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Protecting the environment during and after resource extraction

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Protecting the environment during and after resource extraction

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Abstract: Natural resources extraction inevitably imposes environmental injuries including diversion of scarce water away from pressing local needs, disruption of fragile ecosystems, and longer-range and often irreparable harm. These fall most forcefully on the local populations at or near the extraction sites but also beyond. Effective regulation is critical to balance immediate needs with longer-term considerations. Unfortunately, much extraction takes place in countries with weak institutions and poor success rates in addressing any of their environmental challenges and often rampant corruption undercutting fair application of rules. Improving practices requires a long and sustained commitment for everyone involved—the countries and industry.

Keywords: extractive industries, environmental enforcement, natural resource contracts, Equator Principles, corporate social responsibility, environmental impact assessments, voluntary environmental standards

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1 Introduction: resource extraction has high potential for immediate and long-term environmental damage

Even responsible extraction of natural resources imposes environmental costs. By its very nature, digging minerals, metals, and hydrocarbons from the ground disrupts the landscape in a variety of ways. Ground is broken and earth is moved. Extraction brings with it the construction of roads to bring in equipment and bring products to market, power transmission corridors in order to power the operations, facilities to house mine workers and often their families and all the attendant services that must be provided, and waste disposal both from the mining and from other human activities, among a stream of impacts. The activity of building roads and then the use of those roads and equipment introduces fuels and exhaust fumes.

The mining and extraction operations themselves often use hazardous chemicals including cyanide, sulfuric acid, and solvents to separate ore from rocks. In addition, beyond chemicals which are considered appropriate and for which there are technologies to capture and clean or separate, many mining operations continue to use illegal chemicals. One example is mercury. In countries where regulation is strong, mercury is banned from gold mining: where it is naturally present, requirements are enforced to prevent its release into the environment. But it continues to be used in various parts of the developing world and in so-called artisanal mining. Mercury that is not contained does not break down in the environment and continues to cycle between water, land, and the atmosphere; it can travel large distances from the original application or breach, and builds up in humans and animals and in the food chain.

Water is often an essential component of mining, and mining activities generally consume and contaminate large amounts of water. The water might be discharged or stored in large tailings ponds that can reach the size of small lakes. Depending on the location of these ponds and their construction, their safety as holding areas can be jeopardized by storms, earthquakes, or by simple mismanagement. Seepage can contaminate groundwater or other drinking water sources. In places where water is scarce or supply is unpredictable (as is increasingly the case with climate change impacts), mining competes with other uses. Given the wealth and political power of mining companies, the competition is often unequal, with local communities losing out to wealthy companies. Corruption can also be a factor undermining legal restraints on mining companies in the competition for water.

Today, the search for valuable resources has taken mining and extraction into increasingly remote areas, such as the Amazon rainforest (see Kimerling 2000). When prices are high, often in response to the demands of the increasing number of people on the globe with the resources and the interest in purchasing upscale goods and services and in engaging in large-scale building, the geographic scope of exploration has widened dramatically, in turn shifting resource extraction even more sharply from developed to undeveloped countries. And because the sought-after materials are often found in remote and previously difficult-to-access geographic regions or places that were largely 'off limits to extraction—due to a combination of Cold War politics, financial risks, and technical constraints' (see Jordan and Chamberlain 2001), the development necessary to access and extract resources takes place in increasingly out-of-the-way places. Development can crowd out other means of livelihood, however basic they were. In competition such as this, as Nobel Prize Economist Joseph Stiglitz points out, the trade-offs for local populations are not promising; locals may lose out, as resource extraction often entails little job creation and benefits may remain limited and localized (Stiglitz 2012).

The areas marked for extraction can include fragile ecosystems which were often previously off limits to exploitation, either because of rules protecting them or due to limited accessibility.¹ Possibly because they are remote and because of the lack of clear popular understanding of the ecological connectivity between these faraway places and the essentials of human life, as is the case with down-mountain communities whose clean water source is highly dependent on conditions many miles away, the true nature of the trade-offs between development and environmental may not be properly understood.

The general point here is that mining, including hydro carbon operations can and likely will contaminate land, water, and air. They can cause health problems for workers and people living near mines. They may, but do not necessarily, create off-setting local wealth. Further, when mining operations are opened up in natural areas, there are consequences for the local biodiversity, as well as impacts on organisms and species in the local ecology, the way water is captured and stored (or not) by trees and vegetation, and on other natural processes that support both local and far-distant human activity. People and their livelihoods are displaced, and traditions and cultures disrupted. In some instances, long-term interests are sacrificed for short-term returns (Cronin 2009).

These factors illustrate the need for effective regulation to ensure that the benefits obtained by a country by exploiting its natural resources are not undercut and eroded, if not entirely destroyed, by an exploitation that leaves behind irreparable damage. Regulation is here defined as ‘a process of setting and then assuring the implementation of requirements that protect, to the extent necessary to meet local needs and expectations, the landscape and the people working in the mines and living in the general vicinity or dependent on natural processes of the exploited area’. Regulation provides a broader perspective so that immediate needs—in this case, extraction and the seductive commercial and other economic returns from extraction—are balanced by longer-term considerations, namely preservation to the extent possible of natural and other values. Regulation can, of course, address not only the conditions under which a country’s natural resources are extracted and exploited but also can set rules for what happens when these resources are depleted and the companies exploiting them leave.

2 Countries with weak institutions and poor success rates in addressing their other environmental challenges face significant challenges in regulating extraction

Reconciling extraction and protection of the environment is an ongoing challenge in the highly developed world, even in countries with well-established regulatory systems and longstanding adherence to the rule of law. Every day brings evidence of the complexity of holding to account companies that pollute (see McQuaid 2009). Underlying this is the difficulty of even understanding the consequences of industrial operations in a complex ecosystem. Some impacts are obvious and visual; we have all seen stark photos of, for example, table top removal to extract coal. Others are more difficult to track and comprehend. When pollution enters an ecosystem, it is often difficult to trace its source and attribute responsibility. This is true even in countries with vast resources, empowered citizens with the tools and legal recourse to play a watch-dog role, and well-functioning systems of law (see Rich 2016).

