic of Congo, in Mining in 35 jurisdictions worldwide 62 (2011), http://www.mcguirewoods.com/news-resources/publications/international/mining-drcongo.pdf.
[92] *Id*.
[93] *OECD Seeks to Integrate Conflict Minerals Rules*, International Tin Research Initiative (Jul. 2011), http://www.itri.co.uk/index.php?option=com_zoo&task=item&item_id=1950&Itemid=177.
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[100] *See* Ian Gary & Terry L. Karl, Bottom of the Barrel: Africa's Oil Boom and the Poor18-19 (2003) http://www.arts.ualberta.ca/~courses/PoliticalScience/474A1/documents/IanGaryandTerryLynnKarlBottomoftheBarrelAfricaOilPoor.pdf.
[101] *Id*.
[102] *Id*. at 48.
[103] *Id*.
[104] *Biodiversity Conservation in Regions of Armed Conflict: Protecting World Heritage in the Democratic Republic of the Congo,* UNESCO, http://whc.unesco.org/en/congobiodiversity/ (last visited Nov. 10, 2011).
[105] *Id*.
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[107] *Id*.
[108] *See* Tony Mokombo, Technical Report Presented to the US AID for the Period of April 1, 2000 – October 31, 2000, Africa Regional Program for the Environment ("CARPE") (2000), http://pdf.usaid.gov/pdf_docs/PDABS845.pdf.
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[114] *See* De Koning, *supra* note 98, at 5.

[115] *See* IPIS, *supra* note 19, at 71-72.
[116] *See* Meike Westerkamp et al., Regional Cooperation in the Great Lakes: A Contribution to Peacebuilding? (2009), http://www.initiativeforpeacebuilding.eu/pdf/Regional_Cooperation_in_the_Great_Lakes_region.pdf.
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[118] Stephanie Matti, *The Democratic Republic of Congo? Corruption, Patronage, and Competitive Authoritarianism in the DRC*, 56 Afr. Today No.4 (2010).
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[12] *See The Science Used in Developing Water Requirements for the Basin Plan*, The Murray-Darling Basin Auth., http://mdba.gov.au/draft-basin-plan/science-draft-basin-plan/science-used-water (last visited Oct. 31, 2011).
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[15] *See Draft Basin Plan*, The Murray-Darling Basin Auth., http://mdba.gov.au/draft-basin-plan.
[16] *Murray-Darling Basin Authority*, *supra* note 11.
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[29] *See* Karen Robertson, Opinion Submission Letter on MDBA Plan, http://www.mdba.gov.au/files/submissions/Karen%20Robertson.pdf (last visited Nov. 6, 2011).
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[32] *See generally* Janet C. Neuman, *Drought Proofing Water Law*, 7 U. Denv. Water L. Rev. 92, 92-110 (2003) (discussing the impact of current water use law and policy on drought-prone western states and the need for a rethinking of water use policy that addresses water allocation rights, crop planning, subsidies, efficiency, conservation, data collection and monitoring, with a goal of "greater appreciation of water as a precious and finite resource").
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[34] *About the Basin*, *supra* note 2.
[35] EBC et al., *supra* note 20, at 7.
[36] Marsden Jacob Assocs. et al., *supra* note 13, at xv.
[37] EBC et al., *supra* note 20, at 4.
[38] *Id*. at 11.
[39] *Id*. at 4.
[40] *Id*. at 11.
[41] *See generally* Alon Tal, *Seeking Sustainability: Israel's Evolving Water Management Strategy*, 313 Science 1081, 1081-1084 (2006) (examining Israel's ongoing water use management challenges due to a fundamental lack of water resources and the innovations and policies that have allowed per capita water usage to remain flat for forty years despite a continuing rise in the standard of living).
[42] EBC et al., *supra* note 20, at 12.
[43] *See generally* Wentworth Group of Concerned Scientists, The Urgent Provision of Water to the Coorong and Lower Lakes (2008), http://www.wentworthgroup.org/uploads/1.%20Urgent_Provision_of_Water.pdf (urging significant reductions in water usage within the Murray-Darling Basin to minimize the environmental and economic damage from overuse of water resources).
[44] *See generally* Robin Gregory et al., *Bringing Stakeholder Values into Environmental Policy Choices: A Community-based Estuary Study Case*, 39 Ecological Economics 37, 37-52 (2001) (examining past environmental policy failures due to a lack of community input or involvement, controversial science, and the promise to use minimal funding wisely and proposing a model for future success in community involvement in development and implementation of water management policy).
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[37] *The UN Organization Stabilization Mission in the Democratic Republic of Congo*, UN Peacekeeping, http://www.betterworldcampaign.org/un-peacekeeping/missions/democratic-republic-of-congo.html (last visited Nov. 21, 2011).

[38] Philippe Le Billon, Ctr. on Int'l Cooperation & Political Econ. Research Inst., Resources for Peace? Managing Revenues from Extractive Industries in Post-Conflict Environments 3 (2008), http://www.peri.umass.edu/fileadmin/pdf/working_papers/working_papers_151-200/WP167.pdf.

[39] Peacekeepers intervened, for example, in the clashes between local youths and demobilized rebel soldiers during the 2001 diamond rush in Koidu, Sierra Leone's diamond capital. Le Billon, *supra* note 38 at 3-4.

[40] This reluctance was despite the fact that the mandate included coordinating with, and assisting, Sierra Leonean law enforcement in the discharge of its responsibilities. *Sierra Leone UNAMSIL Mandate,* UNAMSIL, http://www.un.org/en/peacekeeping/missions/past/unamsil/mandate.html (last visited nov. 21, 2011).

[41] Le Billon, *supra* note 38, at 3.

[42] *Id.*

[43] *Id.* at 3-4.

[44] *Id.*

[45] *See generally* Sarah Meek, *Policing Sierra Leone, in* Sierra Leone: Building the Road to Recovery 105-16 (Institute of Security Studies ed., 2003).

[46] S.C. Res. 1509, § 3(r), U.N. Doc. S/RES/1509 (Sep. 19, 2003).

[47] U.N. S.C. Rep. of the Panel of Experts Pursuant to Paragraph 25 of the Security Council Resolution 1478 (2003) Concerning Liberia, ¶¶ 26-34, U.N. Doc. S/2003/779 (Aug. 7, 2003).

[48] The deployment of UNAMSIL, in contrast, was delayed in part because the RUF maintained control of diamond-rich territories, notably in Kono District. Philippe Le Billon, Int'l Inst. for Strategic Studies, Fuelling War: Natural Resources and Armed Conflicts 34 (2005).

[49] *Id*.

[50] Global Witness, Resource Curse or Cure? Reforming Liberia's governance and logging industry 2 (2004).

[51] Philippe Le Billon, *Getting It Done: Instruments of Enforcement, in* Natural Resources and Violent Conflict: Options and Actions 215, 248 (Ian Bannon & Paul Collier, eds., 2003).

[52] Global Witness, Open Letter to the UN Security Council, regarding conflict resources and peacekeeping in Liberia and the Democratic Republic of Congo (DRC) (2005), http://www.globalwitness.org/sites/default/files/import/Open%20letter%20to%20Security%20Council.doc.

[53] The unit has also helped the mission to minimize the environmental impact of peacekeeping operations and has conducted an environmental baseline survey, among other activities. *See* Environment and Natural Resources Unit, United Nations Mission in Liberia (2004), http://unmil.org/2content.asp?sub=31&main=20&pgt=2.

[54] *See* U.N. S.C. Rep. of the Panel of Experts Pursuant to Paragraph 2 of Security Council Resolution 1549 (2004) Concerning Liberia, ¶ 9, U.N. Doc. S/2004/955 (Dec. 6, 2004), http://allafrica.com/download/resource/main/main/idatcs/00010356:c529cbb6086a1044e994d0d48ca07ea5.pdf.

[55] *Id.* at ¶¶ 98 – 102.

[56] Andreu Solà-Martín, *Liberia: security challenges, development fundamentals* 32 Third World Quarterly 1217, 1222 (2011).

[57] UN sanctions were imposed on diamond exports from 2001 to 2007, and on timber exports from 2003 to 2006. *See* S.C. Rep., *supra* note 54, at ¶¶ 24, 97; Robert Powell & Mohamed Yahya, Int'l Alert, The current state of diamond mining in the Mano River region and the use of diamonds as a tool for peace building and development 10, 26-27, 31 (2006).

[58] UNMIL Statement, *UNMIL deploys extra security in Firestone Rubber Plantation and urges restraint,* United Nations Mission In Liberia (Dec. 7, 2007), http://unmil.org/1article.asp?id=2570&zdoc=1.

[59] *Africa Update*, Sapa-AFP (Apr. 19, 2007), http://www.minesandcommunities.org/article.php?a=115.

[60] *See* S.C. Res. 1279, U.N. Doc. S/RES/1279 (Nov. 30, 1999).

[61] The DRC is part of the Kimberley Process Certification Scheme; thus, its official exports ought to exclude diamonds that come from rebel-controlled areas. David Cortright & George A. López, International Peace Academy, Sanctions and the search for security: challenges to UN action 189 (2002).

[62] S.C. Res. 1856, U.N. Doc. S/RES/1856, at 4 (Dec. 22, 2008), http://www.undemocracy.com/S-RES-1856%282008%29.pdf.

[63] *Id.* at 5.

[64] *See* S.C. Res. 1857, U.N. Doc. S/RES/1857 (2008); S.C. Res. 1807, U.N. Doc. S/RES/1804 (2008); U.N. S.C. Rep. of the Panel of Experts on Liberia Submitted Pursuant to Paragraph 4 of Security Council Resolution 1854 (2008) ¶ 2, U.N. Doc. S/2009/290 (2009).

[65] Global Witness, Faced with a gun, what can you do? War and the militarization of mining in Eastern Congo 25-26 (2009).

[66] *See* Le Billon, *supra* note 18 at 2-3.

[67] Some regional and UN peacekeeping units have allegedly been involved in resource trafficking ;thus, there is the additional risk that, through closer involvement with conflict resources, UN personnel will become embroiled in corruption. Matthias Basanisi, Op-Ed., Who Will Watch the Peacekeepers?, N.Y. Times (May 23, 2008), http://www.nytimes.com/2008/05/23/opinion/23basanisi.html.

[68] *See generally* Philippe Le Billon, Center on Int'l Cooperation, *Resources for peace? Managing revenues from extractive industries in post-conflict environments* 3 (2008).

[69] U.N. Charter art. 33, para. 1.

[70] S.C. Res., *supra* note 62, at 4.

[71] *Id.*

[72] *See, e.g.,* United Nations, *Liberia: Development challenges top agenda as the nation recovers from years of civil strife,* http://www.un.org/events/tenstories/06/story.asp?storyID=2100 (last visited, Dec. 4, 2011).

[73] *See, e.g.,* Le Billon, *supra* note 38 at 3.

[74] Given the wide variations in the behavior of individual missions or elements within those missions, the review provided in this chapter is only preliminary; a systematic assessment of the involvement of UN missions in resource sectors could contribute to more effective future peacekeeping operations. Corene Crossin et al., Where did it come from? Commodity tracking systems, in Natural Resources and Violent Conflicts: Options and Actions 97, 125 (Ian Bannon & Paul Collier eds., 2003).

[75] *See* Ian Smillie, VERIFOR Case Study — The Kimberley Process for Diamonds 2 (2005) (showing that Russia was initially very reluctant to support and participate in the Kimberley Process Certification Scheme because it viewed transparency about production volume and diamond prices as an infringement on its sovereignty and commercial interests).

[76] Le Billon, *supra* note 68, at 10.

[77] Greg Muttitt, Crude Designs: The rip-off of Iraq's oil wealth 7 (2005).

[78] James Burk, *Public Support for Peacekeeping in Lebanon and Somalia: Assessing the Casualties Hypothesis,* 114 Pol. Sci. Q. 53, 54 (1999).

[79] David Cortright & George A. López, *supra* note 61, at 156.

[80] Le Billon, *supra* note 68, at 9.

[81] Most accusations of resource appropriation have been made under the following circumstances: when mining was being undertaken by mercenary companies, as was the case with the South African mercenary group Executive Outcomes, in the mid-1990s; when neighboring countries have conducted military interventions, as both Uganda and Rwanda did during the late 1990s, in the former Zaire/DRC; and when non-UN-mandated foreign military interventions have been conducted, as was the case with the United States in Colombia and Iraq. Concerns about resource appropriation may be valid for UN-mandated peacekeeping contributors with large mining investments. In the case of the DRC, relative stability in the most significant mining areas, especially in Katanga, may have contributed to the neglect of "local" violence, most of which was concentrated in the eastern part of the country and affected artisanal mining. As long as key mining projects were not under threat, the country was considered "at peace." *See* Le Billon, *supra* note 51, at 26, 34, 83; Séverine Autesserre, *Local Violence, National Peace? Postwar "Settlement" in the Eastern D. R. Congo (2003-2006),* 49 Afr. Stud. Rev. 1, 5 (2006).

[82] Potential alternatives include targeted interventions at key sites, and backing for judicial procedures against traders involved in conflict-resource trafficking. Le Billon, *supra* note 68, at 10-11.

[83] For example, Jean-Marie Guéhenno, Special Representative of the Secretary General for Peacekeeping Operations, has stressed that peacekeeping deployment should take mining areas into account, a consideration that he considered particularly important in the case of the DRC (UNSC 2007). U.N. Env't Programme [UNEP], *From Conflict to Peacebuilding: The Role of Natural Resources and the Environment* at 8, DEP/1079/GE (Feb., 2009).

[84] *See* Michael Ross, *The Natural Resource Curse: How Wealth Can Make You Poor, in* Natural Resources and Violent Conflicts: Options and Actions 17, 24-32, 233-34, 243 (Ian Bannon & Paul Collier eds., 2003).

[85] *Id.*

[86] *See, e.g.,* S.C. Res. 1643, ¶ 9, U.N. Doc. S/RES/1643 (Dec. 15, 2005).

[87] U.N. S.C. Rep. of the Secretary-General on inter-mission cooperation and possible cross-border operations between the United Nations Mission in Sierra Leone, the United Nations Mission in Liberia and the United Nations Operation in Côte d'Ivoire, ¶ 11, U.N. Doc. S/2005/135 (Mar. 2, 2005).

[88] Jeremy M. Weinstein, Inside Rebellion: The politics of insurgent violence 347 (2007).

[89] *Id*.

[90] This was the case, for example, in Sierra Leone, where the RUF maintained control of the Kono diamond mines. Resources are not the only consideration, however. In Angola, UNITA units moved from diamond-rich areas to the homeland of its leader—a choice that was criticized from within the movement. Weinstein, *supra* note 87 at 9.

[91] *Id*. at 347.

[92] *See generally* Macartan Humphreys, Natural Resources, Conflict, and Conflict Resolution: Uncovering the Mechanisms, 49 J. of Conflict Resol., No.4 508 (2005), http://www.columbia.edu/~mh2245/papers1/MH8JCR05_paper.pdf.

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[1] *See, e.g., Regulatory Impediments to Job Creation: Hearing Before the H. Comm. on Oversight & Gov't Reform,* 112th Cong. (2011).

[2] Currency Exchange Rate Oversight Reform Act of 2011, S. 1619, 112th Cong. (2011) (proposing to identify and correct misaligned currency).

[3] Robert E. Scott, Econ. Policy Inst., Briefing Paper No. 323, Growing U.S. Trade Deficit With China Cost 2.8 Million Jobs Between 2001 and 2010, at 1 (2011).

[4] *E.g.*, Emily Coppel, Am. Sec. Project, Rare Earth Metals and U.S. National Security 2 (2011), *available at* http://americansecurityproject.org/wp-content/uploads/2011/02/Rare-Earth-Metals-and-US-Security-FINAL.pdf.

[5] *See* Marc Humphries, Cong. Research Serv., R41347, Rare Earth Elements: The Global Supply Chain 3 (2011) (explaining how the demand for rare earths is "derived" from the demand for the final products in which the minerals are used).

[6] *See id.* at 2; Coppel, *supra* note 4, at 2 (stating that cheap labor and lax environmental regulations are two factors that "make it much more economical to mine and produce rare earth metals in China").

[7] *E.g.*, Humphries, *supra* note 5, at 13.

[8] Stormy-Annika Mildner & Gitta Lauster, *Settling Trade Disputes over Natural Resources: Limitations of International Trade Law to Tackle Export Restrictions*, 3 Goettingen J. Int'l L. 251, 254 (2011).

[9] *See* Joanna Bonarriva, Michelle Koscielski, & Edward Wilson, *Export Controls: An Overview of Their Use, Economic Effects, and Treatment in the Global Trading System* 6–7 (U.S. Int'l Trade Comm'n, Working Paper No. ID-23, 2009).

[10] *See* Cindy Hurst, Inst. for the Analysis of Global Sec. [IAGS], China's Rare Earth Elements Industry: What Can the West Learn? 24–25 (2010) (discussing China's plan to stockpile rare earth minerals ("REMs")).

[11] *China's Monopoly on Rare Earths: Implications for U.S. Foreign and Security Policy: Hearing Before the Subcomm. on Asia & the Pacific of the H. Comm. on Foreign Affairs*, 112th Cong. 1 (2011) [hereinafter *Hearing*] (statement of Rep. Donald A. Manzullo, Chairman, Subcomm. on Asia & the Pacific) (explaining how "the pricing uncertainty created by [China's] action threatens tens of thousands of American jobs"); *see also* Gao Changxin, *Rare Earth's Surging Price*, China Daily (Nov. 17, 2010, 15:13), http://www.chinadaily.com.cn/bizchina/2010-11/17/content_11564412.htm (discussing how foreign companies that open processing plants in Baotou will help "transform it from a resource base into a hightechnology center").

[12] Panel Report, *China – Measures Related to the Exportation of Various Raw Minerals*, WT/DS394/R (July 5, 2011).

[13] The General Elimination of Quantitative Restrictions provides: "No prohibitions or restrictions other than duties, taxes or other charges . . . shall be instituted or maintained by any contracting party on the . . . exportation or sale for export of any product destined for the territory of any other contracting party." General Agreement on Tariffs and Trade, Oct. 30, 1947, art. XI ¶ 1, 61 Stat. A-11, 55 U.N.T.S. 194.

[14] Panel Report, *China – Measures Related to the Exportation of Various Raw Minerals*, WT/DS394/R (July 5, 2011).