¹ For a discussion of the importance of biodiversity in such remote areas, see Mittermeier and Konstant (2001)—(‘we are fast coming to realize that the condition and survival of the human species will ultimately depend on our ability to maintain existing levels of biodiversity and essential ecological processes’).

The challenge is exponentially greater in countries of the developing world with fragile institutions where experience in compliance and enforcement is weak, where environmental issues are not considered a priority, and where there are correspondingly poor success rates in addressing other environmental and societal challenges. There is a vast literature on the regulatory deficiencies in the developing world and many of the disasters that have ensued (see, for example, Puvimanasinghe (2009); Kimerling 1991). The challenge of regulatory deficiency may be further compounded by the way environmental matters are managed in concession and extraction agreements.

Often in the developing-world countries that are host to extraction, the necessary **formal** structures, such as environmental laws and agencies, exist. But, for a variety of reasons ranging from seemingly simple issues of capacity to corruption and malicious intent, these laws and agencies are frequently either ignored, inconsistently invoked, or in the worst cases, used as a weapon for purposes totally unrelated to rectifying environmental harm. Thus, we have seen instances in Russia where environmental laws were enforced against businesses and their leaders to discipline or punish insufficient loyalty, retrieve financial gains, or tie up assets, rather than to stop pollution.²

There are any number of reasons for weak or inconsistent enforcement. Countries may simply lack systems of energetic environmental enforcement. This can be due to insufficient resources put to the task and/or because enforcement personnel lack experience or training. Some countries have highly imperfect enforcement mechanisms and tools, even if they have the will to act. In cases where an industry is owned in part or entirely by the state, the inherent conflict of one arm of the state prosecuting another discourages enforcement against polluting facilities (see Bell 1994: footnotes 33 and 34).

One example is Poland as it emerged from the Soviet bloc. Its main tools for enforcing violations, inherited from the Soviet period, were fines, criminal penalties, and the threat of facility shut-downs. These look fine, in theory. But, in fact, shut-downs are a ‘nuclear option’ in the arsenal of environmental law remedies (intermediate remedies such as diplomacy and less drastic confrontations are more effective) though rarely imposed. When used, shut-downs were often merely symbolic and imposed for only a day or two rather than correcting the circumstances that were causing the pollution. Fines were either weak or ignored. More perniciously, where the enterprise was state owned, fines were doled out as a line item in the annual budgets the industries received from the state; a fine for a state enterprise would simply be offset by an increased subsidy through the budget or by borrowing from state banks (Bell 1992).

In other words, environmental violations were merely a regularized cost of doing business, not a means to inflict constructive pain towards the goal of improved emissions. During the 1980s, the Polish Ministries of Metallurgy and Heavy Industry, Chemical and Light Industries, Construction and Public Works, and Agriculture were together assessed 72 per cent of the fines for violations of pollution standards, but the ratio of total fines actually paid to total fines imposed was only 30 per cent. The ratio per ministry varied widely. The Ministry of Mining and Power, which accounted

² One example was reported by *The Guardian*, in which Russian authorities threatened BP over alleged environmental violations on a Siberian field ‘in what is seen as a wider attempt to seize back assets handed over to foreign companies when energy prices were low ... [part of] using legal pretexts to cover what was essentially an expropriation of private resources in the energy sector (Macalister and Parfitt (2006). See also Partlett (2012).

for 30 per cent of fines imposed, paid only 3 per cent of the total it was assessed in 1987 (Bell 1992 and citations therein).

What was missing from the Polish arsenal, as was the case in countries across the former Soviet bloc and in many other jurisdictions including in Asia, were tools that could nudge, push, and incentivize facilities to come into compliance with requirements to make the standards embodied in the laws and regulations meaningful through action.

The depth of commitment to enforcement is another barrier. Requirements that appear sensible on the books often languish without implementation when only officials can bring enforcement cases. Where citizen enforcement provisions, or meaningful opportunities for citizens to come forward with evidence, are lacking, there is generally no one to step into officials' shoes to ensure that environmental requirements are met. Numerous countries have variations on citizen involvement in environmental enforcement. In the United States, citizens can initiate enforcement actions upon notice to the Environmental Protection Agency. Elsewhere, ecological associations, legislative bodies at different levels of government, trade unions, workers and/or local self-governments can initiate enforcement actions (see May 2003). Provisions like these are particularly useful when violations are taking place in remote locations, where government officials may be few and far between and affected citizens may be in the best position to observe and document harmful environmental impacts.

Finally, there is the issue of corruption. The resource curse, which inspired this paper, is often expressed as the concern that exploitation of natural resources in countries with weak governance and fragile institutions often benefits a small number of powerful people who siphon the proceeds for their own needs (see Lawson-Remer and Greenstein 2012). Revenues that should be allocated to domestic needs such as infrastructure, healthcare, and education are diverted to, for example, Swiss bank accounts and London real estate. Corrupt politicians and other powerful beneficiaries of such revenues are equally uninterested in environmentally based impediments to extraction as they are in other restraints on their behaviour, even if those requirements might offer other benefits to the country involved. Consequently, environmental requirements and their enforcement are high on the list of restraints that are jettisoned in many countries in favour of quick profits. In power struggles over such issues, environment ministries are typically among the weakest bodies in government; when powerful people, whether in or out of government, have massive influence, environmental regulators and the people who depend on them hardly have a chance.

The bottom line is that enforcement is essential to making laws and requirements work, but it should not be assumed that the existence of enforcement agencies or paper commitments are a sufficient guarantee that pollution control and clean-up requirements will be honoured.

3 Commonly used approaches to work around domestic legal, institutional, and experiential deficiencies

There is a debate in the literature about how to manage these systemic deficiencies in environmental enforcement. Clearly they parallel domestic institutional and legal weaknesses that result in inadequate financial and other oversight of extraction and its consequences. To understand the issues involved in this debate, this section begins by considering the regimes under which mineral and other rights are granted and administered, and specifically the distinction between 'licensing' vs. 'contractual' approaches for building in protective requirements.