[15] Mildner & Lauster, *supra* note 8, at 272–73 (quoting *China Defends Export Restrictions*, BBC News (Nov. 5, 2009), http://news.bbc.co.uk/2/hi/business/8344053.stm).

[16] *See* Panel Report, *China – Measures Related to the Exportation of Various Raw Minerals*, WT/DS394/R, ¶ 7.148 (July 5, 2011) (stating that even had the exceptions applied, China did not meet the requirements necessary to claim the exceptions as a defense).

[17] As speculated, China filed an appeal on August 31, 2011. *E.g.*, Mary Swire, *China Appeals WTO Ruling on Raw Material Exports*, Tax-News.com (Sept. 5, 2011), http://www.tax-news.com/news/China_Appeals_WTO_Ruling_On_Raw_Material_Exports____51268.html.

[18] *See* Richard Jones, *Exclusive: Inside China's Secret Toxic Unobtainium Mine,* Daily Mail Online (Jan. 10, 2010, 11:19 AM), http://www.dailymail.co.uk/news/article-1241872/EXCLUSIVE-Inside-Chinas-secret-toxic-unobtainium-mine.html (describing the lack of labor and environmental regulation at Baiyun Obo mine and reporting that China is "restricting supply to force manufacturers to bring their factories and technological secrets to China").

[19] *See generally* Justin Paul & Gwenette Campbell, U.S. Envtl. Prot. Agency, Doc. No. 908R11003, Investigating Rare Earth Element Mine Development in EPA Region 8 and Potential Environmental Impacts (2011) (providing background on REMs and exploring mining potential in the United States).

[20] *See* Ariel Schwartz, *Can the U.S. Break China's Stranglehold on Rare Earth Metals?,* Fast Company.com (Aug. 16, 2011), http://www.fastcompany.com/1773009/how-the-us-could-end-up-with-a-plentiful-cheap-supply-of-rare-earth-metals; Humphries, *supra* note 5, at 14.

[21] *E.g.*, Humphries, *supra* note 5, at 14–16.

[22] *See, e.g., Hearing*, *supra* note 11, at 50 (statement of Mark A. Smith, President & CEO, Molycorp, Inc.) (explaining that Molycorp's plan to expand facilities at Mountain Pass, which is often called "Project Phoenix," will cost $781 million).

[23] *See* Humphries, *supra* note 5, at 13–15. Of the five stages in the REM supply chain—"mining, separation, refining, alloying, and manufacturing (devices and component parts)"—the U.S. is currently only capable of mining and separation. *Id*. at 13.

[24] *See* Brooke Infusino, *Molycorp Minerals LLC,* Exploration Processing, http://www.exploration-processing.com/cms2/index.php?option=com_content&view=article&id=962:molycorp-minerals-llc&catid=130&Itemid=84 (last visited Nov. 12, 2011) (reporting that Molycorp Minerals LLC's General Manager, Rocky Smith, has stated that "[r]estarting rare earth mineral mining at Molycorp could generate thousands of new jobs for all of the support businesses and as many as 900 new jobs at Molycorp Minerals").

[25] Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 1502, 124 Stat. 1376, 2213–18 (2010) (to be codified at 15 U.S.C. § 78m).

[26] Conflict Minerals, 75 Fed. Reg. 80,948 (Dec. 23, 2010) (to be codified at 17 C.F.R. pts. 229, 249).

[27] *Id*.

[28] *See* S.E. Smith, *Dirty, Dangerous and Destructive—The Elements of a Technology Boom*, Guardian (Sept. 26, 2011, 9:00 EDT), http://www.guardian.co.uk/commentisfree/2011/sep/26/rare-earth-metals-technology-boom (explaining that the environmental damage caused by rare earth minerals occurs at two levels: (i) during the extracting, processing, and refining stages, and (ii) after consumers have discarded, rather than recycled, the products).

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[4] Int'l Monetary Fund ("I.M.F."), *Algeria*, Country Rep. No. 05/51 (Feb. 2005); *Angola*, Country Rep. No. 07/355 (Oct. 2007); *Sudan*, Country Rep. No. 11/86 (Apr. 2011); *Sierra Leone*, Country Rep. No. 09/12 (Jan. 2009); *Chad*, Country Rep. No. 10/196 (June 2010); *Iraq*, Country Rep. No. 11/75 (Mar. 2011); *Socialist People's Libyan Arab Jamahiriya*, Country Rep. No. 08/301 (Sept. 2008); *Nigeria*, Country Rep. No. 11/57 (Feb. 2011); *Niger*, Country Rep. No. 09/70 (Feb. 2009); *Côte d'Ivoire*, Country Rep. No. 10/228 (July 2010); *Central African Republic*, Country Rep. No. 10/332 (Oct. 2010); Sean Turnell, *Finding Dollars and Sense: Burma's Economy in 2010, in* Finding Dollars, Sense, and Legitimacy in Burma (Susan Levenstein ed., 2010).

[5] I.M.F., *Algeria*, Country Rep. No. 05/51 (Feb. 2005); *Angola*, Country Rep. No. 07/355 (Oct. 2007); *Sudan*, Country Rep. No. 11/86 (Apr. 2011).

[6] I.M.F., *Sierra Leone: Selected Issues and Stat. Appendix*, IMF Country Rep. No. 09/12 at 55 (Jan. 2009), http://www.imf.org/external/pubs/ft/scr/2009/cr0912.pdf.

[7] I.M.F., *Chad: 2010 Art. IV Consultation: Staff Rep; Staff Supp.; Pub. Info. Notice on the Exec. Bd. Discussion; and Statement by the Exec. Dir. For Chad*, IMF Country Rep. No. 10/196 at 5, 7 (June 2010), http://www.imf.org/external/pubs/ft/scr/2010/cr10196.pdf; I.M.F., *Iraq: Second Rev. under the Stand-By Arrangement, Requests for Waiver of Applicability, Extension of the Arrangement, and Rephasing of Access – Staff Rep; Press Release on the Exec. Bd. Discussion; and Statement by the Exec. Dir. for Iraq*, IMF Country Rep. No. 11/75 at 4-5 (Mar. 2011), http://www.imf.org/external/pubs/ft/scr/2011/cr1175.pdf; I.M.F., *Socialist People's Libyan Arab Jamahiriya: Stat. Appendix*, IMF Country Rep. No. 08/301 at 4-5 (Sept. 2008), http://www.imf.org/external/pubs/ft/scr/2008/cr08301.pdf.

[8] I.M.F., *Niger: Selected Issues and Stat. Appendix*, IMF Country Rep. No. 09/70 at 100 (Feb. 2009), http://www.imf.org/external/pubs/ft/scr/2009/cr0970.pdf.

[9] I.M.F., *Côte d'Ivoire: Second Rev. under the Three-Year Arrangement under the Extended Credit Facility, Request for Waivers of Nonobservance of Performance Criteria, and Financing Assurances Rev. - Staff Rep.; Staff Statement; Press Release on the Exec. Bd. Discussion; and Statement by the Exec. Dir. for Côte d'Ivoire*, IMF Country Rep. No. 10/228 at 9 (July 2010), http://www.imf.org/external/pubs/ft/scr/2010/cr10228.pdf.

[10] I.M.F., *Central African Republic: Sixth Rev. under the Arrangement under the Extended Credit Facility and Fin. Assurances Rev. – Staff Rep; Debt. Sustainability Analysis; Staff Supp.; Press Release on the Exec. Bd. Discussion; and Statement by the Exec. Dir. For Central African Republic*, IMF Country Rep. No. 10/332 at 5 (Oct. 2010), http://www.imf.org/external/pubs/ft/scr/2010/cr10332.pdf.

[11] *See* Sean Turnell, *Finding Dollars and Sense: Burma's Economy in 2010, in* Finding Dollars, Sense, and Legitimacy in Burma, 29 (Susan Levenstein ed., 2010).;.

[12] For end dates of conflicts *see generally* Nils Petter Gleditsch et al., *Armed Conflict 1946-2001: A New Dataset*, 39 J. of Peace Res. 61 (2002); Lotta Harbom & Peter Wallensteen, *Armed Conflicts, 1946-2009*, 47 J. of Peace Res. 501 (2010). For all other data *see* I.M.F., *Republic of Yemen*, Country Rep. No. 01/61 (Apr. 2001); *Algeria*, Country Rep. No. 05/51 (Feb. 2005); *Angola*, Country Rep. No. 07/355 (Oct. 2007); *Socialist People's Libyan Arab Jamahiriya*, Country Rep. No. 08/301 (Sept. 2008); *Niger*, Country Rep. No. 09/70 (Feb. 2009); *Chad*, Country Rep. No. 10/196 (June 2010); *Colombia*, Country Rep. No. 10/156 (May 2010); *Côte d'Ivoire*, Country Rep. No. 10/228 (July 2010); *Democratic Republic of the Congo*, Country Rep. No. 10/11 (Jan. 2010); *Iraq*, Country Rep. No. 11/75 (Mar. 2011); *Nigeria*, Country Rep. No. 11/57 (Feb. 2011); *Sudan*, Country Rep. No. 11/86 (Apr. 2011). Numbers in parentheses indicate the year for which the data were obtained. Where there are two columns instead of three, the data for the third column were unavailable. For post-conflict countries, data were obtained for the year following the end of hostilities or for the first year for which they were available. (In some cases, conflict reignited after the period included in the figure.) For conflict-affected countries, the data are for the latest year for which they were available. Country data reflect various resource sectors, as follows: Algeria, oil and gas; Angola, oil, gas, and diamonds; Chad, Colombia, Libya, Nigeria, Sudan, and Yemen, oil and gas; Côte d'Ivoire, oil, gas, and coffee; the Democratic Republic of the Congo (DRC), mining; Iraq, oil and gas. For Niger, export share data are based on uranium and gold, government revenues data are based on uranium, and gross domestic product data are based on mining.

[13] *See generally* U.N. Env't Programme, *supra* note 2.

[14] Paul Collier & Anke Hoeffler, *Greed and Grievance in Civil War*, 56 Oxford Econ. Papers 563, 588 (2004).

[15] U.N. Secretary-General, *Report of the Secretary-General on Peacebuilding in the Immediate Aftermath of Conflict*, U.N. Doc. A/63/881-S/2009/304 (June 11, 2009), http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N09/367/70/PDF/N0936770.pdf?OpenElement; *see also* World Bank, *World Development Report 2011* (2011), http://wdr2011.worldbank.org/sites/ default/files/pdfs/WDR2011_Full_Text.pdf.

[16] The conceptual framework adopted in this book draws substantially from the *Report of the Secretary-General on Peacebuilding in the Immediate Aftermath of Conflict* (U.N. Secretary-General 2009), but the activities have been regrouped and supplemented by activities articulated in *Guiding principles for stabilization and reconstruction, Humanitarian Charter and Minimum Standards in Disaster Response* (Sphere 2011), *Civilian capacity in the aftermath of conflict and From Conflict to Peacebuilding: The Role of Natural Resources and the Environment*. See U.N. Secretary-General, *Report of the Secretary-General on peacebuilding in the immediate aftermath of conflict*, 29, U.N. Doc. A/63/881-S/2009/304 (June 11, 2009); U.S. Inst. of Peace and U.S. Army Peacekeeping & Stability Operations Inst., *Guiding principles for stabilization and reconstruction* 146 (2009), www.usip.org/ publications/guiding-principles-stabilization-and-reconstruction; Sphere, Humanitarian Charter and Minimum Standards in Disaster Response, Sphere Project, http://www.sphereproject.org/content/view/720/200/lang (last visited Oct. 31, 2011); U.N., *Civilian Capacity in the Aftermath of Conflict: Independent Report of the Senior Advisory Group* (Mar. 2011), www.civcapreview.org/LinkClick.aspx?fileticket=K5tZZE99vzs%3d&tabid=3188&language=en-US; *see also* U.N. Env't Programme, *supra* note 2.

[17] For the purposes of this article, the term "armed civil conflict" refers to both internal and internationalized internal conflicts included in the Uppsala Conflict Data Program/ Peace Research Institute Oslo (UCDP/PRIO) Armed Conflict Dataset. According to the UCDP/PRIO data set, from 1989 to 2008 there were only eight armed conflicts between independent countries. During the same period, more than 120 internal conflicts occurred, although some of these were internationalized in the sense that other countries provided military support for the government or for the rebels. The preponderance of internal conflicts is reflected in the larger volume, which focuses on resource management in the wake of such conflicts. *See* Gleditsch et al., *supra* note 12, at 615; *see also* Lotta Harbom & Peter Wallensteen, *Armed Conflicts, 1946-2008*, 46 J. of Peace Res. 577 (2009); Lotta Harbom & Peter Wallensteen, *Armed Conflicts, 1946-2009*, 47 J. of Peace Res. 501 (2010).

[18] *See generally* Siri Aas Rustad & H. M. Binningsbø, *Rapid recurrence: Natural resources, armed conflict and peace* (Center for the Study of Civil War. Oslo: Peace Research Institute Oslo, Working Paper, 2010).

[19] *See* Paul Collier & Anke Hoeffler, *High-Value Natural Resources, Development, and Conflict: Channels of Causation in* High-Value Natural Resources and Post-Conflict Peacebuilding (Päivi Lujala and Siri Aas Rustad eds., 2011).

[20] *See* Collier & Hoeffler, *supra* note 14, at 588; Macartan Humphreys, *Natural Resources, Conflict, and Conflict Resolution: Uncovering the Mechanisms*, 49 J. of Conflict Resolution 508, 511 (2005).

[21] Humphreys, *supra* note 20, at 512.

[22] Collier & Hoeffler, *supra* note 14, at 588; Humphreys, *supra* note 20, at 511-12.

[23] The numerous examples of secessionist movements in resource-rich areas include Aceh, Indonesia; Biafra, Nigeria; Bougainville, Papua New Guinea; Cabinda, Angola; Kurdistan, Iraq; and southern Sudan. Collier & Hoeffler, *supra* note 14, at 588; Paul Collier & Anke Hoeffler, *The Political Economy of Secession, in* Negotiating Self-Determination 37, 47-48 (Hurst Hammun et al. eds., 2006); Päivi Lujala, *The spoils of nature: Armed civil conflict and rebel access to natural resources*, 47 J. of Peace Res. 4-5 (2010).

[24] *See* Paul Collier et al., Breaking the Conflict Trap: Civil War and Development Policy 63 (2003).

[25] For further discussion of the conflict in Sierra Leone, *see, e.g.,* Roy Maconachie, "The Diamond Area Community Development Fund: Micropolitics and Community-led Development in Post-war Sierra Leone," in *See also* Collier et al., *supra* note 24.

[26] *See* Collier & Hoeffler, *supra* note 14, at 588.

[27] Stephanie Hanson, *FARC, ELN*: *Colombia's Left-Wing Guerrillas*, Council on Foreign Relations (Aug. 19, 2009), http://www.cfr.org/colombia/farc-eln-colombias-left-wing-guerrillas/p9272#p4.

[28] *Guerrilla Miners: The FARC Turn to Gold*, Economist at 36 (Jan. 29, 2011); Simon Romero, *In Colombia, New Gold Rush Fuels Old Conflict,* New York Times (Mar. 3, 2011), http://www.nytimes.com/2011/03/04/world/americas/04colombia.html?pagewanted=all.

[29] *See* Collier et al., *supra* note 24, at 60.

[30] *See* U.N. Env't Programme, *supra* note 2, at 6.

[31] *See* Collier & Hoeffler, *The Political Economy of Secession, supra* note 23, at 47-48; Michael Ross, *How Do Natural Resources Influence Civil War? Evidence From Thirteen Cases,* 50 Int'l Org. 35 (2004); Päivi Lujala, *The Spoils of Nature: Armed Civil Conflict and Rebel Access to Natural Resources*, 47 J. of Peace Res. 4-5 (2010).

[32] *See* Collier et al., *supra* note 24, at 127.

[33] *See* Collier et al., *supra* note 24, at 127.

[34] *See* Gleditsch et al., *supra* note 12, at 615 (The Uppsala Conflict Data Program/Peace Research Institute Oslo Armed Conflict Dataset defines *conflict* as an armed contestation between the government in a country and a rebel organization in which more than twenty-five battle-related deaths occur. The figure includes all armed civil conflicts active from 1970 to 2008); Harbom & Wallensteen, *Armed Conflicts*, *1946-2008, supra* note 17, at 577.; Lotta Harbom & Peter Wallensteen, *Armed Conflict, 1989-2006*, 44 J. of Peace Res. 623 (2007). Resource data: Rustad & Binningsbø, *supra* note 18.

[35] Richard M. Auty, Sustaining Development in Mineral Economies: The Resource Curse Thesis 1 (1993).

[36] *Id*. (coining the term "resource curse," which refers not only to poor economic development, but also to other negative political and social outcomes that have been associated with abundant natural resources, including detachment from the electorate and increased risk of armed conflict); Terry L. Karl, The Paradox of Plenty: Oil Booms and Petro-States 242 (1997) (coining the term "paradox of plenty," which refers to the destabilization of states endowed with natural resources).

[37] Karl, *supra* note 36, at 32; Nadira Lalji, *The Resource Curse Revised*, 29 Harv. Int'l Rev. 34 (2007); Michael L. Ross, *Blood Barrels*, 87 Foreign Aff. 2, 8 (2008).

[38] *See* Humphreys, *supra* note 20, at 512.

[39] Kalu N. Kalu, State Power, Autarchy, and Political Conquest in Nigerian Federalism 124-26 (2008).

[40] Kalu, *supra* note 39, at 125.

[41] *See* U.S. Inst. of Peace and U.S. Army Peacekeeping & Stability Operations Inst., Guiding principles for stabilization and reconstruction 146 (2009), www.usip.org/ publications/guiding-principles-stabilization-and-reconstruction.

[42] *See* Collier et al., *supra* note 24, at 180; *see also* World Bank, *supra* note 15, at 19.

[43] *See* Humphreys, *supra* note 20, at 534; Havard Hegre & Nicholas Sambanis, *Sensitivity Analysis of Empirical Results on Civil War Onset*, 50 J. of Conflict Resolution 508, 531 (2006).

[44] *See, e.g.,* Collier & Hoeffler, *supra* note 14, at 588; James D. Fearon & David D. Laitin, *Ethnicity, Insurgency, and Civil War,* 97 Am. Pol. Sci. Rev. 75 (2003); Hegre & Sambanis, *supra* note 43, at 531.

[45] *See, e.g.,* Fearon & Laitin, *supra* note 44.

[46] *See* Ross, *supra* note 31, at 35.