'Licensing' is a shorthand for a process whereby agreements to extract rely on generally applicable laws to define rights and obligations. The contract between the extraction company and the government is controlled by established law to the extent possible. The virtue of this, as stated by the Columbia Center on Sustainable Investment (CCSI 2015), is that the process of considering and writing laws, hopefully including public participation in the legislative process in democratic states 'provides a venue for incorporating the public's concern for the sector and decreases the likelihood of political volatility. Because the laws apply equally, the system is easier to administer and limits the opportunities for corruption in the process by allowing for stronger checks and balances [*internal citation omitted*]' (CCSI 2015: 7).

Licensing assumes a level of domestic maturity and institutional strength. It is preferable from a policy point of view because rather than being ad hoc and specifically negotiated, requirements should be relatively consistent across the board and also transparent. In principle, one need only read the law (rather than be privy to specific negotiations) to understand how the particular requirements on any one extraction operation were derived (and, of course, their content). Further, under a licensing regime, requirements are derived from policy judgments that take into account wider considerations than the needs of a specific project and are hopefully formulated through democratic processes.

The difficulty, as we have seen in the previous section, is that even some countries with well-established laws have difficulty in their implementation, and acutely so with respect to environmental requirements. Accordingly, although the relationship between the government and the extraction company might seem to be securely rooted in established legal/policy, in fact the parties' obligations might be formalities rather than tenets that guide practice (Bell 1994). The commonly used distinction in the literature is to compare 'laws on the books' with 'laws in practice'. Weak institutions, corruption, and lack of political will, as outlined above, can undermine any kind of agreement on rights and obligations, including those that rely on existing law.

Another weakness is the contract negotiation process itself. Many developing countries cannot match the legal and commercial sophistication of the company across the negotiating table, or are fearful of pushing for certain requirements because they believe they lack the bargaining power. They may not get the best deal, either because government negotiators fear losing the development opportunity or because their experience in negotiating such contracts is not as deep as their opponents. More damagingly, as in Poland before a hard-fought memorandum of understanding introduced environmental expertise into privatization teams, the country's environmental experts are frequently excluded from the negotiating table and sometimes are not even consulted. If they were involved, engagement in negotiations would help build their expertise over time and make them better negotiators and regulators.

One means of substituting for weak institutions and deficient or even non-existent legal structures is to negotiate contracts that specifically spell out the obligations of the company and, of course, of the government in the context of a specific project (Affolder 2013). In this model, 'mineral licenses and the accompanying rights and obligations are negotiated for specific projects with each individual company' (CCSI 2015: 7). These types of arrangements are clearly more flexible towards addressing the unique properties of various mining projects, but that flexibility is also their weakness. They represent decisions made within the context of the specific proposed project. For that reason, it is harder to integrate more general or long-run environmental (or other) aspirations, which normally would incorporate the wider implications of any specific development or injury to the environment and consider a much longer time frame than the life of the contract or even post-extraction remediation. After all, environmental laws are, among other things, societal decisions balancing development against preservation.

Related to this from a policy point of view is that decisions made through contracts, involving matters that inevitably impact the long-term health and resilience of a country, are made case by case, presumably in a less coherent fashion than would happen in the development of overarching policy in the form of generally applicable laws. Additionally, when requirements are handcrafted to a specific site and/or a specific entity, the burdens of monitoring and implementation imposed on a fragile bureaucracy are even greater than if it had been responsible for monitoring and enforcing across-the-board laws. The most often overstretched and under-resourced environmental authority must police the very specific terms agreed to, which can differ project by project.

Accepting nonetheless that contracts will continue to be an important part of setting rights and responsibilities in many countries, several organizations have refined the contracting approach by developing guides that identify issues and standardize solutions. These include the Environmental Law Alliance Worldwide's (ELAW's) *Natural Resource Contracts: A Practical Guide* (ELAW 2013) and the International Institute for Environment and Development's (IIED) *Investment Contracts and Sustainable Development: How to Make Contracts for Fairer and More Sustainable Natural Resource Investments* (IIED 2010). Each offers practical tips for drafting natural resource contracts that offer the maximum degree of environmental protection and suggest ways to structure investment contracts that maximize the investment's contribution to sustainable development. ELAW's guide includes issues like land rights, environmental impact assessments (EIAs), and environmental liability and dispute resolution. Each subsection offers real-world examples of contractual provisions illustrating each point. IIED's guide, also aimed at host governments and civil society, recommends that contract negotiators prioritize environmental and social impact assessments and management systems, safeguards in land takings, social investment requirements, and legal remedies for groups adversely affected by investment projects, in their negotiations with project developers. It focuses on extractive industries, drawing upon examples of projects in Ghana and Central Asia to illustrate its suggestions.

Analysts who have looked at the contractual approach have found it difficult to draw deeper conclusions on the adequacy of this approach for protecting environmental values. On the one hand, Kimerling (2001) argued that the privatization of environmental regulation of oil extraction in the Ecuadorian Amazon through the use of contractual environmental provisions and an environmental management plan (EMP) in lieu of robust state regulation, represented an abdication of state responsibility and a threat to democratic accountability. She expressed strong concerns about the lack of transparency in the Ecuadorian government's dealings with the US-based oil company, Occidental Petroleum, and called for a 'credible, independent and transparent audit ... to evaluate the company's environmental standards and performance' (Kimerling 2001: 394). Her concerns about lack of consultation with affected communities, especially indigenous peoples, predate the use of the International Finance Corporation (IFC) Performance Standards, Equator Principles, and other private-sector initiatives that have evolved in recent years and are discussed in the extraction literature. Affolder (2013) is ultimately agnostic as to the usefulness of the contractual approach, arguing that it is a technique of global environmental governance that represents a particular policy choice (one that tends to favour the growth of extractive industries). She notes the 'contractual webs' created through the development of large extractive industry projects (e.g. loan agreements, insurance agreements) as an example of how regulation through private agreements can either strengthen (as in community benefit agreements or the IFC Performance Standards) or undermine environmental protection at the host country level (Affolder 2013).

In part because of some of the hazards of one-off negotiations and to streamline and upgrade the negotiation process, negotiations often now rely on model agreements and other industry codes of conduct including the Equator Principles and the IFC Performance Standards. While these have

an aspect of being industry or lender-led initiatives, it is important to remember that their development responded to a growing public concern about the impacts of extraction. Any number of activist and advocacy groups began following and publicizing the need for greater attention to stewardship concerns domestically within the US and internationally. Prominent examples include the Rainforest Action Network in the 1980s (focused on clear-cut logging, from 1996 through 2003); anti-extraction advocacy US-based Project Underground which published *Drillbits and Tailings* to alert readers to problematic extraction operations; and other such advocates.³ Eventually non-governmental organizations (NGOs) focused on the role of the financial services sector as a point of control over the activity of extraction companies. This, and incidents like the Bhopal accident discussed later, helped accelerate a shift in the way ‘financial decision-makers perceive[d] that environmental concerns could affect their company’s profit margin’ (Jordan and Chamberlain 2001).

This NGO engagement with the financial services sector in its role as lender to large-scale extractive projects with potentially harmful environmental impacts, led to the creation of several private-sector initiatives that set forth (voluntary) codes of conduct to be followed in all projects funded by participating financial institutions. These principles supplement the purely contractual approach by fixing, through contractual obligations to a private or public sector lender, certain non-negotiable items and indicating to governments where negotiation is appropriate (see Langer 2013:).

The Equator Principles (Mongoven 2006) help participating financial institutions (currently over 70, including many major banks and other players in the field of project finance) to determine, assess, and manage environmental and social risk in projects. The objective is that they should not provide loans to ‘projects where the client will not, or is unable to, comply with’ the principles (Mongoven 2006).⁴ Although, in theory, the principles should allow project lenders to serve as a lever to improve environmental performance through the threat of reduced access to funds, in practice the results have been somewhat mixed (see Lance 2013; Sarro 2012). However, the Equator Principles have effectively given environmental and other NGOs a voice in major international lending decisions, a position that would have been unthinkable in previous decades (Mongoven 2006).

Similarly, the IFC Performance Standards, a primary inspiration for the Equator Principles, are intended to provide guidance to clients of the IFC ‘on how to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to project-level activities’ (IFC 2012).

These are powerful models, in part because of the status of the IFC, a member of the World Bank Group, as the self-described ‘largest global development institution focused exclusively on the private sector in developing countries’, willing to ‘engage in difficult environments’ and providing ‘leadership in crowding-in private finance’ (Freestone 2013).⁵ Adhering to these principles is a

³ See Robertson GeoConsultants Inc (n.d.) for a list of advocacy and activist groups.

⁴ Mongoven (2006) provides a useful discussion of the Equator principles and of the road ahead—especially implementation. See also Equator Principles (n.d.).

⁵ *The World Bank and Sustainable Development: Legal Essays* edited by former World Bank general counsel David Freestone (Freestone 2013) examines the legal aspects of World Bank sustainable development policies, such as its Safeguards Policy, Carbon Fund, and Global Environmental Facility (GEF). In this volume, Freestone and Roberto Danino summarize the World Bank’s Extractives Industries Review and present the Bank’s strategy towards the funding of extractive industries going forward. See also, Danino and Freestone (2004).

requirement of obtaining IFC support and is intended to set standards that the IFC client must meet ‘throughout the life of an [IFC] investment’ (IFC 2012). They have widely been copied by—and were intentionally put forward as a model for—other financial institutions (Langer 2013).

Another slice at this problem is found in the corporate social responsibility (CSR) approach. This is a self-regulatory approach predicated in the perception that it is better in the long term for business to be proactive in support of environmental and other social controls—and that there can be costs from inattention, and/or the perception of inattention. Companies believe they can increase long-term profits, reduce business and legal risk, and improve shareholder trust by cultivating positive public relations and a reputation for high ethical standards. This belief came out of hard experience. Episodes like the Bhopal incident heightened corporate sensitivity about the reputational impacts of industrial accidents and loss of life, even in faraway places. In 1984 in Bhopal, a remote part of India, a major industrial accident with lasting consequences for local health and safety led to close scrutiny of Union Carbide’s practices in the developing world (Verma 2014).⁶ Bhopal was heavily covered by the international press and, whether or not justified, came to represent corporate irresponsibility with continued argument to this day about specific responsibility (see Rogge 2001).

Through the frame of CSR, business commits itself to legal compliance, ethical standards, and national or international norms. Some companies take implementation beyond compliance and engage in ‘actions that appear to further some social good, beyond the interests of the firm and that which is required by law’ (Wikipedia n.d.). For example, Nike has committed to monitoring factories in its global supply chain that produce its products under contract and that have historically subjected workers to substandard working conditions, although it is not obligated to do so by applicable law (Connor 2010).

In a similar vein, the International Council on Mining and Metals (ICMM), a voluntary organization of mining and metals companies, established another business-led self-regulatory initiative in 2003. The 23 member companies joined with 34 national and regional mining associations and global commodity associations to establish ten industry-focused principles of sustainable development (O’Callaghan 2011). Member companies also seek to comply and reinforce guidelines established by other organizations including the OECD and the World Bank.

Finally, environmental requirements are often incorporated into the contractual process through the conduct of some form of an environmental (generally joined with social) impact assessment. Environmental impact assessments first came into use when the US Congress passed the National Environmental Policy Act (NEPA) in 1969. NEPA requires that all proposed major actions of the US federal government be accompanied by an examination of its environmental impacts including direct, indirect, and cumulative impacts of the alternatives being considered, detailed examination of any adverse environmental effects that cannot be avoided, and the means to mitigate adverse environmental impacts. Many US states followed suit with similar requirements. The US has no requirement that a project be rejected if the EIA shows adverse environmental impacts; the EIA is purely to make clear to decision-makers and the public the impacts and less environmentally costly alternatives to the proposed action (Hershowitz 2008). However, merely requiring the analysis has often averted the worst projects and facilitated improvements of others.