[47] Fearon & Laitin, *supra* note 44, at 87; Indra De Soysa & Eric Neumayer, *Resource Wealth and the Risk of Civil War Onset: Results from a New Dataset of Natural Resource Rents, 1970-1999,* 42 Conflict Mgmt. and Peace Science 201, 216 (2007); Humphreys, *supra* note 20, at 525; Päivi Lujala, *The spoils of nature: Armed civil conflict and rebel access to natural resources*, 47 J. of Peace Res. 15, 16 (2010).

[48] Lujala, *supra* note 47, at 16.

[49] *Id*.

[50] *See* Collier & Hoeffler, *The Political Economy of Secession, supra* note 23, at 37.

[51] *See* James D. Fearon, *Why Do Some Civil Wars Last so Much Longer than Others?,* 41 J. of Peace Res. 275, 284 (2004).

[52] *Id*. at 277.

[53] Michael Ross, *What Do We Know about Natural Resources and Civil War,* 41 J. of Peace Res. 337, 338 (2004).

[54] *Id*. at 338; Fearon, *supra* note 51, at 284; Siri Aas Rustad et al., *Foliage and Fighting: Forest Resources and the Onset, Duration and Location of Civil War,* 27 Pol. Geography 761, 761 (2008).

[55] Ross, *supra* note 53, at 338.

[56] *See* Le Billon, *supra* note 3, at 564.

[57] *See* Ross, *supra* note 31, at 35.

[58] *Id*. at 52.

[59] Päivi Lujala, *Deadly Combat Over Natural Resources: Gems, Petroleum, Drugs, and the Severity of Armed Civil Conflict*, 53 J. of Conflict Resolution 50, 54 (2009) (An extreme case is offshore oil and gas drilling, in which the product can be exported by pipelines or ships without ever being present on land in the producing country.)

[60] *Id*. at 68.

[61] *See* Le Billon, *supra* note 3, at 574.

[62] *See* Lujala, *supra* note 59, at 55.

[63] *See* Le Billon, *supra* note 3, at 562.

[64] *Id*. Resources that are used to finance conflict are sometimes referred to as "conflict resources." Although specific definitions of the term vary, one widely used definition is that of Global Witness: "Conflict resources are natural resources whose systematic exploitation and trade in a context of conflict contribute to, benefit from or result in the commission of serious violations of human rights, violations of international humanitarian law or violations amounting to crimes under international law." Because this definition applies only to conflicts in which there are specific violations of international law, it has a somewhat narrower scope than others. *See also Conflict*, Global Witness, http://www.globalwitness.org/campaigns/conflict (last visited Oct. 27, 2011).

[65] *See* Ross, *supra* note 31, at 41.

[66] *See* Le Billon, *supra* note 3, at 562. There are other financing sources, including payments from nationals living abroad and voluntary and nonvoluntary support from civilians.

[67] *See* Ross, *supra* note 31, at 350.

[68] *Id*. at 344.

[69] *Id*. at 346 n.13. (Alluvial deposits are found in sand, clay, and gravel discharged by rivers. Existing or ancient riverbeds can be mined using simple tools such as shovels, buckets, and pans.).

[70] World Bank. *World Development Report 2011* at 81 (2011), http://wdr2011.worldbank.org/sites/ default/files/pdfs/WDR2011_Full_Text.pdf; Collier et al., *supra* note 24, at 76.

[71] *See* Collier et al., *supra* note 24, at 77.

[72] *See* Ross, *supra* note 31, at 351 (discussing the "Kimberly Process").

[73] *See* Ross, *supra* note 31, at 64.

[74] *See* Le Billon, *supra* note 3, at 565.

[75] *See generally* U.N. Env't Programme, *supra* note 2.

[76] *Id*.

[77] *See* Collier et al., *supra* note 24, at 179; Lujala, *supra* note 59, at 57.

[78] *See* Fearon & Laitin, *supra* note 44, at 87.

[79] U.N. Security Council, *Report of the Secretary-General on the Protection of Somali Natural Resources and Waters*, 11-12, U.N. Doc. S/2011/661 (Oct. 25, 2011).

[80] World Bank. *World Development Report 2011* at 64 (2011) http://wdr2011.worldbank.org/sites/ (It is important to note that, in some cases, high-value resources have nothing to do with triggering or financing the conflict—but as the conflict winds down, they become important issues to be addressed in the peacebuilding process.).

[81] *See generally* U.N. Env't Programme, *supra* note 2.

[82] *See* Collier & Hoeffler, *supra* note 14, at 588.

[83] *See* Rustad & Binningsbø *supra* note 18, at 16 (The term "conflict episode" refers to how a conflict is reported in the UCDP/PRIO Armed Conflict Dataset: a peace period is defined as the absence of conflict for more than two calendar years, and begins the first day that hostilities end, e.g., after military victory by one side.). *See* Gleditsch et al., *supra* note 12, at 615; Harbom & Wallensteen, *Armed Conflict, 1989-2006, supra* note 34; Harbom & Wallensteen, *Armed Conflicts, 1946-2008, supra* note 17, at 577. The Rustad and Binningsbø 2010 study considers oil, gas, diamonds, minerals, forest resources, land, and agricultural products (including crops used to produce drugs), and all internal conflicts from the UCDP/PRIO Armed Conflict Dataset from 1946 through 2006.

[84] U.N. Secretary-General, *Report of the Secretary-General on Peacebuilding in the Immediate Aftermath of Conflict*, 29, U.N. Doc. A/63/881-S/2009/304 (June 11, 2009).

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[1] *See* Sierra Club, Petition to Revise Critical Habitat for the Endangered Leatherback Sea Turtle 30 (Feb. 22, 2010), http://www.nmfs.noaa.gov/pr/pdfs/petitions/leatherback_criticalhabitat_feb2010.pdf.

[2] *Id*. at 31-33.

[3] *Id*. at 6.

[4] *See* Sierra Club, Petition to Revise Critical Habitat for the Endangered Leatherback Sea Turtle 13 (Nov. 2, 2010), http://www.nmfs.noaa.gov/pr/pdfs/petitions/leatherback_criticalhabitat_nov2010.pdf; *See also* Nat 'l Marine Fisheries Service & U.S. Fish and Wildlife Serv., Leatherback Sea Turtle (Dermochelys coriacea) 5 year review: Summary and Evaluation 14-15 (2007), http://www.nmfs.noaa.gov/pr/pdfs/species/leatherback_5yearreview.pdf.

[5] *Id*. at 32.

[6] Endangered and Threatened Wildlife and Plants; 90-Day Finding and 12-Month Determination on a Petition To Revise Critical Habitat for the Leatherback Sea Turtle, 76 Fed. Reg. 47133 (Aug. 4, 2011) (to be codified at 50 C.F.R. pt. 17), *available at* http://www.regulations.gov/#!document Detail;D=FWS-R4-ES-2011-0045-0001 (explaining that the revision is being done based on a recommendation from the EPA's five-year review of listed sea turtle species and upon completion of the review, the EPA would determine whether changes to the species status or critical habitat needed to be made).

[7] *See id*. at 47138-9.

[8] *Puerto Rico Preserves Beach from Development*, MSNBC.com, (updated Oct. 5, 2007 12:27:24 PM ET), http://www.msnbc.msn.com/id/21148775/ns/us_news-environment/t/puerto-rico-preserves-beach-development/.

[9] Kevin Mead, *Coalition Blasts Newly Stamped NEC Plan*, Caribbean Business (July 5, 2011), http://cbonlinepr.com/news03.php?nt_id=59214&ct_id=1.

[10] *Id.; see also* Plan Y Reglamento de Calificación Especial, Area de Planificación Especial de La Gran Reserva del Noreste (APEGRN), Rule 8042, Puerto Rico Planning Board (July 5, 2011), http://www.jp.gobierno.pr/Portal_JP/Portals/0/Reglamentos/Plan%20y%20Reglamento%20APEGRN%20Parte%20III.pdf.

[11] *Orden Ejecutiva del Gobernador de Puerto Rico*, Administrative Bulletin No. OE-2009-042, Oct. 30, 2009, http://www.jp.gobierno.pr/Portal_JP/Portals/0/VP/BorradorVP/III(1a)%20OE-2009-42A%20APECEN_r.pdf.

[12] Puerto Rico Permit Process Reform Act, 2009 P.R. Laws 161, 65, http://www.jp.gobierno.pr/Portal_JP/Portals/0/Leyes/Ley_Num_161.pdf.

[13] *See* Aura N. Alfaro, *NEC Gains Ground, but Criticism Lingers*, Caribbean Business, (July 1, 2011), http://www.caribbeanbusinesspr.com/news03.php?nt_id=59063&ct_id=1; *See also* Maria Miranda, *Environmental Group Files Lawsuit Regarding NEC*, Puerto Rico Daily Sun (August 10, 2011), http://www.prdailysun.com/index.php?page=news.article&id=1312947087.

[14] *See* Mead, *supra* note 9.

[15] Raissa Calderón Mauras-Ricci, *Legislation Proposed to Protect the NEC*, Puerto Rico Daily Sun (Sept. 24, 2011), http://www.prdailysun.com/index.php?page=news.article&id=1316918892.

[16] *Fortuño Officials Linked to NEC Area Developers*, Puerto Rico Daily Sun (Oct. 26, 2011), http://www.prdailysun.com/index.php?page=news.article&id=1319598119.

[17] *Id*.

[18] *See generally* George J. Stigler, *The Theory of Economic Regulation*, 2 The Bell Journal of Economics and Management Science, No. 1, 3-21 (Spring, 1971), http://www.giuripol.unimi.it/Materiali%20Didattici/Regolazione%20dei%20Mercati%20-%20Ammannati/STIGLER_economicRegulation.pdf (introducing the modern theory that in time regulatory agencies come to be controlled by the industries they regulate).

[19] *See* Irina Slinko et. al., *Laws for Sale: Evidence from Russia*, 7 Am. L. & Econ. Rev. 284, 285 (2005).

[20] *See* Sebastián Martinuzzi et al., Land *Development, Land Use, and Urban Sprawl in Puerto Rico Integrating Remote Sensing and Population Census Data*, 79 Landscape & Urb. Plan. 288, 289 (2007), http://www.fs.fed.us/global/iitf/pubs/ja_iitf_2007_martinuzzi001.pdf.

[21] *See* Thomas H. Douthat, "*Puerto Rico, You Lovely Island ... Puerto Rico, You Ugly Island": Combating Criollo Sprawl-the Puerto Rico Land Use Plan and Transect-Based Zoning As A Solution to the Island's Land Use Problems*, 76 Rev. Jur. U.P.R.441, 453-54 (2007).

[22] *Id*. at 441, 443.

[23] *See* María Juncos-Gautier et al., Final Report: Land Use Sustainability Index for Puerto Rico (2009), http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/7535/report/F.

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[67] Antipova, et al., *supra* note 10, at 505-06.

[68] Weinthal, *supra* note 23, at 7.

[69] Bo Libert et al., *Water and Energy Crisis in Central Asia*, 6 China & Eurasia Forum Quarterly 3, 10 (2008).

[70] *Id*. at 10-11.

[71] David Trilling, *Kyrgyzstan: Melting Glaciers Threaten Central Asia's Ecological and Energy Future*, Eurasianet.org (Oct. 18, 2010), http://www.eurasianet.org/node/62177.

[72] *Id*.

[73] *Id*.

[74] *Id*.

[75] Libert et al., *supra* note 70, at 10.

[76] Libert et al., *supra* note 70, at 14.

[77] Libert et al., *supra* note 70, at 10.

[78] Libert et al., *supra* note 70, at 10.

[79] ICG Asia Report No. 34, *supra* note 32, at 23.

[80] Libert, et al., *supra* note 70, at 14.

[81] ICG Asia Report No. 34, *supra* note 32, at 23.

[82] Bank Information Center, Tajikistan's Rogun Hydro: Social and Environmental Aspects 1, 6 (2011).

[83] *Id*. at 6.

[84] *Id*.

[85] *See* Christine Bichsel, Conflict Transformation in Central Asia: Irrigation Disputes in the Ferghana Valley 38-40 (2009) (discussing irrigation issues in the FerghanaValley).

[86] Sievers, *supra* note 45, at 374.

[87] Sievers, *supra* note 45, at 374-75.

[88] ICG Asia Report No. 34, *supra* note 32, at 5.

[89] Sievers, *supra* note 45, at 365.

[90] ICG Asia Report No. 34, *supra* note 32, at 4.

[91] Sievers, *supra* note 45, at 374, 401.

[92] ICG Asia Report No. 34, *supra* note 32, at 5.

[93] ICG Asia Report No. 34, *supra* note 32, at 13-14.

[94] ICG Asia Report No. 34, *supra* note 32, at 5, 12-13.

[95] ICG Asia Report No. 34, *supra* note 32, at 12.

[96] Martin Kipping, *Can "Integrated Water Resources Management" Silence Malthusian Concerns? The Case of Central Asia*, 2 Water Int'l 305, 311 (2008).

[97] *See* Kipping, *id*. at 311 (arguing that the transnational nature of the water makes the local conflicts more difficult to resolve).

[98] *Cf.* Hammond Murray-Rust et al., Int'l Water Mgmt. Inst., Research Report No. 67, Water Productivity in the Syr Darya-River Basin 1, 4-5 (2003) (discussing the creation and effect of the ICWC as a means of reforming water management in the Syr-Darya River Basin).

[99] ICG Asia Report No. 34, *supra* note 32, at 15-16.

[100] ICG Asia Report No. 34, *supra* note 32, at 16.

[101] ICG Asia Report No. 34, *supra* note 32, at 15-16.

[102] ICG Asia Report No. 34, *supra* note 32, at 15-16.

[103] ICG Asia Report No. 34, *supra* note 32, at 15-16.

[104] *See* Francine Hirsch, Empire of Nations, Ethnographic Knowledge and the Making of the Soviet Union 1, 168-69 (2005) (discussing a petition by Uzbek-identified residents of villages on the Kirgiz side of the river claiming that they should be unified with Uzbekistan, as their identity was culturally Uzbek, and their villages were agricultural, rather than cattle breeding).

[105] *See* Hirsch, *id*. at 171 (expounding upon the difficulties in territorial disputes in the Ferghana Valley, where delineations were not always straightforward).

[106] *See* Hirsch, *id*. at 170 (accentuating the fact that nationality was linked to land and resources).
[107] *See* Hirsch, *id*. at 172 (discussing the great amount of work Soviet authorities put into drawing boundaries, as well as the continuing disputes that resulted).
[108] *See* Hirsch, *id*. at 169 (discussing the distinction between animal husbandry and irrigated agriculture as a factor in determining where National borders lie).
[109] Max Spoor, *Agrarian Transition in Former Soviet Central Asia: A Comparative Study of Kazakhstan, Kyrgyzstan and Uzbekistan*, 1, 4-5 (Int'l Inst. of Soc. Studies: Working Paper No. 298, 1999) (describing specialization between Central Asian Countries; Uzbekistan specialized in cotton and Kyrgyzstan specialized in wool).
[110] Tjaart W. Schillhorn van Veen, *The Kyrgyz Sheep Herders at a Crossroads* 1, 4-8 (Overseas Dev. Group: Pastoral Dev. Network Series No. 38d, 1995) (discussing the transition to collectivism and them privatization under the Soviet scheme).
[111] Zvi Lerman & David Sedik, FAO Reg'l Office for Europe & Cent. Asia, *Policy Studies on Rural Transition No. 2009-1: Agrarian Reform in Kyrgyzstan: Achievements and the Unfinished Agenda* 1, 1-2 (2009) (discussing "The shift of productive resources – land and livestock – from enterprises to the individual sector has resulted in a significant increase in the share of individual farms in agricultural production.").
[112] *See* Lerman & Sedik, *id*. at 4 (presenting current figures of fifty-five percent of product being crops and forty-five percent livestock).
[113] *See id*. at 4.
[114] ICG Asia Report No. 34, *supra* note 32, at 5.
[115] ICG Asia Report No. 34, *supra* note 32, at ii.
[116] ICG Asia Report No. 34, *supra* note 32, at 5.
[117] Hirsch, *supra* note 104, at 318.
[118] ICG Asia Report No. 34, *supra* note 32, at 3-4.
[119] Micklin, *supra* note 29, at 511.
[120] Hirsch, *supra* note 104, at 318 (discussing the link between nationality, land, national rights, and economic and cultural resources as a result of Soviet influence).
[121] *See* ICG Asia Report No. 34, *supra* note 32, at 10-11 (outlining the various international approaches to the water management issues in Central Asia).
[122] *See* ICG Asia Report No. 34, *supra* note 32, at 4 (citing 42 examples of violent conflicts involving water); *see also* Philip Micklin, *supra* note 29, at 522 (discussing water management reform as a means of avoiding conflict).
[123] *See* Micklin, *supra* note 30, at 511-13 (discussing the problems caused by the shrinking Aral Sea).
[124] ICG Asia Report No. 34, *supra* note 30, at 8-10.
[125] *Id*. at 6.
[126] ICG Asia Report No. 34, *supra* note 30, at 6..
[127] *See* Micklin, *supra* note 29, at 524 (discussing the environmental impact of the Aral Sea problem).
[128] *See* Micklin, *supra* note 29, at 512-13 (discussing a reduction in irrigation as a necessity for improved management in the Aral Basin).
[129] *See* Micklin, *supra* note 29, at 515 (discussing water pricing, privatization of land and granting rights of self-governance as a means of institutional change to promote water efficiency).
[130] *See* Service Reform Initiative, *supra* note 51, at 21(describing the centralization of water management during the Soviet era).
[131] *See* Service Reform Initiative, *supra* note 51, at 25 (discussing the argument for making users more responsible at the local level).
[132] ICG Asia Report No. 34, *supra* note 32, at 10 (pointing out the various projects launched since 1991 to resolve water conflict in Central Asia); *see generally* Int'l Crisis Grp., ICG Asia Report No. 33, Central Asia: Border Disputes and Conflict Potential (2002) (outlining the efforts made toward mitigating the impact of the Aral Sea disaster).
[133] *See* Sievers, *supra* note 45, at 393-97 (detailing the involvement of various international donors).
[134] Sievers, *supra* note 45, at 393-97.
[135] *See* Micklin, *supra* note 29, at 518-20. Most prominently is the Aral Sea Basin Programme (ASBP), which began in 1994 with the original plan to extend it over a period of fifteen to twenty years, and financed jointly by the World Bank, UNDP, and UNEP. The aims of the programme were: rehabilitation and development of the disaster zone; strategic planning and comprehensive management of the Amu Darya and Syr Darya Rivers; and building institutions for planning and implementing the two first points. The third point lead to the foundation of ICAS and IFAS mentioned earlier. After a review of the ASBP in 1996, the World Bank, together with GEF, launched the Water and Environmental Management Project for the period 1999 to 2003. Between 1993 and 1998 USAID funded the Environmental Policy and Technology project, which supported regional efforts to come to an agreement on the operation of the Toktogul Reservoir. In 2001 it launched the Natural Resource Management Project, the water component of which aimed at improving inter-state cooperation and sharing of the Syr Darya River flow. This project was further expanded in 2002. The European Union ran the Water Resources Management and Agricultural Production (WARMAP) project starting in 1995 for the utilization, management and allocation of water in Central Asia.
[136] *See generally* Weinthal, *supra* note 23, at 51-2 (arguing that more emphasis should have been put on agriculture); *see generally* Sievers, *supra* note 45 (arguing that international agencies have not lived up their promises or regional expectations).
[137] *See accord* Jürg Krahenbühl et al., Swiss Agency for Development and Cooperation, Swiss Water Strategy for Central Asia 2002-2006: Strengthening Regional Water Management Capacities, 3, 4-6 (2002) (discussing the Swiss Water Strategy for Central Asia); *see also* ICG Asia Report No. 34, *supra* note 32, at 10 (discussing regional and international water management efforts); *see accord* Ruth S. Meinzen-Dick & Bryan Randolph Bruns, Negotiating Water Rights: Introduction, in Negotiating Water Rights (Bryan Randolph Bruns & Ruth S. Meinzen-Dick eds., 2000) (discussing WUAs as well as other institutions developed to deal with water conflict in Central Asia); *see accord* Jenniver Sehring, *Irrigation Reform in Kyrgyzstan and Tajikistan*, 21 Irrigation & Drainage Sys. 277, 277, 283 (2007) (describing the role of WUAs and other institutions in Kyrgyzstan and Tajikistan).
[138] Service Reform Initiative, *supra* note 51, at 94 (suggesting that even with the ICWC, agreements on water allocation tend to occur on a yearly basis).
[139] Micklin, *supra* note 29, at 559-60 (explaining that a return of the sea to its pre-1960's condition would require a substantial increase of inflow and a significant decrease in consumptive use for irrigation); *see* Micklin, *supra* note 29, at 561 ("Although restoration of the Aral to, or near, its pre-1960s level and ecological state is not a reasonable prospect, various partial rehabilitation scenarios for the sea and river deltas hold considerable promise.").
[140] *See* Weinthal, *supra* note 23, at 67 (describing a water, energy and agriculture approach which could have been taken rather than the water or water and energy approach taken by most international agencies).
[141] *See* Weinthal, *supra* note 23, at 68 (arguing that agriculture was ignored because specialists preferred simple technical solutions over complicated political solutions).
[142] *See* Sievers, *supra* note 45, at 383 ("The erosion of this general presumption of the efficacy and moral authority of international organizations coincides with the expansion of the Central Asian states' participation in international environmental regimes."); *see also* Sievers, *id*. at 396 (discussing the failure of indigenous environmental NGOs to counterweight failed regional programs).
[143] *See generally* Jürg Krahenbühl et al., *supra* note 137; *see generally* Murray-Rust et al., *supra* note 98, at 4-6.
[144] Murray-Rust et al., *supra* note 98, at 12 (explaining that upon the withdrawal of The World Bank's funds for competitions promoting water efficiency, IWMI came together with SIC-ICWC to continue to strengthen water saving practices).
[145] Murray-Rust et al., *supra* note 98, at 12 ("The overarching goal of the project is to forge a gradual change in attitude of water users and water managers at all levels in the hierarchy towards water as a limited resource and prepare indicative recommendations for policymakers regarding irrigation water allocations within the region.").
[146] Jürg Krahenbühl et al., *supra* note 137, at 3, 20 (2002) (explaining that the goal of the IWRM, in part, is to reorganize water management on the basis of hydraulic boundaries).
[147] Jürg Krahenbühl et al., *supra* note 137, at 3, 16 (2002) (discussing the objectives of the Swiss Water Sector Interventions, including automation and technical improvement of canal systems).
[148] *See generally Second On-Farm Irrigation Efficiency Program*, The World Bank, http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=73230&theSitePK=258599&menuPK=258625&Projectid=P126390 (last visited Oct. 24, 2011); Asian Development Bank, Building Capacity for the Formation and Management of Water User Associations, Adb.org, http://www.adb.org/projects/project.asp?id=29515 (last visited Oct. 24, 2011); Academy for Educational Development, *Central Asia Water User Association Support Program*, AED.org http://www.aed.org/Projects/WUASP.cfm (last visited Oct. 24, 2011); Rural Infrastructure Rehabilitation Project, The World Bank http://web.worldbank.org/external/projects/main?pagePK=104231&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P058898 (last visited Oct. 24, 2011). WUAs are non-commercial voluntary associations of water users

financed by members' payments for water service delivery. Usually established along the boundaries of the former state and collective farms, they are intended to operate, maintain and rehabilitate the irrigation system, deliver water to the end users, purchase water from the state, and collect water fees from the users.

[149] *See* Jenniver Sehring, *Irrigation Reform in Kyrgyzstan and Tajikistan*, 21 Irrigation & Drainage Sys. 277, 283 (2007) (explaining that although the introduction of market-economics is often seen as the main tool for reaching greater efficiency, there are several problems in implementing such a scheme).

[150] *Id*.

[151] *See* Sehring, *supra* note 149, at 284 (pointing to three basic reasons for non-payment of water-related fees: soviet mentality, lack of understanding, and widespread poverty).

[152] *See* Sehring, *supra* note 149, at 284 (discussing the lack of perceived legitimacy).

[153] *See* Sehring, *supra* note 149, at 284 (citing the failure to prevent or punish water theft as one of the reasons they are perceived as illegitimate).

[154] Sehring, *supra* note 149, at 285-87 (discussing WUA an introduction of democratic grass roots to the water management issues, while explaining where these policies have failed actual users, in part because the individuals do not understand the system).

[155] Sehring, *supra* note 149, at 287 (explaining that existing power structures have dominated over attempted reforms, as the political culture is characterized by a lack of proactiveness and an orientation to respect village leaders).

[156] Kipping, *supra* note 98, at 315.

[157] *See, e.g., Transboundary Water Management in Central Asia*, giz, http://www.gtz.de/en/weltweit/eurpa-kaukasus-zentralasien/29994.htm (last visited Oct. 24, 2011) (discussing the context, objective, and approach for GIZ's involvement in water management in Central Asia) [hereinafter *Transboundary Water Management in Central Asia*].

[158] *Id*.

[159] *See A Source of Peace – Transboundary Water Management in Central Asia*, CAwater-info.net, http://www.cawater-info.net/projects/pdf/fact_sheet_programme_cas_en.pdf (last visited Oct. 24, 2011) (citing the advisory services as a reason for increased expertise and management capacities of IFAS) [hereinafter *A Source of Peace*]; *see also Transboundary Water Management in Central Asia, supra* note 157 ("The programme provides funds for technical equipment, such as measuring devices, or supplies this equipment itself.").

[160] *See A Source of Peace*, *supra* note 159. (describing the overall objective for improvement of watercourse management for selected transboundary rivers).

[161] *See A Source of Peace*, *supra* note 159 (outlining GIZ's approach involving training personnel as well as interdisciplinary and cross-regional dialogue).

[162] *See A Source of Peace*, *supra* note 159 (stating that in addition to institutional measures, the program provides technical assistance in the form of measurement devices and other equipment).

[163] *See* Micklin, *supra* note 29, at 522 (suggesting that absent significant improvements, water use will be a continuing source of conflict in Central Asia).

[164] *See generally* Micklin, *supra* note 29, at 522-23 (discussing the ongoing water management problems in Central Asia as they relate to the Ferghana Valley).

[165] *See, e.g*., Aral Sea Desertification, RAP361.com (Oct. 25, 2011), http://rap361.com/?p=14962.

[166] ICG Asia Report No. 34, *supra* note 32, at 6. (discussing a Soviet Union plan to use nuclear weapons on a glacier to refill the Aral Sea basin).

[167] *See* Micklin, *supra* note 29, at 520-21 (discussing the successes and continuing needs of the five Central Asian States involved in the water management issue).

[168] *See* Micklin, *supra* note 29, at 520-21 (explaining the continued absence of a water management infrastructure will allow for a continuation of nations serving their own water and energy interests at the expense of others due to an expansion in agriculture).

[169] Micklin, *supra* note 29, at 515.

[170] *See generally* ICG Asia Report No. 34, *supra* note 32, at 21 (discussing the construction of hydropower complexes as a partial solution to the conflict).

[171] *See* ICG Asia Report No. 34, *supra* note 32, at 24 (suggesting that Tajikistan would have to raise from US $700 million to US $1 billion to complete the hydropower project).

[172] *See* Ruth S. Meinzen-Dick & Bryan Randolph Bruns, Negotiating Water Rights: Introduction, in Negotiating Water Rights 27 (Bryan Randolph Bruns & Ruth S. Meinzen-Dick eds., 2000) (arguing that water rights should be seen as a negotiating process and is not simply deduced from economic, technical or legal analysis).

[173] Service Reform Initiative, *supra* note 51, at 24 (arguing that population increase in conjunction with changing climate will make water resources even more scarce).

[174] Service Reform Initiative, *supra* note 51, at 99-100 (discussing the financial restraints and conflicts between territorial entities as a hindrance to solving water management issues).

[175] *See* ICG Asia Report No. 34, *supra* note 32, at 5, 12-14; *see also* Kipping, *supra* note 98, at 312-13.

[176] *See* Int'l Crisis Group, ICG Asia Report No. 33, Central Asia: Border Disputes and Conflict Potential, 13 (2002). ("[T]he Ferghana Valley has been at the centre of border disputes between Uzbekistan and Kyrgyzstan.").

[177] *See id*. at 4, 6 (suggesting that final demarcation of borders will not happen in the near future, in part, because of a lack of political will).

[178] *See* Weinthal, *supra* note 23, at 51 (Describing the involvement of the World Bank, UNDP and UNEP, as well as ICAS and IFAS); *see also* Sievers, *supra* note 45, at 393-97 (discussing the failure of international institutions to take meaningful action to solve the water problems in Central Asia).

[179] *See* Micklin, *supra* note 29, at 515; *see also* Sievers, *supra* note 45, at 383 (discussing the lack of organization and cooperation between international funders and state governments).

[180] *See* Sievers, *supra* note 45, at 397 (suggesting that the goal of international agencies is to move the region towards a market-based economy).

[181] *See* Service Reform Initiative, *supra* note 51, at 38 (detailing the components of the IWRM).

[182] *See* Service Reform Initiative, *supra* note 51, at 94 (explaining that agreements tend to be bilateral rather than multi-lateral, yearly instead of long term, and often fail to be implemented by one, if not all, sides); *see also* ICG Asia Report No. 34, *supra* note 32, at i ("An annual cycle of disputes has developed between the three downstream countries – Kazakhstan, Turkmenistan and Uzbekistan – that are all heavy consumers of water for growing cotton, and the upstream nations – Kyrgyzstan and Tajikistan.").

[183] *See generally* ICG Asia Report No. 34, *supra* note 32, at 6-7 (describing recent political changes in Kyrgyzstan).

[184] *See generally* Int'l Crisis Grp., ICG Asia Briefing No. 79, Kyrgystan: A Deceptive Calm (2008). (discussing corruption and monopolization as well as lack of training as reasons for continued financial crisis).

[185] *See* ICG Asia Briefing No. 79, *id*. at 14 (explaining a statement by Chudinov Sheppling pointing out that Kyrgyzstan will have to reduce its energy consumption by thirty percent and will only have enough electricity for lighting).

[186] *See* ICG Asia Briefing No. 79, *supra* note 184, at 13 (explaining that the water level in Toktogul, the country's largest reservoir and the source of most of its energy, was catastrophically and inexplicably low).

[187] *See* Bank Information Center, *supra* note 82, at 6-7 (explaining that the majority of water originates in Tajikistan and Kyrgyzstan, but is not used there).

[188] *See* Weinthal, *supra* note 23, at 68 (discussing the reliance on cotton production for social control and political stability).

[189] *See* Weinthal, *supra* note 23, at 68 (explaining that Turkmenistan and Uzbekistan could not jeopardize the foreign revenue from the cotton industry).

[190] *See* Weinthal, *supra* note 23, at 68.

Endnotes: A Case for the United States' Opposition of International and Domestic Coal Subsidies

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[1] U. N. Framework Convention on Climate Change ("UNFCCC"), May 9, 1992, S. Treaty Doc. 102-38, 1771 U.N.T.S. 107.

[2] Bruce Rich, Envtl. Defense Fund, Foreclosing the Future 6 (2009), http://www.edf.org/sites/default/files/9593_coal-plants-report.pdf.

[3] The U.S. Treasury Department has issued guidance to multilateral development banks stating that lending policies should foster planning for and development of no or low carbon energy sources rather than funding conventional coal-fired facilities. *See* U.S. Dep't of Treasury, Guidance to MDBs for Engaging with Developing Countries on Coal-Fired Power Generation (2009).

[4] *See* Lucy Johnston et al., Synapse Energy Econ., Phasing Out Federal Subsidies for Coal 6-17 (2010) (listing examples of domestic coal subsidies, including tax credits, low interest loans, and loan guarantees); Daryl Glaser, *Does hypocrisy matter? The Case of US foreign policy*, 32 Rev. of Int'l Stud. 251-68 (2006) (arguing that the United States damages it credibility with hypocritical policies).

[5] Daryl Glaser, *Does Hypocrisy Matter? The Case of US Foreign Policy*, 32 Rev. of Int'l Stud. 251-68 (2006) (arguing that the United States damages it credibility with hypocritical policies).

[6] Richard S.J Tol, *The Economic Effects of Climate Change*, 23 Journal of Econ. Perspectives 29-51 (2009).

[7] Heike Mainhardt-Gibbs, Bank Info. Ctr., *World Bank Group Energy Sector Financing Update*, 1 (2010).

[8] *See, e.g.*, Press Release, Bank Info. Ctr., South Africans Say No to Eskom's R29 Billion World Bank Loan, Bank Information Center (Feb. 16, 2010), http://www.bicusa.org/en/Article.11773.aspx (reporting a protest consisting of over 50 organizations opposed to IBRD's loan for a coal-fired power plant).

[9] World Bank Group Mgmt., *Striking a Better Balance—The World Bank Group and Extractive Industries: The Final Report of the Extractive Industries Review*, vii (Sept. 17, 2004), http://siteresources.worldbank.org/INTOGMC/Resources/finaleirmanagementresponse.pdf ("[T]he Extractive Industries Review recommend[ed] that the Bank Group should withdraw from investment in oil and coal in developing countries").

[10] The United States has substantial influence over the IBRD, comprising sixteen percent of the voting power, when the next closest country, the United Kingdom, only has four percent. *See* World Bank Group, *International Bank for Reconstruction and Development Subscriptions and Voting Power of Member Countries* (Sept. 30, 2011), http://siteresources.worldbank.org/BODINT/Resources/278027-1215524804501/IBRDCountryVotingTable.pdf.

[11] World Bank Group, *Minutes of Joint Meeting of the Executive Directors of the Bank and IDA, and the Boards of Directors of IFC and MIGA* (April 8, 2010), http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2010/04/28/000112742_20100428165745/Rendered/PDF/542790MIN0M201101Official0Use0Only1.pdf.

[12] Mainhardt-Gibbs, *supra* note 7, at 4.

[13] *See, e.g.*, Inter-American Dev. Bank, *Brazil Expands Energy Supply in Northeastern Region with IDB Financing* (Mar. 20, 1009), http://www.iadb.org/en/news/news-releases/2009-03-20/brazil-expands-energy-supply-in-northeastern-region-with-idb-financing,5178.html (stating that the Inter-American Development Bank gave just under $200 million to two new coal-fired power plants in Brazil).

[14] African Dev. Bank, Medupi Power Project, Project Appraisal Report iii (2009), http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/South%20Africa%20-%20Medupi%20%20Power%20Project.pdf (reporting that the African Development Bank recently gave a $1.7 billion loan to a coal-fired power plant).

[15] I.R.C. § 45K (2011).

[16] Adenike Adeyeye et al., Envtl. Law Inst., Estimating U.S. Government Subsidies to Energy Sources: 2002-2008 7 (2009), http://www.elistore.org/Data/products/d19_07.pdf.

[17] *Id*.

[18] Johnston et al., *Supra* note 4, at 13-15.

[19] *Id*. at 15-17.

[20] Guri Bang, *Energy Security and Climate Change Concerns: Triggers for Energy Policy Change in the United States?,* 38 Energy Pol'y 1645-53 (2010) ("The US economy is dependent on easy and plentiful access to cheap oil, coal, and natural gas.")

[21] James T. Bartis et al., RAND, Producing Liquid Fuels From Coal 5 (2008).

[22] *Coal and Climate Change Facts*, Pew Ctr. on Global Climate Change, http://www.pewclimate.org/global-warming-basics/coalfacts.cfm (last visited Nov. 1, 2011).

[23] *Id*.

[24] *Id*.

[25] *See* Linda Luther, Cong. Research Serv., Managing Coal Combustion Waste (CCW): Issues with Disposal and Use 1 (2010), http://www.fas.org/sgp/crs/misc/R40544.pdf (stating that coal combustion waste, including coal ash and toxic chemicals like arsenic, constitutes the nation's second largest waste stream after municipal solid waste).

[26] *See e.g.,* A.M. Donoghue, *Occupational Health Hazards in Mining*, 54 Occupational Med. 283-286 (2004) (detailing health risks to coal miners, including silicosis, "black lung," and lung cancer).

[27] Coal use accounts for nearly twenty percent of global—and over thirty percent of United States—green house gas emissions. Pew, *Supra* note 20. The United States produces over seven billion tons of CO2 per year, with two billion coming from coal-burning power plants. *Id*.

[28] The external costs of the United States' coal use include costs associated with water pollution, toxic coal waste, and air pollution. *See* Peter Rafaj & Socrates Kypreos, *Internalisation of External Cost in the Power Generation Sector: Analysis with Global Multi-regional MARKAL Model*, 35 Energy Pol'y 828-843 (2007).