⁶ The exact nature of Union Carbide’s ownership and responsibility is highly contentious. The Bhopal plant was only partially owned by Union Carbide. The formal owner was Union Carbide India Limited (UCIL), an Indian company in which UCC held just over half the stock. Other stockholders included Indian financial institutions and thousands of private investors in India.

EIA laws and policies were adopted by countries across the globe in response to the global environmental movements of the 1960s and 1970s, particularly following the 1972 United Nations Conference on the Human Environment in Stockholm and further accelerated through (non-binding) international declarations such as the 1992 Rio Declaration on Environment and Development. The latter calls upon states to require EIAs for activities likely to have a significant adverse impact on the environment (Fromherz 2013). Many of these national laws have come to serve a somewhat different purpose than the US model, in some cases having a licensing or even a regulatory component (see Crippa 2008; Gray 2000).

In their application to international extraction transactions, EIA analyses ideally are intended for the ‘project design phase’. The analysis can identify problems, consider how they might be mitigated, and incorporate this planning into the project’s contractual structure (Kohn 2002). The difference from the US NEPA model is that these EIAs often are used to set terms going forward, particularly to satisfy contractual obligations to project lenders. This is quite a different role than an assessment of alternatives for a federal decision-maker (who might be functioning in a licensing or approval posture, for example) or to inform public review of potential projects (Lawrence and Thomas 2004).

As noted in the German Federal Ministry for Economic Cooperation and Development’s review, EIAs are used in both licensing and contract regimes. In the former, this is mostly as a result of domestic legislation; consequently, the assessment is ‘evaluated as part of the approval process for granting the license’. There is also a mixed use of EIAs in which such requirements can be included in mining agreements to supplement gaps in the law, in which case they can ‘provide an avenue for remedy in the case of a violation by the company that is not covered under the ESIA [Environmental and Social Impact Assessment] provisions of the law’ (*internal citation omitted*, CCSI 2015: 36–37).

In the contract context, the use of this tool may be more problematic in part because it comes to substitute for missing legal elements. Indeed, the very design and requirements of EIAs is sometimes another issue to be negotiated in the absence of uniform requirements. Timing of the conduct of the review can also be problematic, especially if ‘only conducted after an agreement is concluded, often making them perfunctory exercises’ (CCSI 2015: 36).

3.1 How a combination of approaches were put to work in a Liberian mining contract

The 2010 Mineral Development Agreement concluded between the government of Liberia on one side and Putu Iron Ore Mining Inc and Mano River Iron Ore Ltd on the other (Resource Contracts n.d.) provides an example of the combined use of many of the elements discussed above to manage the environmental aspects of the agreement. That agreement states itself to be governed by applicable Liberian mining law, ‘applicable [other] law’, the World Bank/IFC Environmental Health and Safety Guidelines for Mining, the IFC Performance Standards on Environmental and Social Sustainability, the approved EMP and the agreement itself. The agreement also references ‘international standards’, namely, practices and methods practised by prudent professionals ‘employed by leading international firms in the international mining industry (for example, firms that are members of the [ICMM])’, but that the Liberian government may ‘by Law designate a particular International Standard as being generally applicable to all holders of Class A mining licenses or exploration licenses issued under the Mining Law’. The exploration area is designated in the Agreement (Schedule 1), so in one sense the EIA fills the purpose of examining possible impacts but does not (as far as can be determined from the Agreement) consider alternatives such as no exploration. This use of EIAs differs from US practice. In the US, the proponent of a project must consider a ‘no action’ option. No action examines the expected environmental impacts in the

future if existing conditions were left as is; the analysis forms an environmental baseline against which particular actions can be assessed.

Under the 2010 Agreement in Liberia, the mining company is obligated to prepare and provide a 'Feasibility Report' which shall comply with 'applicable Law and International Standards', and shall include an EIA and EMP 'complying with Section 5.5 and applicable Law, prepared by an internationally recognized independent environmental consultant not affiliated with the Company or any of its principle (sic) direct or indirect shareholders, as filed by the Company with and approved by the EPA [Environmental Protection Agency]' (Resource Contracts n.d.). The EIA must identify 'pre-existing environmental conditions and the potential adverse impact of the construction and operation of the Mining Plant and the Infrastructure proposed'. The EMP must contain plans for the mitigation of environmental harm, restoration or remediation, and a closure management plan and closure management budget. In the EMP, the company must explain how it will ensure that funds are available to finance environmental restoration and remediation. The company must hold public hearings on the EIA and EMP. Approval of the EIA and the EMP is based on an evaluation conducted by the Liberian EPA tested against requirements of the agreement, international standards, and applicable law.

The company is also required to deliver an annual environmental report, prepared by the company, assessing productive areas under licence plus areas outside of the production areas in which the company conducts operations. Every two years, the company must have prepared (by an accredited and minister-approved environmental consultant not a regular employee or affiliate of the company) and delivered, an environmental audit and assessment of the production areas under licence plus all areas outside of the production areas in which the company operates. This assessment, in addition to periodic inspections by the minister or the EPA would be the basis for determining 'whether Operations since the beginning of the relevant period the subject of the audit are being conducted in conformity with applicable environment Law and the other requirements of this Agreement and the Company's approved EMP' (Resource Contracts n.d.), including the issues of provision for restoration or remediation. At least every four years, the company is to update the EIA and EMP.

On the one hand, contracts of this kind can be seen as a valiant way to work around the legal and institutional inadequacies in Liberia following a brutal civil war that shut down schools, ripped up infrastructure, and left serious institutional shortfalls in its wake. In the context of a country that is struggling to re-establish laws that work and their supporting institutions, the contract draws from the best of what is available and tries to establish workable standards and strategies for their implementation. Under the circumstances, it is not clear what more could be done.

On the other hand, it is easy to be sceptical of the contract's potential for putting serious environmental restraints on the activities of mining companies. As noted, environmental enforcement is time and resource consuming in even the most developed countries. It takes sophisticated analysis in some cases even to understand how pollution moves within the environment and its consequences. In places like Liberia, a country which is representative in many ways of developing-world hosts to such projects, monitoring and enforcement bodies are small, highly under-resourced, and lack deep experience in effective negotiation and enforcement. Good enforcement is about details—if issues are contested or go to litigation, facts are critically important—and some of the provisions in these agreements are relatively vague and non-specific. Arguably, the most 'enforceable' provisions of the agreement are those portions of the EMP that include mitigation plans, provide for restoration or remediation, and establish a closure management plan and closure management budget, assuming these provisions contain an adequate level of specificity. Presumably, these provisions might allow an enforcement official to be able to compare intentions with outcomes and hold the company accountable for breaches of its

contractual obligations. But, as in all enforcement, the devil is in the details—fact finding, documentation, assessment, and the ability to prove the case are all difficult hurdles to overcome in action to hold companies to account.

3.2 How effective are voluntary standards for improving environmental performance?

Needless to say, there is considerable debate about the effectiveness of any of these approaches that build on lending practices and reputational considerations. Certainly, failure to commit to the Equator Principles and the IFC Performance Standards is meaningful in the sense of making certain kinds of important financing off limits unless companies incorporate the requirements into extraction contracts. However, the key issue in evaluating any of these approaches is whether the requirements imposed through these various means have been translated into meaningful change on the ground in the form of genuine environmental protections, after a project is financed and constructed. Meyerstein (2013), for example, concludes that the Equator Principles have been somewhat successful in compelling financial institutions to change their lending practices to reflect a more environmentally responsible view towards managing risk (in the project finance sphere). However, he is not able to answer satisfactorily whether this has been translated into meaningful change on the ground, since the research here focuses on institutional practices rather than ultimate environmental outcomes (Meyerstein 2013).

Corporate social responsibility and other reputational approaches depend on the accountability of members with respect to each other ('peer pressure') and on pressures from the close-watching public. Research reviewing these has reached mixed conclusions. Some, like Hilson (2012), are dubious about the impact on actual performance. They conclude that CSR's effectiveness in any location requires a 'foundation of robust regulations and enforcement in place for it to complement', rather than replace or undermine domestic law (Hilson 2012: 136). Oshienbo (2009) expresses concern that poor implementation has made the World Bank's environmental and social policies inadequate in ensuring sustainable development in the extractive industries.

Sethi and Emelianova (2006) are also unconvinced about voluntary standards, including those of the ICMM. Their concerns centre on the lack of standards 'against which individual company performance could be measured or evaluated for adequacy' as well as the lack of minimum standards 'in any area of mining industry's operations'. Their conclusion is fairly damning: 'in the absence of standardized measures of performance, uniformity in reporting, and transparency, in full disclosure, the notion of voluntary codes of conduct is rendered almost worthless since it lacks any assurance of credibility and accuracy' (Sethi and Emelianova 2006: 235).

The issue they are struggling with is whether CSR's objectives are lofty to the point of being unrealistic. They essentially ask whether CSR amounts to window dressing or even actively undermines the role of government regulators by substituting for their judgment or overriding their function. While Sethi and Emelianova (2006) are not focused principally on environmental requirements, the parallel concern would be 'greenwashing', a form of spin where seemingly environmentally friendly commitments are deceptively used to promote the perception over a more grim reality.

By contrast, supporters including Spense (2011) argue from an economic point of view that it is in corporations' and shareholders' best interests to act in an environmentally and socially responsible manner, and that CSR can solve an important supplemental role in the absence of strong host country environmental protection laws. Yakovleva and Vazquez-Brust (2012) conducted interviews with four stakeholder groups (government, civil society, international financial institutions, and mining industry representatives) concerning the suitability of CSR for addressing social and environmental issues in the Argentinian mine industry. They focused in

particular on the environmental aspects of CSR, positing that the most critical element of CSR in the mining context is ‘to do what is safe for the environment’ (Yakovleva and Vazquez-Brust 2012: 191). However, the authors’ institutional focus does not reveal much relevant data on how CSR policies are translated to meaningful change on the ground. Livermore (2014), agreeing with Dashwood (2012), concluded that ‘the ICMM’s authority will continue to influence the CSR decisions of mining companies and support them to be directed at developmental outcomes’ (Dashwood 2012). Livermore (2014), who relied heavily on the World Bank’s 2014 report, agrees that ‘[s]tandards only matter to the extent they are complied with’ but is convinced that ‘[t]he pressure for compliance with the ICMM’s standards is ... amplified by factors in members’ larger political and financial environment’ (Livermore 2014: 38). In other words, many of these analysts believe that companies acting in their own self-interest will do the right thing.

My own experience, including as an American environmental regulator and in considerable on-the-ground roles in transitional economies and the developing world, causes me to be a bit more cautious about the reliability of voluntary standards, however they are formulated. Reputation is important but companies are rarely monoliths with only one opinion or policy. They are complex organizations, often spread across the world, with numerous, sometimes conflicting perspectives. Leadership can care a great deal about public perceptions but still have reasonable differences about many of the important details concerning pollution, its generation, and dissemination. These can include differences about the impacts of pollution and what is dangerous; after all, similar disagreements can take place among scientists concerning what is a safe exposure level, for example. Agreements made at one level of the company (e.g. at HQ) might not be translated fully into action, especially when the actual activities must be carried out in remote places. There can be substantial differences between asset managers and sustainability teams, or management and on-the-ground personnel or, even more importantly, poor communication and/or oversight. Divisions of responsibilities can result in shaky on-the-ground commitments because lines of communication are blurred. Indeed, any number of institutional and human factors can confound legitimately good intentions and break the chain of responsibility that is assumed by the supporters of reputational approaches.⁷

For example, I observed efforts in privatization transactions in the former Soviet bloc in the period following 1991 to use purchase agreements to spell out environmental requirements in lieu of domestic laws (or in anticipation of possible future laws such as Superfund-like regimes).⁸ What we learned is that these requirements must be backed by a system that ensures that the purchaser does what it has promised to do and implements any agreements, however those obligations are spelled out.

Second, we know that even in a mature system of environmental regulation, the threat of enforcement is often necessary to assure compliance. Promises alone are not enough. Without enforcement, the credibility of the government will suffer, and the likelihood of environmental or health improvements will be reduced. Further, the passage of time and possible conveyance of

⁷ This broken chain of responsibility can also pose difficulties in holding corporate wrongdoers to account for environmental harms (see Sachs 2008).