[29] Paul Epstein et al., *Full Cost Accounting for the Life Cycle of Coal*, 1219 Annals of the NY Acad. of Sci. 73, 93 (2011) ("The low estimate is $175 billion, or over 9¢/kWh, while the true monetizable costs could be as much as the upper bounds of $523.3 billion.").

[30] Nat'l Research Council, Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use (2010) ("Just the damage from external effects the committee was able to quantify add up to more than $120 billion for the year 2005.").

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[27] 63 Fed. Reg. 31400, 31401 (June 9, 1998).

[28] WildEarth Guardians, Lesser Prairie-Chicken: A Decade in Purgatory 2, 3 (2008), http://www.wildearthguardians.org/site/DocServer/WildEarth_Guardians_Decade_in_Purgatory.pdf?docID=924&AddInterest=1059.

[29] *See generally* Davis et al., Lesser Prairie Chicken Interstate Working Group, Lesser Prairie-Chicken Conservation Initiative 13, 14 (May 2008), http://www.wafwa.org/documents/LPCCI_FINAL.pdf (showing that the lesser prairie chicken's diet consists largely of insects).

[30] *Id*. at 40.

[31] *Id*. at 15.

[32] 75 Fed. Reg. 69222, 69243 (Nov. 10, 2010).

[33] *See* 63 Fed. Reg. 31400, 31400 (June 9, 1998) (discussing the importance of listing the lesser prairie-chicken as threatened and designating critical habitat). In the end, the Fish and Wildlife Service determined that their listing though warranted, was precluded by higher priority species. *Id*.

[34] *Id*.

[35] 75 Fed. Reg. 69222, 69243 (Nov. 10, 2010).

[36] Fitzgerald et al., The Range and Distribution of *Sceloporus Arenicolus* in Texas: Results of Surveys Conducted 8-15 June 2011, 1 (2011), http://twri.tamu.edu/media/278298/tx_dsl_final.pdf.

[37] *Id*. at 1.

[38] 75 Fed. Reg. 77801, 77805 (Dec. 14, 2010).

[39] *Id*. at 77805-06.

[40] *Id*. at 77805; U.S. Fish & Wildlife Serv. et al., Texas Conservation Plan for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*) 21-22 (Sept. 27, 2011), http://texasahead.org/texasfirst/resources/task_force/priority/reference_docs/dsl/TCP_DSL_Plan_92711.pdf.

[41] 75 Fed. Reg. 77801, 77809 (Dec. 14, 2010) (noting that the shinnery oak is poisonous to livestock in the spring when it is budding).

[42] *Id*.

[43] U.S. Fish & Wildlife Serv. et al., *supra* note 40, at 86. Farmers also kill shinnery oak for fire suppression purposes and control of the boll weevil. This destabilization is ultimately not all that economically beneficial for farmers because it leads to erosion. *Id*.

[44] 47 Fed. Reg. 58454 (Dec. 30, 1982).

[45] *See* 75 Fed. Reg. 69222, 69243 (Nov. 10, 2010) (finding that sagebrush lizards warrant listing as endangered but are precluded by higher listing priorities).

[46] 75 Fed. Reg. 77801, 77805 (Dec. 14, 2010).

[47] *Id*.; *see also* Nicole L. Slomensky & Lee A. Fitzgerald, *Population Variation in Dune-Dwelling Lizards in Response to Patch Size, Patch Quality and Oil and Gas Development*, 56(3) Sw. Naturalist 315 (2011).

[48] 75 Fed. Reg. 77801 (Dec. 14, 2010).

[49] *See* U.S. Fish & Wildlife Serv. et al. *supra* note 40, at 21-22 (arguing that the implementation of a conservation plan to protect sagebrush lizard will lower the negative impact on Texas economy); *see also* Goodstein, *supra* note 3.

[50] *See* Newby, *supra* note 10; *see also* Manning, *supra* note 23; May, *supra* note 23.

[51] Rene Romo, *Lizard Listing at Center of Debate*, ABQ Journal (Apr. 27, 2011), http://www.abqjournal.com/news/state/27231871475newsstate04-27-11.htm.

[52] May, *supra* note 23.

[53] Mella McEwan, *Cornyn Talks Sagebrush Lizards, Government Intrusion at Midland Appearance*, MyWestTexas.com (Aug. 24, 2011), http://www.mywesttexas.com/top_stories/article_d82c2cec-ecf5-575d-9207-8102671f12d8.html.

[54] *See, e.g*., S. 782, 112th Cong SA 397; Simonich, *supra* note 25.

[55] Mella McEwan, *Comptroller Proposes Conservation Plan for Lizard Habitat*, MyWestTexas.com (Oct. 10, 2011, 10:13am), http://www.mywesttexas.com/business/oil/top_stories/article_60a38efe-f352-11e0-96ba-001cc4c002e0.html.

[56] *See* Jay C. Lininger & Curt Bradley, Ctr. For Biological Diversity, Impact of Dunes Sagebrush Lizard on Oil and Gas Activities in New Mexico: Analysis of Bureau of Land Management Offerings and Nominations in 2010-2011, 1-13 (2011), http://www.biologicaldiversity.org/species/reptiles/dunes_sagebrush_lizard/pdfs/Oil&Gas_DSL_Report_v1.5_final.pdf; Jay C. Lininger, Curt Bradley & Taylor McKinnon, Impact of Dunes Sagebrush Lizard Protection on Oil and Gas Production in West Texas 6 (2011), http://www.biologicaldiversity.org/species/reptiles/dunes_sagebrush_lizard/pdfs/Texas_DSL_habitat_report.pdf; *cf*. Goodstein, *supra* note 3, at 1, 2 (concluding generally that environmental regulations have little real effect job numbers).

[57] Lininger & Bradley, *supra* note 56, at 1-13.

[58] *See* Endangered Status for Dunes Sagebrush Lizard, 75 Fed. Reg. 77803 (Dec. 14, 2010) (to be codified at 50 C.F.R. pt. 70) (representing a forty percent loss since 1982); *see also* Lininger & Bradley, *supra* note 56, at 1.

[59] Lininger & Bradley, *supra* note 56, at 1-2.

[60] *See* Lininger & Bradley, *supra* note 56, at 14 (concluding that protecting the dunes sagebrush lizard would have no effect on oil and gas leasing opportunities).

[61] *Id*. at 2.

[62] *Id*. at 2.

[63] *See* May, *supra* note 23 (quoting Ben Shepperd, president of Permian Basin Petroleum Association).

[64] Lininger & Bradley, *supra* note 56, at 2.

[65] *Id*. at 2.

[66] *See* U.S. Fish & Wildlife Serv. et al., *supra* note 40, at 56 (referring to Fig. 1-2); *see also* Lininger, Bradley & McKinnen, *supra* note 57, at 6 (concluding that the limited area of dunes sagebrush lizard habitat in Texas would have only minimal effect, if any, on oil and gas activity in west Texas).

[67] *See, e.g*., Lininger & Bradley, *supra* note 56, at 14.

[68] *Id*. at 14.

[69] *See* U.S. Fish & Wildlife Serv., Candidate Conservation Agreements with Assurances Handbook (Draft) 1, 5 (2003), http://library.fws.gov/ES/handbook_draft.pdf [hereinafter U.S. Fish & Wildlife Serv. Handbook]; *see also* U.S. Gov't Accountability Office, GAO-08-803, Endangered Species: Fish and Wildlife Service Uses Best Available Science to Make Listing Decisions, but Additional Guidance Needed for Critical Habitat Designations (2003), http://www.gao.gov/new.items/d03803.pdf.

[70] 16 U.S.C. § 1533(a)-(b) (2006).

[71] 16 U.S.C. § 1536 (2006).

[72] 16 U.S.C. § 1533(f) (2006).

[73] 16 U.S.C. §§ 1538-39 (2006).

[74] 16 U.S.C. § 1532(19) (2006).

[75] 16 U.S.C. § 1533(b)(1)(A) (2006).

[76] *See* U.S. Gov't Accountability Office, *supra* note 69, at 14 (explaining that peer review, a routine component of science, is considered the most reliable tool to ensure that quality science will prevail over political considerations).

[77] *See id*. at 11 (depicting the complex review process that the FWS must go through before publishing a final rule).

[78] 16 U.S.C. § 1533(b)(1)(A) (2006).

[79] *See* Dennis D. Murphy & Paul S. Weiland, *The Route to Best Science in Implementation of the Endangered Species Act's Consultation Mandate: The Benefits of Structured Effects Analysis*, Envtl. Mgmt. 1, 3 (2010), http://www.vision.ca.gov/docs/Route_to_Best_Science.pdf (describing the importance of transparency in decision making to allow affected individuals and reviewing courts to determine whether a federal agency made a well informed decision).

[80] 16 U.S.C. § 1535(a) (2006).

[81] 50 C.F.R. § 424.12 (2011).

[82] 50 C.F.R. § 424.16 (2011).

[83] *See generally* U.S. Fish & Wildlife Serv. Handbook, *supra* note 69, at 22 (explaining the process to create a final rule, including the importance of addressing formal written comments from the public and modifying or revising the draft to reflect the public comments).

[84] *See* 50 C.F.R. § 246.16 (2011); *see also* U.S. Gov't Accountability Office, *supra* note 69, at 3 (concluding that the FWS' internal decision-making process and external peer review ensures that it considers the best available science when making listing decisions under the ESA).

[85] *See* 16 U.S.C. § 1533(a)-(b) (2006).

[86] 16 U.S.C. § 1533(b)(2) (2006); *see also* Home Builders Ass'n of N. Cal. V. U.S. Fish & Wildlife Serv., 616 F.3d 983, 991-92 (discussing economic impact considerations).

[87] 16 U.C.C. § 1533(b)(2) (2006).

[88] *See generally* U.S. Fish & Wildlife Serv. Handbook, *supra* note 69 (describing how "Candidate Conservation Agreements with Assurances ('CCAAs') for private property owners promote conservation of unlisted species on non-federal lands and provide property owners with the regulatory certainty that they desired.").

[89] *See generally id*.

[90] *See generally id*.

[91] *See generally id*.

[92] *See generally id*.

[93] *See generally id*.

[94] *Cf*. Niemi et al., *supra* note 11 (recounting the similar propaganda advanced by the timber industry after a 1991 court ruling banned logging on 24 million acres of national forest land in the Pacific Northwest).

[95] *See, e.g*., Newby, *supra* note 10; *see also* Manning, *supra* note 23.

[96] *See generally* Lawrence Mishel, Econ. Policy Inst., Regulatory Uncertainty: A Phony Explanation for Our Jobs Problem 2-6 (Sept. 2011), http://w3.epi-data.org/temp2011/EPIBriefingPaper330.pdf.

[97] *See e.g*., Mishel, *supra* note 96, at 2-3 (finding that the lack of job growth is simply the continuing result of the financial collapse and a lack of demand and explaining that Republicans' delay of the rulemaking process actually prolongs any uncertainty for businesses); Jan Eberly, *Is Regulatory Uncertainty a Major Impediment to Job Growth*, U.S. Dept. of Treas. (Oct. 24, 2011), http://www.treasury.gov/connect/blog/Pages/Is-Regulatory-Uncertainty-a-Major-Impediment-to-Job-Growth.aspx (concluding also that slow economic growth has more to do with lack of demand as opposed to alleged regulatory uncertainty); Phill Izzo, *Dearth of Demand Seen Behind Weak Hiring*, Wall St. J. (July 18, 2011), http://online.wsj.com/article/SB10001424052702303661904576452181063763332.html (reporting that a survey of economists also found that minimal demand is the primary reason businesses are not hiring).

[98] *See Senator John Cornyn*, Maplight.org, http://maplight.org/us-congress/legislator/553-john-cornyn (last visited Oct. 31, 2011).

[99] *See Representative Steve Pearce*, Center for Responsive Politics, http://www.opensecrets.org/politicians/summary.php?cycle=2012&cid=N00012672&type=I (last visited Oct. 17, 2011) (showing that Oil and Gas contributors put forth $52,000 towards Pearce's campaign).

[100] *Id*.

[101] *See Senator John Cornyn, supra* note *98*.

[102] *See id*. (revealing ExxonMobil's contribution of $70,600 to Sen. Cornyn's campaign).
[103] S. 782, 112th Cong SA 429 (proposing exclude listing of the lesser prairie chicken); S. 782, 112th Cong SA 397 (proposing exclude listing of the sage-brush chicken).
[104] *See, e.g*., Defenders of Wildlife, Investing in Nature: the Economic Benefits of Conserving Natural Areas in Northeast Florida (2004), http://www.defenders.org/resources/publications/programs_and_policy/science_and_economics/conservation_economics/valuation/investing_in_nature.pdf (detailing the economic benefits of resource conservation in northeast Florida, including benefits flowing from increased tourism, recreation opportunities and quality of life); ECONorthwest, Coalition for Sonoran Desert Protection, Economic Benefits of Protecting Natural Resources in the Sonoran Desert 1, 27 (2002), http://www.sonorandesert.org/uploads/files/economicreport.pdf (discussing the economic benefits of protecting resources in the Sonoran Desert); Niemi et al., *supra* note 11 (describing the economic benefits that resulted from forest protection in the Pacific Northwest).
[105] *See generally* Thomas M. Power, *Public Timber Supply, Market Adjustments, and Local Economies: Economic Assumptions of the Northwest Forest Plan*, 20 Conservation Biology 341 (2006) (deconstructing the Northwest Forest Plan in the Pacific Northwest to stabilize local economies).
[106] *See* Niemi et al., *supra* note 11, at 3 (describing the widespread economic fears that were plaguing community members after Judge Dwyer instituted an injunction on timber sales).
[107] *See id*..
[108] *See id*. at 16 (recalling timber industry groups' predictions that owl protection would reduce total employment in Oregon by 102,000 and 150,000 jobs).
[109] *See id*. at 14-15 (commentating on public expressions of the economic fears associated with declines in timber sales).
[110] Power, *supra* note 104, at 348-9.
[111] *See* Niemi et al., *supra* note 11, at 21-33. Ironically, Representative Pearce refers to the logging ban in the Pacific Northwest as being emblematic of the way in which wildlife protection causes economic distress. *See* Simonich, *supra* note 25.
[112] *See* ECONorthwest, supra note 103, at 1, 27 (concluding that the benefits of resource conservation in the Sonoran Desert are increasing relative to the costs of that conservation).
[113] *See, e.g., id*. at 38 (reporting that preservation of natural resources can lead to an economic stimulus in the local economy).
[114] *Cf*. U.S. Fish & Wildlife Serv. et al., *supra* note 40, at 22 (explaining that if certain soils are removed can result in active erosion or "blowouts" causing damage to the landscape).
[115] *Cf*. Davis et al., *supra* note 29, at 1, 14, 49 (stating that the Lesser Prairie Chicken's diet consists primarily of insects).

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[1] *See* Shasta Darlington, *Cuban Offshore Oil Plans Gain Momentum,* CNN (Sept. 1, 2010), http://articles.cnn.com/2010-09-01/world/cuba.oil_1_rig-cupet-drilling-companies?_s=PM:WORLD (reporting that if drilling began in mid-year 2011, the exploratory wells would be completed by 2014). *But see* Jeff Franks, *Arrival of Cuba Offshore Oil Rig Delayed Again*, Reuters (Oct. 12, 2011), http://www.reuters.com/article/2011/10/12/cuba-oil-idUS-N1E7930U020111012 (stating that the arrival of the oil rig has been delayed until December 2011).
[2] *See* Thomas Omestad, *Cuba Plans New Offshore Drilling in Search for Big Oil Finds in the Gulf of Mexico*, U.S. News & World Rep. (Feb. 3, 2009), http://www.usnews.com/news/energy/articles/2009/02/03/cuba-plans-new-offshore-drilling-in-search-for-big-oil-finds-in-the-gulf-of-mexico/ (noting that foreign firms have signed exploration and production agreements for 21 of the 59 blocks, are discussing contracts over the 23 additional blocks, and that that some commentators foresee Cuban offshore drilling increasing the cost of the U.S. embargo policy).
[3] *See id.* (stating that some U.S. law makers have "urged that an exception be made in the embargo to permit energy cooperation").
[4] *See, e.g.,* Press Release, The U.S. Attorney's Office, Dist. of Colo., Boulder Company Sentenced for "Trading with the Enemy" (Sept. 17, 2009), *available at* http://www.justice.gov/usao/co/press_releases/archive/2009/September09/9_17_09.html.
[5] H.R. Res. 372, 112th Cong. (2011) (permitting the U.S. Secretary of the Interior to deny drilling leases to foreign companies that deal with countries under U.S. trade sanctions, including Cuba.).
[6] Sean Thomas, *50 Years of Sanctions: Time for a Cuban Healing,* RT Politics (edited Oct. 22, 2010, 05:09), http://rt.com/politics/russian/us-cuba-economic-embargo/ ("In 1960, President Eisenhower enacted the first serious embargo against Cuba, halting all sugar purchases from the country, ending all oil deliveries and continuing arms embargos that were in place during the revolutionary period, starting in 1958.").
[7] *See id.* (noting that the embargo and the mobilization of Cuban exiles was an attempt to overthrow Fidel Castro and reestablish U.S. influence); *See also* John Sweeny, *Why the Cuban Trade Embargo Should Be Maintained,* Heritage Found. Backgrounder, Nov 10, 1994, at 4, *available at* http://thf_media.s3.amazonaws.com/1994/pdf/bg1010.pdf (noting that the original goals of the embargo were to "compel Castro to open Cuba's economy and establish democracy, to weaken Cuba's communist regime, and to force Castro to relinquish power").
[8] 22 U.S.C. § 2370(a)(1) (2006).
[9] Proclamation No. 3447, 27 Fed. Reg. 1085 (Feb. 7, 1962).
[10] *See* Thom Woodroofe, *Time to Bring Cuba in from the Cold*, Sydney Morning Herald (Nov. 3, 2010) http://www.smh.com.au/opinion/politics/time-to-bring-cuba-in-from-the-cold-20101103-17do3.html (describing how President Kennedy signed the executive order implementing the Cuban embargo).
[11] These regulations prohibit United States Citizens and corporations from conducting business transactions with Cuba or Cuban nationals. The statute includes transactions involving property in Cuba or belonging to Cuban nationals unless the transaction occurs under license. *See* Cuban Assets Control Regulations, 31 C.F.R. § 515.201 (2011).
[12] The TWEA empowers the president to control or prevent trade with a foreign country at a time of war. *See* 50 U.S.C. § 1702 (2006).
[13] Helms-Burton Act of 1996, 22 U.S.C. §§ 6021-6091 (2006).
[14] Woodroofe, *supra* note 8.
[15] 22 U.S.C. § 6064 (2006).
[16] John W. Boscariol et al., *Export Controls and Economic Sanctions*, 44 Int'l Law. 25, 33 (2010) (noting that the Omnibus Act lightens restrictions on travel and remittances to Cuba); 31 C.F.R. § 515.561.
[17] A January 14, 2011 press release announced changes to policies governing "(1) purposeful travel; (2) non-family remittances; and (3) U.S. airports supporting licensed charter flights to and from Cuba." The measures are said to "increase people-to-people contact; support civil society in Cuba; enhance the free flow of information to, from, and among the Cuban people; and help promote their independence from Cuban authorities." Press Release, The White House Office of the Press Secretary, Reaching Out to the Cuban People (Jan. 14, 2011), http://www.whitehouse.gov/the-press-office/2011/01/14/reaching-out-cuban-people.
[18] *See* Daniel Hernandez, *U.S. Opens the Door Further on Travel to Cuba*, L.A. Times (Jan. 25, 2010), http://latimesblogs.latimes.com/laplaza/2011/01/cuba-travel-restrictions-obama-white-house-.html (discussing loosening restrictions on Cuba under Obama and the Cuban government's response).
[19] *See* Nelson Acosta, *Cuba Says U.S. embargo has Toughened Under Obama*, Reuters (Sept. 15, 2010), http://www.reuters.com/article/idUS-TRE68E4FS20100915 (quoting the Cuban Foreign Minister stating "[t]he embargo policy in the last two years, that is to say under the government of President Obama, has not changed at all . . . [i]n some aspects it has even hardened").
[20] *See* Howard LaFranchi, *Obama Eases Cuba Travel, but Embargo Remains*, Christian Sci. Monitor, Apr. 13, 2009, http://www.csmonitor.com/USA/Foreign-Policy/2009/0413/p90s01-usfp.html (stating the actual easing of sanctions is merely due to keeping family connections but really does nothing to change the economic sanctions placed on Cuba or better the Cuban-US relationship).
[21] It is important to note that the President alone cannot end the embargo; an act of Congress is required. Patrick J. Haney & Walt Vanderbush, The Cuban Embargo: The Domestic Politics of an American Foreign Policy 162 (2005).
[22] *See* Rachel D. Solomon, Note, *Cuban Baseball Players, the Unlucky Ones: United States-Cuban Professional Baseball Relations Should Be an Integral Part of the United States-Cuba Relationship*, 10 J. Int'l Bus. & L. 153, 169 (2011) ("The United States' embargo against Cuba stems from the 1917 Trad-

ing With the Enemy Act . . . , which bans transfers of property between United States citizens and enemy nations, unless authorized by the President.")