⁸ Spurred by media coverage of industrial pollution at specific highly contaminated sites, such as ‘Love Canal’ in New York, the US Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly known as ‘Superfund’) to provide for clean-up of these sites. Signed into law in 1980, Superfund provides a dedicated trust fund for clean-up and a liability scheme that strongly incentivizes polluting industries to negotiate settlements with the US EPA, and avoids the need for costly and protracted litigation over responsibility for pollution which may have built up over decades, if not centuries (as is the case with some copper mines) (see Judy and Probst 2009).

project ownership or assignment of a company's rights may obscure obligations that were incurred at the time of the initial transactions.

When requirements are negotiated on a piecemeal basis in weak-governance countries, inexperienced regulators must negotiate with and impose requirements on foreign investors who have considerable negotiating and litigating experience dealing with the environmental agencies in the West. As I noted, writing about Poland's attempt to negotiate the environmental parts of privatization agreements, environmental regulation and enforcement agencies in the West had the luxury of a kind of parallel evolution of experience. Relationships between western regulators and the regulated community reflect many years of mutual interaction and increasing sophistication on both sides. In the US, the EPA, the regulated community, and public interest environmental organizations have grown up together from environmental infancy to the current level of sophistication applied to these issues. The relationship is less balanced elsewhere, particularly where the private venture that needs government approval and is already experienced in these kinds of transactions promises to bring funding to very poor countries.

Finally, principles that are shaped around specific agreements in specific contracts can miss addressing the wider significance and concerns beyond the limited site of the projected activity or its immediate neighbourhood, and may in fact undermine generally applicable regulations (see Affolder 2013). There is an important process in setting laws. In the best case, elected officials, responsive to their constituencies, try to think through how they envision their country and write rules consistent with that vision (see Caruso 2009). They see the bigger picture, or try to. Ideally, laws consider wider country-wide aspirations and set a balance between sometimes conflicting objectives. A country may strive for development and at the same time want to preserve domestic values that are deemed to have importance to the people of that country. It may have to balance agrarian vs. industrial objectives. A sophisticated regulator might understand that mining in a faraway mountain range has consequences for the quality of water consumed in cities. There is a reason for independent bodies that set and then enforce standards and obvious reasons why specific projects should fit into this overall vision, rather than the other way around.

Sethi and Emelianova (2006) address this point when they set out

necessary pre-conditions, which must be met if industry-based codes are to succeed in narrowing the performance-expectations gap between the industry and large segments of society ... [and also] to determine the potential weaknesses in an industry-based code of conduct and to take corrective action before putting it in practice. (Sethi and Emelianova 2006: 230).

Among other things, Sethi and Emelianova point out that the code must cover 'issues that are of concern to the community and not merely those preferred by the industry' (Sethi and Emelianova 2006: 230). There must be a governance structure that assures external input, not necessarily from industry's critics but 'from independent experts who have the respect and confidence of all parties involved' (Sethi and Emelianova 2006: 230). Importantly, they point out that:

Performance with code compliance on the part of individual companies and industry as a whole must be subjected to independent external monitoring and compliance verification. It is in this area that companies and industries offer the most resistance. It is argued that external monitoring would create an environment of distrust and policing. Companies also fear diluting their reputation with related negative consequences to their business and financial operations. Unfortunately, mere assertions of compliance—in the absence of credible evidence—are unlikely

to carry much weight with external constituencies. (Sethi and Emelianova 2006: 230).

Company CSR policies understandably are designed to address specific projects because that is where the company's responsibility lies. It is not their job to manage bigger picture issues such as longer-term impacts on a nation's entire biodiversity, and even less with how pushing on one part of closed-system-earth might have knock-on effects elsewhere including outside the boundaries of the country in which they are working. It must be admitted that laws also may not dig that deep, but the argument for laws over CSR and general principles is the argument for looking through that wider and more inclusive lens and for adding a public dimension to the inquiry.

Approaching environmental protection through the EIA, as in contracts like the Liberian-Putu Iron Ore Mining and Mano River Iron Ore Agreement, and also in licensing schemes where the dimensions of the EIA have been first set by law, has the virtue of injecting a greater degree of specificity than can emerge from the general principles found in CSR or in voluntary codes like the Equator Principles. A comprehensive EIA would consider a lot of factors: why the action is proposed (its purpose and need), the affected environment, a range of alternatives to the proposed action, and the environmental impacts of each of the possible alternatives (including air, water, endangered species, historic and cultural sites, social and economic impacts, and the costs for each alternative including mitigation). It could also consider a financial plan for the proposed action identifying the sources of secured funding, a mitigation plan, and where necessary additional documentation involving other relevant environmental requirements (in the US this can include state and local permits and reviews) (see Kohn 2002).

Even so, the use of EIAs has received mixed reviews. For example, noting that in Peru and Chile all projects are required to submit an EIA, *The Economist* (2016) pointed out an important detail in its implementation. Peruvian supervision of EIAs was delegated to the Ministry of Energy and Mines 'whose main job is to promote investment', although recently 'an autonomous environmental certification agency' also began work. *The Economist* goes on to quote an NGO that works with communities affected by mining that said that 'people don't believe in the rigour of EIAs' (*The Economist* 2016). *The Economist* expressed concern that local rigour in enforcing requirements is undermined because half of a mine's corporate income tax is devolved to regional and local governments in the area; in this view, 'showering' some mining districts with more money than they can spend fostered corruption.