[23] *See* 31 C.F.R. § 515.201 (identifying the specific transactions that are prohibited between Cuba and the United States and its territories).

[24] *See United States v. Platte River Assocs.*, CRIM.08-CR-00295-WYD, 2009 WL 130347 at 1, 2 (D. Colo. 2009) (holding that the providing computer software used in oil exploration to Cuba violated the TWEA and that the defendant engaged in illegal transactions with Cuba); *See also* Press Release, U.S. Attorney's Office, *supra* note 4.

[25] Repsol holds oil exploration leases with Cuba. *Repsol has Contract for Oil Rig Said Cuba-Bound*, Reuters (May 5, 2010), http://www.reuters.com/article/2010/05/05/cuba-oil-repsol-idUSN0512908420100505.

[26] *Platt River*, *supra* note 24, at 1.

[27] Press Release, U.S. Attorney's Office, *supra* note 4.

[28] *Id.*

[29] *See* Christopher Schenk, United States Geological Servs., Geological Assessment of Undiscovered Oil and Gas Resources of the North Cuba Basin, Cuba (2010), *available at* http://pubs.usgs.gov/of/2010/1029/pdf/OF10-1029.pdf (noting that current data estimates 4.6 billion barrels of oil off of Cuba).

[30] Monica Hatcher, *Cuba Drilling Poses Spill Issue: Group Says Trade Embargo Could Hinder a Response by the U.S.*, Hous. Chron. (Sept. 6, 2010), http://www.chron.com/disp/story.mpl/business/7186410.html.

[31] Jeff Franks, *Cuban Oil Production Could be a Catalyst for a Change in Relations with U.S.* N.Y. Times, (Nov. 5, 2010), http://www.nytimes.com/2008/06/12/business/worldbusiness/12iht-cubaoil.4.13670441.html, at 1.

[32] *Id.*

[33] *See* Hilary Moise, *U.S. Embargo against Cuba under Growing Siege*, Council on Hemispheric Aff. (July 18, 2006), http://www.coha.org/cuba-embargo-under-growing-siege/ (describing the unpopularity and unprofitability of the U.S. Embargo against Cuba among U.S. businesses).

[34] Hatcher, *supra* note 30.

[35] *See* Tim Padgett, *How Cuba's Oil Find Could Change the US Embargo*, Time (Oct. 23, 2008), http://www.time.com/time/world/article/0,8599,1853252,00.html#ixzz13Li5cosN (quoting Kirby Jones, the head of the U.S.-Cuba Trade Association, stating in reference to Cuban oil that "there will be a feeling that there is a real [U.S.] price to be paid for [maintaining] the embargo").

[36] *See* Maryann Tobin, *Gov. Arnold Schwarzenegger Accuses Oil Companies of Self Serving Greed*, Examiner.com (Sept. 30, 2010), http://www.examiner.com/political-spin-in-national/gov-arnold-schwarzenegger-accuses-oil-companies-of-self-serving-greed-video (noting that Governor Schwarzenegger said that Texas oil companies who were pushing propositions in California were using "millions of dollars of scare-tactic advertising" to "manipulate the will of the people and the public good"); *See also, Story of Hatred of Rockefellers*, N.Y. Times (Aug. 12, 1907), http://query.nytimes.com/mem/archive-free/pdf?res=F60C1EF8385512*738DDDAB0994D0405B878CF1D3* (quoting Frank Rockefeller who describes his brother, oil baron, John D. Rockefeller as a "monster merciless in greed").

[37] *See* Editorial, *The House and Global Warming*, N.Y. Times, June 26, 2009. At A24 (stating that the outcome of a House bill on global warming is dependent upon politicians who "fear higher energy costs for businesses and consumers.").

[38] Zachary Goldfarb, *Cheney Pushes for More Drilling*, Wash. Post (June 12, 2008), http://www.washingtonpost.com/wp-dyn/content/article/2008/06/11/AR2008061103948.html.

[39] *See* Emily Gertz, *Can Offshore Drilling Really Make the U.S. Oil Independent?*, Scientific Am. (Sept. 12, 2008), http://www.scientificamerican.com/article.cfm?id=can-offshore-drilling-make-us-independent (noting that the United States currently consumes 20 million barrels daily with projected consumption in 2030 of 23 million).

[40] *Id.*

[41] *See id.* (discussing that fuel prices are based on the amount of oil in known reserves and that increasing the reserves with Cuban oil will drive down the price).

[42] Simon Romero, *Spanish Seek Oil Off Cuba*, N.Y. Times (July 5, 2004), http://www.nytimes.com/2004/07/06/business/international-business-spanish-seek-oil-off-cuba-potential-shift-in-gulf-output.html?pagewanted=print.

[43] *See* Nick Miroff, *Cuban Offshore Drilling Plans Raise U.S. Concerns*, Nat'l Pub. Radio (Sept. 12, 2011), http://www.npr.org/2011/09/12/140405282/cuban-offshore-drilling-plans-raise-u-s-concerns (discussing U.S. oil experts' trip to Havana to address environmental concerns).

[44] On April 20, 2010, an explosion on a BP operated oil rig in the Gulf of Mexico left eleven workers dead, sinking the rig two days later. For eighty-seven days the well discharged millions of gallons of oil and natural gas into the ocean before finally being contained. Scientists are still assessing the spill's impact on the Gulf of Mexico. *See, e.g.*, Campbell Robertson & Leslie Kauffman, *Size of Spill in Gulf of Mexico Is Larger Than Thought*, N.Y. Times (Apr. 28, 2010), http://www.nytimes.com/2010/04/29/us/29spill.html; *Talk of the Nation: Assessing the BP Spill's Impact*, Nat'l Pub. Radio (Sept. 16, 2010), http://www.npr.org/templates/story/story.php?storyId=129910789.

[45] *See* Victoria Burnett, *U.S. is Urged to Plan Aid Cuba in Case of an Oil Spill*, N.Y. Times (Sept. 8, 2011), http://www.nytimes.com/2011/09/09/world/americas/09cuba.html (quoting William Riley, the co-chairman of the Deepwater Horizon oil spill investigation, as urging the United States to adopt plans for a Cuban oil spill).

[46] *See* David Goodhue, *Cuba Leases to Bring Deepwater Drilling Within 50 Miles of Key West*, WorkBoat.com (Sept. 9, 2010), http://www.workboat.com/newsdetail.aspx?id=4294998861 (quoting Lee Hunt, president of the International Association of Drilling, as he discusses how the embargo would impede U.S. companies from aiding Cuba if an oil spill occurred).

[47] *Id.*

[48] Lesley Clark & Sara Kennedy, *Cuba Ready to Drill for Oil Deeper than BP*, Palm Beach Post (Sept. 30, 2010), http://www.palmbeachpost.com/news/world/cuba-ready-to-drill-for-oil-deeper-than-946069.html?printArticle=y.

[49] *See* Rory Carroll, *Cuba Braces to Contend with BP Oil Spill*, Guardian (June 16, 2010), http://www.guardian.co.uk/world/2010/jun/16/cuba-braces-bp-oil-spill (quoting several Cuban officials who were concerned about damage to Cuba due to the Deepwater Horizon oil spill).

[50] *Id.*

[51] Johannes Werner, *Oil Spill Doesn't Slow Down Cuba's Drilling Program*, St. Petersburg Times (May 14, 2010), http://www.tampabay.com/news/business/energy/oil-spill-doesnt-slow-down-cubas-drilling-program/1095064.

[52] *See* Jack Nelson, *Embargo of Cuba Exacts a 'Tragic Human Toll,' Health Report Charges*, L.A. Times, (Mar. 3, 1997), http://articles.latimes.com/1997-03-03/news/mn-34339_1_health-association (discussing the results of a study by the American Association for World Health which found that the embargo increased suffering and deaths in Cuba).

[53] *See* Joseph Bradica, *Havana Club Rum: One Step Back for U.S. International Trademark Policy*, 16 Temp. Int'l & Comp. L.J. 147, 157 (2002) (noting that critics claim that the embargo, by preventing medical technology from arriving in Cuba, has lead to a rise in disease).

[54] Nelson, *supra* note 52.

[55] *Id*.

[56] A survey of 135 Havana metropolitan area residents revealed that "an overwhelming majority" (ninety-three percent) was against the embargo, with seven percent responding that the embargo was good or did not matter. Alberto R. Coll, *Harming Human Rights in the Name of Protecting Them: The Case of the Cuban Embargo*, 12 UCLA J. Int'l L. & Foreign Aff. 199, 270–71 (2007).

[57] In contrast to America's relations with Cuba, the United States has denounced China's human rights record yet continued to trade heavily with the nation. A recent joint statement between China and the United States says China welcomes the United States as a stabilizing force in the Asia-Pacific region and the United States welcomes "a successful China that plays a greater role in world affairs." *See* Lexington, *China in the Mind of America*, The Economist, Jan. 22, 2011, at 43; *See also* Mark Knoller, *Obama: I'll Stick with Embargo For Now*, CBS News (April 20, 2009, 2:50 AM), http://www.cbsnews.com/stories/2009/04/19/politics/100days/worldaffairs/main4955009.shtml (discussing how some commentators criticize the United States for trading with China, a communist country with known human rights abuse issues, while not trading with Cuba).

[58] *See* Nelson, *supra* note 52 (noting how the U.N. has passed resolutions condemning the embargo and requesting that the United States end the embargo).

[59] *See Castro Opponent Free After 17 Years in Jail*, Reuters (April 3, 2007), http://www.reuters.com/article/2007/04/23/us-cuba-prisoner-idUSN2331960920070423 (discussing the story of a Cuban political prisoner who was jailed after shouting slogans against Fidel Castro at a music concert).

[60] *See* Yoani Sanchez, *Communist Party Congress to Work on Economy but not Human Rights*, Huffington Post (Nov. 14, 2010, 6:09 PM), http://www.huffingtonpost.com/yoani-sanchez/communist-party-congress_b_783317.html (discussing how in Cuba one "cannot leave without permission" and "free association is punished").

[61] *Cuba: Release of Dissidents Still Leaves Scores in Prison*, Human Rights Watch (July 8, 2010), http://www.hrw.org/en/news/2010/07/08/cuba-release-dissidents-still-leaves-scores-prison.

[62] *See* Paul Haven*, Cuba to Chart Economic Future at Party Congress*, Seattle Times (Nov. 9, 2010), http://seattletimes.nwsource.com/html/busi-

nesstechnology/2013384454_apcbcubapartycongress.html (discussing an economic proposal made by communist party leaders and affirming that Cuba will stay a one party socialist system).

[63] *Id.*

[64] *See Cuba to Study Oil Spill Risks and Prevention*, Radio Cadena Agramonte (Jan. 29, 2011), http://www.cadenagramonte.cu/english/index.php?option=com_content&view=article&id=4151:cuba-to-study-oil-spill-risks-and-prevention&catid=2:cuba&Itemid=14 (discussing Cuban officials planning workshops to study the threat and prevention of oil spills).

[65] *Cuba Looks to Cooperate on Offshore Safety*, Upstreamonline.com (Aug. 25, 2010, 18:25 GMT), http://www.upstreamonline.com/live/article227380.ece.

[66] *See* Andres Schipani, *US Bill to Bar Oil Groups with Cuban Links,* Fin. Times (Feb. 25, 2011), http://www.ft.com/cms/s/0/cdf8d4b4-4060-11e0-9140-00144feabdc0.html#axzz1F2K2yOqC (noting that several foreign oil companies are trying to obtain licenses to drill in Cuba).

[67] *International Oil Spills*, U.S. Dep't of State, http://www.state.gov/g/oes/ocns/opa/marine/oil/index.htm (last visited Nov. 8, 2011).

[68] *Id.*

[69] *See id*. (listing exclusively all countries with which United States has oil spill agreements); *See also* Lesley Clark, *Coast Guard Preparing for Cuba Oil Spills*, McClatchy (Sept. 30, 2010), http://www.mcclatchydc.com/2010/09/30/101416/coast-guard-preparing-for-cuba.html (noting that no oil spill agreement exists between the United States and Cuba).

[70] The Joint Contingency Plan Between the United Mexican States and the United States of America Regarding Pollution of the Maritime Environment by Discharge of Hydrocarbons or Other Hazardous Substances, U.S.-Mex., Feb. 25 2000, 32 U.S.T. 5899 [*hereinafter* MEXUS Plan].

[71] *Id.* at 1; International Convention on Oil Pollution Preparedness, Response and Cooperation, Nov. 30, 1990, 1891 U.N.T.S. 51, S. Treaty No. 102-11.

[72] *See* Daniel Whiting, 1997 Int'l Oil Spill Conference, MEXUS Plan: Mexico/United States Bilateral Response Plan 967, 967 (1997), http://www.iosc.org/papers/01240.pdf (stating that the agreement requires the "development of a bilateral response plan").

[73] *Id.* at 168–69 (stating that elements of the plan were tested in 1995 and 1996 to determine their validity).

[74] Staff Trip Rep. to the Comm. On Foreign Relations, 111th Cong., Changing Cuba Policy in the United States National Interest 6 (Comm. Print 2009) (stating that Cuban officials indicated to U.S. representatives that they were interested in cooperating with the United States on security and commerce issues).

[75] *See U.S. Rep. Cliff Stearns says Cuba and China are Partnering to Drill for Oil off Florida's Coast*, PolitiFact Florida (Mar. 30, 2010), http://politifact.com/florida/statements/2010/mar/31/cliff-stearns/cliff-stearns-cuba-china-oil-drilling/ (stating that Cuba potentially could drill within forty-five miles off the coast of Florida, closer than U.S. companies are legally permitted).

[76] Franks, *supra* note 31.

[77] *See* Jillian L. Genaw, *Offshore Oil Drilling in the United States and the Expansion of Cuba's Oil Program: A Discussion on Environmental Policy*, 20 Ind. Int'l & Comp. L. Rev. 47, 70–71 (2010) (arguing that allowing U.S. oil companies to conduct more offshore drilling will reduce the risk of environmental harm by decreasing imports from foreign oil tankers, which have a higher rate of oil spills).

[78] *See* Maria Gavrilovic, *Obama Says Dependency on Foreign Oil Poses Terrorist Threat to U.S.*, CBS News (July 11, 2008 2:24 PM), http://www.cbsnews.com/8301-502443_162-4253821-502443.html (quoting Barack Obama stating that foreign countries can use profits from oil to fund terrorists); *Sarah Palin 'Still Considering' 2012 Run, Admits She Gets Her 'Butt Kicked' in Polls*, NYPOST.com (posted Feb. 17, 2011 9:46AM), http://www.nypost.com/p/news/local/palin_to_answer_questions_from_ny_h20Rw0ytsQeli7Rh2s9RCN (quoting Sarah Palin as saying that it made sense not to rely on foreign regimes that "can use energy as a weapon against us").

[79] Genaw, *supra* note 77.

[80] *See* Franks, *supra* note 1.

[81] On the other hand, Cuban oil independence would likely result in loosening Venezuelan influence, a current concern of the United States. *See* Kristen Begg, *US Report Slams Cuba and Venezuela for Guerrilla Links*, Colom. Rep. (Aug. 5, 2010, 16:10), http://colombiareports.com/colombia-news/news/11201-us-report-slams-cuba-and-venezuelas-terrorist-links.html (noting that the State Department listed Venezuela with countries that do not cooperate with U.S. anti-terrorism efforts).

[82] *See* Brian Latell, *Raul Skating on thin Ice*, Miami Herald (Jan. 28, 2010), http://www.miamiherald.com/2011/01/28/2038545/raul-skating-on-thin-ice.html ("Raúl Castro's performance of late has generated more doubts about the viability of the family dictatorship than at any time since he and Fidel won power more than 50 years ago.").

[83] Rory Carroll, *Fidel Castro Says his Economic System is Failing*, Guardian (Sept. 9, 2010), http://www.guardian.co.uk/world/2010/sep/09/fidel-castro-cuba-economic-model.

[84] *Id.*

[85] Raul Castro once told reporters asking if there would be changes to post-Fidel Cuba, "Yes, toward a better form of socialism and—here's something you'll like—toward a more democratic society." Morgan Neil, *Younger Castro Hints at 'More Democratic' Cuba*, CNN (Feb 20, 2008), http://edition.cnn.com/2008/WORLD/americas/02/20/raul.castro/index.html.

[86] Leonard Doyle, *The End of Communism? Cuba Sweeps Away Egalitarian Wages*, Independent (Jun. 13, 2008), http://www.independent.co.uk/news/world/americas/the-end-of-communism-cuba-sweeps-away-egalitarian-wages-846248.html.

[87] H.R. 372, 112th Cong. (2011).

[88] The bill would restrict U.S. offshore drilling licenses from companies that aid Cuban drilling efforts by amending the Outer Continental Shelf Lands Act, 43 U.S.C. § 1337(a), to add: (9) The Secretary may deny issuance of an oil and gas lease under this Act, or a permit for exploration, development, or production under such a lease, to any person that has engaged in activities with the government of any foreign country that is subject to any sanction or an embargo established by the Government of the United States, including any sanction or embargo established under section 203 of the Emergency Economic Powers Act (50 U.S.C. 1702). *Id.* at § 1.

[89] *See* Kevin Derby, *Vern Buchanan Introduces Bill to Stop Cuban Offshore Drilling Near Florida,* Sunshine St. News (Jan. 21, 2011 11:45 AM), http://www.sunshinestatenews.com/story/vern-buchanan-introduces-bill-stop-cuban-offshore-drilling-near-florida (stating that Vern Buchanan believes his legislation, if passed, will induce Repsol into abandoning its Cuban drilling); *See also* Judson Berger, *Lawmaker Aims to Block Cuba Oil Drilling Near Florida Coast*, FoxNews.com (Jan. 24. 2011), http://www.foxnews.com/politics/2011/01/24/lawmaker-aims-block-cuba-oil-drilling-near-florida-coast/ (noting that Vern Buchanan wants to threaten Repsol's assets in U.S. territory through the new bill).

[90] Berger, *supra* note 89.

[91] *See Repsol Continues with Drilling Plans in Cuba*, Cuba Standard (Jan. 29, 2010, 10:56 PM), http://www.cubastandard.com/2011/01/29/repsol-continues-with-drilling-plans-in-cuba/ (noting how Repsol continues its plans to drill in Cuba despite the threat of Vern Buchanan's bill).

[92] The United States has often sanctioned foreign companies for dealing with Cuba. *See* Juan O. Tomayo, *US Could Sanction Dutch Bank for Doing Business with Terror Sponsors*, Miami Herald (July 27, 2011), http://www.miamiherald.com/2011/07/27/2333786/us-could-sanction-dutch-bank-for.html#ixzz1fX4JT6PK (reporting that Dutch Bank ING faces huge fines from the United States for possible transaction with Cuba); *see also* David M. Shamberger, *The Helms-Burton Act: A Legal and Effective Vehicle for Redressing U.S Property Claims in Cuba and Accelerating the Demise of the Castro Regime*, 21 B.C. Int'l & Comp. L. Rev. 497, 505 (1998) (noting that the U.S. government sanctioned two foreign companies, who operated in Cuba, by refusing access to their principals and families to America).

[93] *But see* Thomas Wire, *Misguided Effort on Cuba Oil Drilling*, St. Petersburg Times (Feb. 7, 2011), http://www.tampabay.com/opinion/editorials/misguided-effort-on-cuba-oil-drilling/1149686 (arguing that the United States should be pursuing cooperation with Cuba to prevent oil spills rather than attempting to stop the drilling).

[94] *See*, Thomas J. Donohue, *The Cuban Economic Embargo: Time for a New Approach*, Cato Inst. (Feb. 15, 2000), http://www.cato.org/pub_display.php?pub_id=5081&full=1 (stating that the embargo gives Fidel Castro an excuse for his failed economy).

[95] *See* Neil, *supra* note 76.

Endnotes: The Arctic Council: Gatekeeper or Doormat to the World's Next Major Resource Battle?

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[1] *See* 1 George Santayana, *Reason in Common Sense, in* Vol. 1 The Life of Reason 284 (1905), http://www.gutenberg.org/files/15000/15000-h/vol1.html.

[2] According to the Merriam-Webster's dictionary "land grab" means "a usually swift acquisition of property often by fraud or force." *Land Grab Definition*, Merriam-Webster Dictionary, http://www.merriam-webster.com/dictionary/land-grab (last visited Nov. 18, 2011). There have been countless land grabs throughout history, two of the most notable are "Manifest Destiny" and "The Scramble for Africa." *See id*. The Cambridge dictionary further defines "land grab" as "the act of taking an area of land by force, for military or economic reasons." *Land Grab Definition*, Cambridge Dictionaries Online, http://dictionary.cambridge.org/dictionary/business-english/land-grab (last visited Nov. 18, 2011).

[3] *See The Arctic is Poised to be Oil's Final Frontier*, Seeking Alpha (Sept. 28, 2011), http://seekingalpha.com/article/296430-the-arctic-is-poised-to-be-oil-s-final-frontier [hereinafter *Oil's Final Frontier*]; Sergey Andaykin, *Large Russian Interest for Arctic Licenses*, Barents Observer (Oct. 24, 2011), http://www.barentsobserver.com/index.php?id=4976120&cat=116320&printable=1; *see generally* Peter F. Johnston, *Arctic Energy Resources and Global Energy Security*, 12 J. Mil. & Strategic Stud., no. 2 (2010) (citing various efforts by arctic nations, through political and commercial entities, to explore the oceans and continental shelf in the Arctic and to stake their claim to any resources).

[4] There is no certain way to know the amount of oil and natural gas available in the Arctic formations because methodologies of estimation are so varied. Figures range wildly from 44 billion to 157 billion barrels of oil (13% of the world's undiscovered supply), and 770 trillion cubic feet to 2,990 trillion cubic feet of natural gas (approx. 30% of the world's undiscovered natural gas). *See* Johnston, *supra* note 3, at 2-4.

[5] *See Oil's Final Frontier, supra* note 3 (citing technological feasibility of exploration in the Arctic by the world's larger oil companies like Exxon and Rosneft); Christoph Siedler, *Taking Stock of North Pole Riches*, Speigel Online (Sept. 7, 2009), http://www.spiegel.de/international/world/0,1518,druck-648197,00.html (discussing the technological feasibility of oil and gas development in the Arctic); Duncan E.J. Currie, *Sovereignty and Conflict in the Arctic Due to Climate Change: Climate Change and the Legal Status of the Arctic Ocean*, GlobeLaw.com (Aug. 5, 2007), http://www.globelaw.com/LawSea/Climate_Change_and_Arctic_Sovereignty.html (providing evidence about the changing environmental factors that lead to political conflicts and negotiations over sovereignty of the Arctic).

[6] *See Oil's Final Frontier*, *supra* note 3; *see also* Siedler, *supra* note 5 (discussing increased interest in the Arctic by large oil companies and geological studies and surveys that speak to the technical and economic feasibility of tapping into the Arctic fossil fuel reserves).

[7] *See* Johnston, *supra* note 3, at 1, 18-20 (discussing the concerns about the global availability of oil and natural gas, China's increasing demands for fossil fuels, and the hope/expectation that Arctic reserves will alleviate the strain on global supplies).

[8] *See* Currie, *supra* note 5 (noting reductions in ice sheet and permafrost cover, and other drastic changes to the Arctic environmental as a result of changing climates that provides access to shipping channels and other commercial development in the Arctic); Linda Nowlan, Arctic Legal Regime for Environmental Protection, International Union for Conservation of Nature and Natural Resources 2-3 (2001) (showing further evidence of melting ice and increasing temperatures in the Arctic).

[9] *See* Nowlan, *supra* note 8, at 9-10 (discussing the impetus behind the creation of the Arctic Council).

[10] The eight original member nations are the United States, Canada, Russia, Iceland, Norway, Denmark, Finland, and Sweden. *See* Lev Levit, About Us: Member States, Arctic Council (Jul. 29 2011), http://www.arctic-council.org/index.php/en/about-us. The eight original member states have voting power and discretion over all matters and initiatives discussed by the Arctic Council. *See Arctic Council Rules of Procedure: General Provisions Rule 7*, Arctic Council (Sept. 17-18, 1998), http://www.arctic-council.org/index.php/en/about/documents/category/4-founding-documents (download *Arctic Counsel Rules of Procedure*) [hereinafter *Rules of Procedure*].

[11] The permanent-observer nations are France, Germany The Netherlands, Poland, Spain, and the United Kingdom. *See About Us: Observers*, Arctic Council (Apr. 27, 2011), http://www.arctic-council.org/index.php/en/about-us/partners-links.

[12] Nowhere in the Rules of Procedure adopted by the Arctic Council, does it provide for voting rights to Observers, but the rules do allow for Observers to submit statements at Ministerial Meetings of the Council. Therefore, by negative implication, there are no voting rights allotted to Observer Nations. Also, to obtain the status of "Observer" the Council implicitly determines that the subject observer has sometime to contribute to the Council, therefore participation is essential and encouraged. *See generally Rules of Procedure, supra* note 10.

[13] *See About the Arctic Council*, Arctic Council (Apr. 7, 2011), http://www.arctic-council.org/index.php/en/about-us [hereinafter *About the Arctic Council*].

[14] *Id*.

[15] *See* Declaration on the Establishment of the Arctic Council (Sept. 19, 1996), http://www.arctic-council.org/index.php/en/about/documents/category/4-founding-documents [hereinafter *Ottawa Declaration*].

[16] *See* Nowlan, *supra* note 8, at 9-16.

[17] The Arctic Environmental Protection Strategy ("AEPS") was a non-binding declaration made five years before the creation of the Arctic Council. Most if not all of the member-nations of the AC were present and signed on to the AEPS, which makes affirmative commitments to investigate, mitigate, and protect the Arctic against the effects of pollution brought on by fossil fuel development (among other things). *See* Arctic Environmental Protection Strategy, U.S.-Can.-Russ.-Fin.-Ice.-Nor.-Swed.-Den., at 2-4, 9-10, 14-15, Jun. 14, 1991,http://www.arctic-council.org/index.php/en/about/documents/file/53-aeps (download Arctic Environmental Protection Strategy). The Arctic Council is often seen as the outgrowth of AEPS, and was by many accounts expected to further the goals of AEPS. *See* Nowlan, *supra* note 8, at 9. Therefore, the AC goals of "sustainable development" must have some nexus with the environmental aims of AEPS. It is not unreasonable to expect the AC to have some interest in regulating the development of fossil fuels in the Arctic.

[18] *See* Nowlan, *supra* note 8, at 9, 11, 15-16 (discussing the impetus behind the creation of the Arctic Counsel, analyzing the effectiveness of the Council in light of barriers to funding and decision-making power, and the inherent tension between environmental concerns and sustainable development that predominate the Council's dialogue.)

[19] *See* Robert Sibley, *China Enters the Arctic Equation*, Postmedia News (Oct. 28, 2011), http://www.canada.com/news/China+enters+Arctic+equation/5625499/story.html (discussing the speech and support expressed by the Danish Ambassador in his latest speech in Beijing).

[20] Specifically, Sibley wrote, "Some suggest the Danish ambassador was not only trying to leverage Denmark's influence in the Arctic Council, but soliciting Chinese investment to help the Danes exploit Greenland's natural resources. And from China's perspective, they say, the ambassador's remarks reflect China's interest in gaining access to resources and increasing its geopolitical clout." *See id*. (citing noted scholars and analysts from the University of Calgary who have tracked China's increased interest in Arctic resources and China's questioning of Canadian sovereignty over the Northwest Passage).

[21] *See generally* Government of Canada, Statement on Canada's Arctic Foreign Policy: Exercising Sovereignty and Promoting Canada's Northern Strategy Abroad, Government of Canada (2010), http://www.international.gc.ca/polar-polaire/canada_arctic_foreign_policy_booklet-la_politique_etrangere_du_canada_pour_arctique_livret.aspx?lang=eng&view=d (making strong, broad, and sweeping assertions about Canadian rights to sovereignty in certain areas of the Arctic, and expressing a plan to exercise those rights through the Arctic Council and other mechanisms).

[22] *See* Toni Johnson, *Thawing Arctic's Resource Race*, Council on Foreign Relations (Aug. 9, 2007), http://www.cfr.org/arctic/thawing-arctics-resource-race/p13978 (last visited Nov. 19, 2011) (discussing the move to place a flag, and the subsequent "research team" that went out to prove that the Arctic's underwater ridge connected to the Siberian Continental Shelf, thus giving Russia a claim to sovereignty under international maritime law).

[23] Exec. office of the president, U.S. Arctic Region Policy (2009), https://rapidlychanginarctic.custompublish.com/getfile.php/868102.1463.wfsxdypcyp/US+Arctic+Policy+2009.pdf [hereinafter *Combined Strategies for the Arctic*].

[24] Presumably, the affirmative statements of the eight member-nations of the AC and the other articles cited in this piece evidence the strong expectation among the global community that the fossil fuel reserves will be developed. *See id*.

[25] The Ottawa Declaration also avows the member-nations' commitment to sustainable development of the natural resources within the Arctic. *See Ottawa Declaration, supra* note 15. Each member nation has enunciated a policy that supports the development of oil and gas reserves in the Arctic in each member-nation's respective "Strategy for the Arctic." *See* Finland Prime Minister's Office, Finland's Strategy for the Arctic Region 19-22 (2010); Governments of Denmark, the Faroes, and Greenland, Kingdom of Denmark Strategy for the Arctic 2011-2020 24-29 (Aug. 2011); Government of Iceland, A Parliamentary Resolution on Iceland's Arctic Policy (2011); Canada Minister of Public Works and Government, Canada's Northern Strategy 14-16 (2009); Norwegian Ministry of Foreign Affairs, New Building Blocks in the North 23-25 (2009); *See also Combines Strategies for the Arctic, supra* note 23, at art. G.

[26] *See* Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling, National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling 126-127 (2011), http://www.oilspillcommission.gov/sites/default/files/documents/FinalReportChapter4.pdf (discussing the failure of government regulators to enforce necessary regulations and maintain proper enforcement to ensure that BP was not cutting corners and lacking in the necessary safeguards to prevent the oil spill).

[27] *See* Nowlan, *supra* note 8, at 10 (noting that a "unique" aspect of the Arctic Council is the fact that provides indigenous people's of the Arctic with 'Permanent Participant' status and provides them with an ability to influence the council's actions).

[28] Nowlan states, "The Arctic Council's effectiveness is significantly enhanced by this innovative approach to indigenous peoples. There is a general consensus among the participants that indigenous involvement in the AEPS has made the process a different and more successful product. Their participation gives 'real life examples' of the impacts of policies and developments." *See* Nowlan, *supra* note 8, at 11.

[29] *See* Nowlan, *supra* note 8, at 15-16 (discussing the lack of enforcement and decision making authority vested in the Council).

[30] *See id.*

[31] *See* Susan Jay Hassol, Impacts of a Warming Arctic: Arctic Climate Impact Assessment 2-5 (2004) (discussing the impacts resource extraction on global and arctic climate change. Further discussing responses to climate change through mitigation of greenhouse gas emissions, and citing the role of fossil fuels in adding to greenhouse gas emissions).

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[1] Jan Hendriks, *Water Laws, Collective Rights and System Diversity in Andean Countries, in* Out of the Mainstream: Water Rights, Politics, and Identity 168-71 (Rutgerd Boelens et al. eds. 2010).

[2] Anthony Bebbington et al., *Federating and Defending: Water, Territory and Extraction in the Andes, in* Out of the Mainstream. Water Rights, Politics and Identity 320 (Rutgerd Boelens et al. eds., 2010); Kate Berry & Eric Mollard, Social Participation in Water Governance and Management: Critical and Global Perspectives (Routledge 2009).

[3] *See generally* Jose Esteban Castro, *Water Struggles, Citizenship and Governance in Latin America*, 51 Development, 72 (2008) (exploring some of the trends and problems that have arisen in Latin America surrounding water access).

[4] *Id*. at 75; Paul H. Gelles, Water and Power in Highland Peru: The Cultural Politics of Irrigation and Development (Rutgers Univ. Press 2000); Antonio Gaybor, *Acumulación en el campo y despojo del agua en el Ecuador, in* Justicia Hídrica: Acumulación, Conflictos y Acción Civil 195-208 (Rutgerd Boelens et al. eds. 2011).

[5] United Nations Environment Programme, Climate Change Hits Hard on Latin America and the Caribbean, (Apr. 6, 2007), http://www.unep.org/documents.multilingual/default.asp? documentid=504&articleid=5558&l=en.

[6] Francisco Pena, *Acumulación de Derechos de Agua y Justicia Hídrica en Mexico: El Poder de Las Elites, in* Justicia Hídrica: Acumulación, Conflictos y Acción Civil 209-22 (Rutgerd Boelens et al. eds. 2011)

[7] *Id.; see also* Erik Swyngedouw, *Dispossessing H20: The Contested Terrain of Water Privatization*, 16 Capitalism Nature Socialism 81, 81-98 (2005); Karen Bakker, Beyond Privatization: Water, Governance, Citizenship (2010); Miguel Solanes & Andrei Jouravlev, Comisión Económica para América Latina y el Caribe (U.N. Cepal), Recursos Naturales e Infraestructura: Water Governance for Development and Sustainability 22-25 (2006).

[8] U.N. Cepal, Recursos Naturales e Infraestructura, *dministración del agua en America Latina y el Caribe en elumbral del siglo XXI*, 12, (July 2001) (by Andrei Jouravlev).

[9] Swyngedouw, *supra* note 7, at 93; Julio F. Alegria, Conflicts and Water Management in Peru in the Context of Climate Change 9-10 (2009), *available at* http://www.iproga.org.pe/boletin/bol2041/JulioAlegria.pdf.

[10] Hendriks, *supra* note 1, at 17-72; Mourik Bueno de Mesquita, *Agua, concentración de recursos naturales y conflictos en el Perú, in* Justicia Hídrica: Acumulación, Conflictos y Acción Civil 179-94 (Rutgerd Boelens et al. eds. 2011).

[11] Swyngedouw, *supra* note 7, at 91.

[12] Rutgerd Boelens & Margreet Zwarteven, *Prices and Politics in Andean Water Reforms*, 36 Development and Change 735, 735-58; Bakker, *supra* note 7.

[13] Hendricks, *supra* note 1, at 168-71.

[14] Swyngedouw, *supra* note 7, at 82.

[15] *Id*. at 83-84.

[16] Pena, *supra* note 6, at 214.

[17] *Id*. at 85 (discussing the establishment of regulatory bodies and the subsequent budgetary issues that led to inefficient operation).

[18] Rutgerd Boelens, *The Politics of Disciplining Water Rights*, 40 Development and Change, 307, 315-18 (2009) [hereinafter *Water Rights*].

[19] *Id*. at 313-14.

[20] Boelens & Zwarteven, *supra* note 12, at 739-44.

[21] Castro, *supra* note 3, at 73; Bebbington et al., *supra* note 2, at 313.

[22] Bebbington, *supra* note 2, at 307-31.

[23] Rutgerd Boelens, Armando Guevara-Gil & Aldo Panfichi, *Indigenous Water Rights in the Andes: Struggles Over Resources and Legitimacy* 20 the journal of water law 268, 275-76. [hereinafter *Indigenous Water Rights*].

[24] *Id*. at 317.

[25] *Id*.

[26] *See, e.g.*, Antoinette Hildering, International Law, Sustainable Development and Water Management (2004); *see, e.g.*, Economic Commission for Europe, 45th Sess., *Charter on Ground-Water Management*, E/ECE/1197 ECE/ENVWA/12 (1989) available at http://www.inter nationalwaterlaw.org/documents/regionaldocs/groundwater_charter.html.

[27] Hildering, *supra* note 26.

[28] James Keese, *International NGOs and Land Use Change in a Southern Highland Region of Ecuador*, 26 Hum. ecology 451, 464-66 (1998); Carols Larrea & Lisa L. North, *Adjustment Policy Impacts on Truncated Development and Democratisation*, 18 Third World Q. 913, 915-29 (1997); *See generally* Victoria A. Lawson, *Government Policy Biases and Ecuadorian Agricultural Change*, 78 Annals Ass'n Am. Geographers 433, 434-49 (1988).

[29] Gaybor, *supra* note 4, at 197-99.

[30] *Id*.

[31] *Id*.

[32] *Id*.

[33] *Id*.

[34] *Id*. at 199.

[35] *Id*.

[36] *Id*.

[37] *Id*.

[38] *Id*.

[39] *Id*.

[40] *Id*. at 200.

[41] *Id*.

[42] *Id*.

[43] *Id*.

[44] *Id*.; Leontien Cremers et al, *Institutional Reform in the Andean Irrigation Sector: Enabling Policies for Strengthening Local Rights and Water Management*, 29 Natural Resources Forum 37, 41 (2005).

[45] Gaybor, *supra* note 4, at 200; Julio A. Berdegue & Ricardo Fuentealba, *Latin America: The State of Smallholders in Agriculture* at 20 (2011).

[46] *Gaybor, supra* note 4, at 200.

[47] *Id*.

[48] *Id*.
[49] *Id*.
[50] *Id*.
[51] *Id*.
[52] *Id*.
[53] *Id*.
[54] *Id*.
[55] *Indigenous Water Rights, supra* note 23, at 271.
[56] *Id*.
[57] Juan Antonio Zúñiga & Israel Rodríguez, *Son 80 millones los pobres que hay en el país, afirma especialista*, La Jornada (July 21, 2009), http://www.jornada.unam.mx/2009/07/21/politica/003n1pol. .
[58] *Id*.
[59] *En manos de 39 familias, 13.5 del PIB*, El Universal (July 2, 2008), http://www.eluniversal.com.mx/finanzas/65197.html.
[60] *Id*.
[61] *See id*.; Pena, *supra* note 6, at 209
[62] Pena, *supra* note 6, at 212.
[63] *Id*.
[64] *Id*. at 212-13.
[65] *Id*. at 213.
[66] *Id*.
[67] *Id*.
[68] *Id*.
[69] *Id*.
[70] *Id*.
[71] *Id*.
[72] *Id*.
[73] *Id*.at 213-14.
[74] *Id*.at 214.
[75] *Id*.
[76] *See generally* S. Vargas & E. Mollard, Problemas Socioambientales y Experiencias Organizativas en Las Cuencas de Mexico (2005).
[77] Tribunal Latinoamericano del Agua, *Caso: Proyecto hidroeléctrico "La Parota" sobre el río Papagayo en el estado de Guerrero, República Mexicana* (Mar. 2006), http://tragua.com/audiencias/2006/veredictos_2006/CasoLaParota.pdf.
[78] Paul Tarwick, *Against the Privitization of Water: An Indigenous Model for Improving Existing Laws and Successfully Governing the Commons*, 31 World Development 977, 978 (2003).
[79] *See id*. at 985-86 (discussing legislation that while "democratic in spirit" deprives farmers of access to water and gives government bureaucracies the distribution power which is frequently misused).
[80] *See* International Federation for Human Rights, *Peru—Bagua: Bloodshed in the Context of Amazon Protest, Urgent Need for Good Faith Dialogue* 14 (2009), http://www.fidh.org/IMG//pdf/rapperou529ang.pdf [hereinafter IDFHR] (stating that since 2006 Indigenous territory has been parceled off to mining and chemical companies).
[81] *Id*. at 14-15.
[82] *Id*.
[83] *Id*. at 15-18.
[84] Amnesty International, *Victims of Peru Amazon Violence Deserve Justice Without Discrimination* (Dec. 2, 2009), http://www.amnesty.org/en/news-and-updates/report/victims-peru-amazon-violence-deserve-justice-without-discrimination-20091 [hereinafter Amnesty].
[85] Anna Luisa Daigneault, *Remembering the Violence at Bagua, One Year Later: A Memorial for Peru's 'Tiannamen Square',* The Media Co-op (Jun. 6, 2010), http://www.mediacoop.ca/story/ 3586.
[86] *See generally* Constitution, Dec. 31, 1993 [Peru].
[87] Amnesty, *supra* note 84.
[88] IDFHR, *supra* note 75, at 25-30.
[89] *Id*. at 31.
[90] Bueno de Mesquita, *supra* note 10, at 180.
[91] *Id*.
[92] IDFHR, *supra* note 75, at 33-35.
[93] *Id*. at 15-16
[94] *Id*. at 15.
[95] *Id*.
[96] Bueno de Mesquita, *supra* note 10, at 183.
[97] *Id*.
[98] *Id*. at 191.
[99] *See* Water Resources Management Modernization Project of Peru, United Nations Educational, Scientific, and Cultural Organization ("UNESCO"), http://www.iciwarm.org/en/about/prjPeru.cfm (last visited Dec. 19, 2011).
[100] Bueno de Mesquita, *supra* note 10, at 191.
[101] *Id*.
[102] *Id*.
[103] *Id*. at 191-92.
[104] *Id*.
[105] *Id*.
[106] *Id*. at 192.
[107] *Id*.
[108] *Id*.
[109] *Id*.
[110] *Id*.
[111] *See, e.g*., Bebbington et al., *supra* note 2, at 312.
[112] *Water Rights, supra* note 18, at 323.
[113] *See generally* Bakker, *supra* note 7.
[114] Amnesty International, Annual Report: Ecuador 2011 (2011), http://www.amnestyusa.org/research/reports/annual-report-ecuador-2011.
[115] *See generally* Bakker, *supra* note 7.
[116] *Id*.
[117] *See, e.g*., Amnesty International, *supra* note 114.
[118] Informe Trimestral sobre la Asamblea Nacional Constituyente de la República del Ecuador [quarterly report on the National Constituent Assembly Republic of Ecuador], Mar. 2008, at 28.
[119] *Id*.
[120] *Id*.at 23-4.
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[123] Susan Reider, Challenging the Standard Narrative: Myth-making and Accountability in Ecuadorian Environmental and Indigenous Politics 13-14 (2010).
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[125] *Id*.
[126] *Id*.
[127] *Id*.
[128] Apland, *supra* note 129.
[129] *See* Ortiz, *supra* note 129.
[130] *See generally* Pena, *supra* note 6 (discussing general water reform efforts in Mexico).
[131] *Id*.
[132] *See* CIP Americas, *Inter-American Development Bank Megaprojects: Displacement and Forced Migration* (May 19, 2010), http://www.cipamericas.org/archives/2421.
[133] Saavedra, *supra* note 124.
[134] U.N.E.S.C.O Water: A Shared Responsibility 12 (2006).
[135] Bebbington et al., *supra* note 2, at 318.
[136] *Id*.
[137] *Id*. (Noting that indigenous mobilization "is very far from being a sufficient vehicle for changing both the rules of the game and the ways in which this game is played such that indigenous and citizen rights of access to water, resources and self-governance are guaranteed").
[138] *Id*.
[139] *Id*.
[140] *Id*. (Explaining that that "constitutional change, no matter how apparently progressive, will do little to protect water rights while cultures of power continue to be inflected with authoritarianism").
[141] *Id*.
[142] *Id*.
[143] David Howard, Mo Hume, & Ulrich Oslender, *Violence, Fear, and Development in Latin America: A Critical Overview,* Development in Practice, November 2007, at 714 (stating that the underdevelopment in Latin America can be explained by the exploitation of satellite areas for the economic development of the core. As a result, satellite areas remain undeveloped because they do not have access to their own resources).

[144] *Id*. at 715 ("The escalating depletion of …land, air, water, the corporatization and privatization of hitherto public assets, the reversion of common property rights won through years of hard class struggle to the private domain indicate a new wave of enclosing the commons").
[145] Castro, *supra* note 5, at 75.
[146] *Id*.
[147] Boelens & Zwarteven, *supra* note 12, at 735, 741.
[148] Bebbington, et al., *supra* note 2, at 316-17; *Indigenous Water Rights, supra* note 23, at 271.
[149] *Indigenous Water Rights, supra* note 23, at 328.
[150] *Id*. at 271.
[151] *Id*. (Explaining that "[l]ocal territories are invaded and existing water rights often neglected").
[152] *Id*.
[153] *Id*.
[154] Boelens & Zwarteven, *supra* note 12, at 735-58.
[155] *Id*.
[156] *Id*. at 744. (Revealing that "water reforms in the Andes threaten to destroy existing local and indigenous water rights systems").
[157] *Water Rights, supra* note 23, at 328-29.
[158] Dik Roth, et al., Liquid Relations: Contested Water Rights and Legal Complexity 1 (2005).

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[19] *See The Lubrecht Conversations*, Chronicle of Community, Autumn 1998, at 9.
[20] USDA Forest Serv., The Process Predicament: How Statutory, Regulatory, and Administrative Factors Affect National Forest Management (2002), http://www.fs.fed.us/projects/documents/Process-Predicament.pdf.
[21] USDA Forest Serv., *Id*.
[22] *See* Snow, *supra* note 3, at 2 (describing "collaborative conservation" as an emerging movement that "reaches across the great divide connecting preservation advocates and developers, commodity producers and conservation biologists, local residents, and national interest groups to find working solutions to intractable problems that will surely languish unresolved for decades in the existing policy system").
[23] *E.g.,* Snow, *supra* note 3, at 4.
[24] *See* Snow, *supra* note 3, at 2; *see also* Williams & Ellefson, *supra* note 7, at 1 (discussing the various stakeholders that may be involved in resource partnerships).
[25] *See From Troubled Waters: The Emergence of Collaborative Conservation, in* Across the Great Divide 13, 13–14 (Philip Brick et al. eds., 2001) (introducing several essays that addresses the emergence of collaborative conservation groups).
[26] Philip Brick & Edward P. Weber, *Will Rain Follow the Plow? Unearthing a New Environmental Movement, in* Across the Great Divide 15, 15 ("Collaboratives are a response to dysfunctional environmental strategies and policy processes, but are also symbiotically dependent on them.").
[27] *See* Andrus & Freemuth, *supra* note 17, at 11 (concluding that collaborative processes "matter[] most" in the West).
[28] *See* Snow, *supra* note 3, at 6–7; Michael McCloskey, *The Skeptic: Collaboration Has Its Limits*, High Country News (May 13, 1996), http://www.hcn.org/issues/59/1839.
[29] *See infra* notes 49–68 and accompanying text (describing the Blackfoot Challenge as an illustration of agency involvement in the collaborative movement).
[30] *See* Snow, *supra* note 3, at 6–7 ("Collaborative groups are usually ad hoc and ex parte. They often lack corporate status and are informal in structure.")
[31] *See generally* Ed Marston, *The Quincy Library Group: A Divisive Attempt at Peace, in* Across the Great Divide 79 (Philip Brick et al. eds., 2001) (providing a case study of the Quincy Library Group Partnership).
[32] *Herger-Feinstein Quincy Library Group Forest Recovery Act Record of Decision: Final Environmental Impact Statement*, http://www.fs.fed.us/r5/hfqlg/archives/record_of_decision/ (last visited Nov. 4, 2011).
[33] *Herger-Feinstein Quincy Library Group Forest Recovery Act Record of Decision: Final Environmental Impact Statement, Id.*
[34] The National Forest Management Act of 1976, 16 U.S.C. §§ 1600–1614 (2006).
[35] Ecosystem Research Group, Draft Partnership Strategy for the Beaverhead–Deerlodge National Forest (2006), http://www.mtmultipleuse.org/wilderness/B-DpartnershipStrategy.pdf.
[36] Ted Fellman, *Collaboration and the Beaverhead-Deerlodge Partnership: The Good, the Bad, and the Ugly*, 30 Pub. Land & Resources L. Rev. 79, 93 (2009).
[37] *See supra* notes 4–5 and accompanying text.
[38] Fellman, *supra* note 36, at 95.
[39] Phil Taylor, *Wilderness Bills Proliferate as Promoters Hope to Break 2-Year Drought*, N.Y. Times (May 3, 2011), http://www.nytimes.com/gwire/2011/05/03/03greenwire-wilderness-bills-proliferate-as-promoters-hope-16290.html?pagewanted=all.
[40] *Public Lands and Forests Legislation: Hearing on S.1470, S. 1719, S.1787, H.R. 762, and H.R. 934 Before the Subcomm. on Public Lands and Forests of S. Comm. on Energy & Natural Resources*, 111th Cong. 45–46 (2009) (statement of Sherman Anderson, President and Owner, Sun Mountain Lumber, Inc.).
[41] Ray Ring, *Taking Control of the Machine*, High Country News (July 20, 2009), http://www.hcn.org/issues/41.12/taking-control-of-the-machine.
[42] Ring, *supra* note 41.
[43] Ring, *supra* note 41; *see also* Ecosystem Research Group, *supra* note 35, at 4.
[44] *E.g*., Ring, *supra* note 41; Ecosystem Research Group, *supra* note 35.
[45] Ring, *supra* note 41; Ecosystem Research Group, *supra* note 35.
[46] *E.g*., Ring, *supra* note 41; Ecosystem Research Group, *supra* note 35.
[47] Ecosystem Research Group, *supra* note 35, at 23–27.
[48] Forest Jobs and Recreation Act of 2011, S. 268, 112th Cong. (2011); *see also* Ring, *supra* note 41.
[49] *Who We Are_History*, Blackfoot Challenge, http://blackfootchallenge.org/Articles/?p=185 (last visited Nov. 4, 2011); *see also Blackfoot Community Conservation Area*, Blackfoot Challenge (Feb. 2010), http://blackfootchallenge.org/Articles/wp-content/uploads/2010/06/Blackfoot-Community-Conservation-Area_2010.pdf (mapping out the entire Blackfoot Community Conservation Area (BCCA)).
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[51] Sonja Lee, *Blackfoot Challenge Rises to the Task*, Great Falls Trib. (Aug. 21, 2005), http://blackfootchallenge.org/Articles/?p=116.
[52] Rob Chaney, *Montanans See Their Ideas in Obama Outdoors Initiative*, MISSOULIAN, (Feb. 17, 2011, 8:45 PM), http://missoulian.com/news/state-and-regional/article_71277f94-3b0e-11e0-be21-001cc4c03286.html ("'I can't stress enough how that impresses me, that Washington is finally starting to get it,' said Iverson, a Potomac rancher and logger who helps lead the Blackfoot Challenge.").
[53] Telephone interview with Denny Iverson, Treasurer, Blackfoot Challenge Board, (Feb. 24, 2011).
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[56] *Id*.
[57] *Id*.
[58] *Id*.
[59] *Id*.
[60] *Id*.
[61] *Id*.
[62] *Id*.
[63] *Id*.
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[69] *See supra* note Wetering, *supra* note 15 and accompanying text.
[70] *See About VDCP*, VallesCaldera, http://www.vallescaldera.gov/about/ (last visited Nov. 4, 2011).
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[74] 16 U.S.C. § 6501(1) (2006).
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[76] National Forest Management Act, 16 U.S.C. § 1600(6) (2006).
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[81] Nat'l Research Council, *supra* note 4, at 37–38.
[82] *See generally* Martin Nie & Michael Fiebig, *Managing the National Forests through Place-Based Legislation*, 37 Ecology L.Q. 1 (2010) (analyzing forest-specific, place-based legislation from multiple standpoints).
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[85] *See supra* notes 22–26 and accompanying text (describing how the collaboration movement is emerging largely in response to the failures of the traditional governing framework).
[86] Charles Darwin, On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life (1859), *available at* http://darwin-online.org.uk/content/frameset?viewtype=side&itemID=F401&pageseq=2.
[87] *See* Snow, *supra* note 3, at 6–7 (discussing the defining characteristics of collaboration); *see also Democracy's Organic Dimension*, Kettering Found., http://www.kettering.org/ketterings_research/Democracys_Organic_Dimension (last visited Nov. 29, 2011) (noting that the "organic foundation of ad hoc associations and civic organizations" coexists with procedural democracy).
[88] *Supra* notes 49–57 and accompanying text.
[89] *Supra* note 51 and accompanying text.
[90] *Supra* notes 49–57 and accompanying text.
[91] Nie & Fiebig, *supra* note 82, at 18; *see also* Snow, *supra* note 3, at 4 ("[E]nvironmental conflicts in the West tend to breed long-standing hostilities and help to fracture communities . . . .").
[92] *See generally* Nie & Fiebig, *supra* note 82 (questioning forest-specific, place-based legislation's "governance, conflict resolution, precedent, wilderness designation, and funding" processes).
[93] Meg Wheatley & Deborah Frieze, *Using Emergence to Take Social Innovations to Scale*, Fieldnotes, Winter 2007, at 4.
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