Thomsen et al. (2001), speaking of hydrocarbon exploration in sensitive ecosystems, recommend 'ongoing and long-term evaluation or monitoring of environmental and social impacts at the ecosystem level ... to ensure that the area's ecological and social integrity was upheld' (Thomsen et al.: 90). They went on to point out:

In sensitive and poorly explored terrestrial ecosystems, one cannot rely only on EIAs, as they are traditionally carried out, to provide the biological and ecological information required for ensuring that the health of the ecosystem is maintained. A greater up-front investment is required to ensure that enough information is available for project management purposes ... managers of oil and gas exploration projects must factor in the need for ongoing data gathering into project time frames and allow enough flexibility in the project execution phase to take full advantage of such data. (Thomsen et al. 2001: 109–110)

3.3 The limits of CSR

A wild card in the discussion of approaches like CSR is the growing significance of investors who are based in home countries with poorly established environmental requirements. Those investors do not face the same kinds of domestic or even international cultural or economic pressures in their overseas business activities that contributed to the development of the various voluntary approaches described above. A great deal of current mineral exploitation is driven by China, which is active in exploiting resources in Africa, Asia, and Latin America. China's domestic commitments to and implementation of pollution controls have been weak and questionable (see, for example, Bell 2003), and many assessments of China's overseas behaviour with respect to the environmental consequences of extraction abroad have been similarly bleak.

How significant is Chinese investment? Gonzalez (2012) says that China is vying with the World Bank and the Inter-American Development Bank to become a major lender in Latin America. Chen et al. (2015) at Brookings Institution put the case less strongly for Africa, calculating that China's foreign direct investment (FDI) there was only about 3 per cent of total FDI on the continent. UNCTAD's *World Investment Report 2015* (UNCTAD 2015) puts that figure at 4.4 per cent of the total in 2013–14, behind the European Union countries, led by France and the United Kingdom, the US, and even South Africa. Chen et al. (2015) conclude that:

China's investment is more visible in the poor rule-of-law countries because China *has* invested in those locations whereas Western investment generally stayed away from them. Countries in which China's share of investment is large include Angola, Burundi, the Central African Republic, the Democratic Republic of the Congo, Eritrea, Guinea, and Zimbabwe. (Chen et al. 2015).

While Chen and his colleagues are not focused on the environmental impacts of Chinese investment, it is certainly easy to speculate that these are the countries least likely to push for strong environmental controls.⁹

Struggling to assess China's influence, Tan-Mullins (2014) assesses the feasibility of 'socializing' China towards adopting current CSR global norms, particularly given the large number of state-owned enterprises participating in the extractive sector (and the Chinese government's corresponding unwillingness to embrace initiatives based on transparency and stakeholder consultation) (Tan-Mullins 2014).

A more optimistic view is found in Jansson et al. (2009), who conclude that Chinese extractive companies are receptive to the principle of transparency and general CSR standards; they say that 'there are, in fact, few differences in the operating procedures between Chinese corporations per se and other international actors engaged in Africa'. Their report focuses on transparency in general (rather than environmental impacts) but contains useful information and case studies about Chinese companies' environmental practices in Africa (including the use of EIAs) (Jansson et al. 2009).

⁹ However, this may be changing since the Chinese do appear to recognize the importance of 'Guidelines for Social Responsibility in Outbound Mining Investment', proposing such through the China Chamber of Commerce of Metals Minerals and Chemicals Importers and Exporters (CCCME) (which is a subordinate unit of the Ministry of Commerce of China representing 6,006 companies investing abroad and trading mineral, metal, and hydrocarbon products) in October 2014 and putting them out for comment in 2015 (OECD n.d.). As of the writing of this paper, there is no implementation experience to point to.

3.4 Falling commodity prices—some consequences for environmental regulation

The entire issue of environmental controls, investor interest in accommodating local requirements, and country-level will to identify, agree, and implement them has been further complicated by the recent severe plunges in commodity prices and therefore revenues—the so-called Commodity Slump that began approximately in 2014 (Pakiam and Katakey 2015). Until around 2012, the unusual profits associated with the so-called ‘super cycle’ of commodity prices were a key driver of decisions about extraction. Many countries, contrary to the advice rendered them by the Natural Resources Governance Institute, economist Paul Collier, and others, to use those revenues to develop alternatives in their economies that might make them less dependent on extraction, and to save for a rainy day, became highly dependent (Collier 2010).¹⁰ Now that reality has changed, what are the challenges to implementation of environmental requirements? Are countries arguably now even less likely to impose restrictions and/or to enforce them? Will they in fact try to increase production or otherwise change the rules to favour extraction companies and so try to compensate for the impacts of the commodity price falls?

How some countries are reacting provides some additional insights into the poor level of commitment to environmental damage vs. a focus on revenues. Peru is one example. The drop in commodity prices has led to a strong decrease in economic growth, foreign exchange earnings, and tax revenues (Ballivián 2013). The government’s response to date has been to implement policies designed to relax the conditions of mining and oil contracts, in order to increase production. The bigger exports in volume would in their view ‘compensate’ for the losses brought by the end of the ‘super cycle’. Campodonico (2015) finds this policy relaxation particularly noticeable in the areas of previous consultation and EIAs.

In Bolivia, investment is now permitted in Protected Natural Areas, which was strictly forbidden by previous legislation. This allows access to land owned by communities and indigenous people to ‘encourage’ investment (Campodonico 2015).

Clearly, where these revenues are central to the functioning of a poor country, the temptation will be to make extraction easier and less onerous. More difficult is how to resist that temptation. *The Economist* (2016) noted, ‘ironically’ that ‘the end of the boom may increase both government and public support for mining’.

4 A bigger tool box: alternatives to improve environmental performance in extraction

There is no question that the general principles identified in the literature point in the right direction. Good practice standards should provide ‘guidance on how to identify risks and impacts ... and be designed to avoid, mitigate and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to project-level activities’ (IFC 2012).

The various tools discussed above, namely contracts, lender and industry-created principles, CSR initiatives, and EIAs, each try in their own way to achieve this goal in difficult venues. However,

¹⁰ Some resource-rich countries, such as the United Arab Emirates (UAE), have made progress towards reducing their dependence on extractive industries (see Coface 2014). However, the UAE is a much more developed country than most discussed here. For the intersection of resource dependence and CSR in developing countries, see Genasci and Pray (2008).

frustration with uneven results has driven a number of observers to offer alternatives that they believe might improve environmental performance in tangible ways.

Oshienbo (2009) offers a mixed bag of suggestions to improve implementation of the World Bank Group's environmental standards. These include a) incorporating the past environmental performance of project borrowers into funding decisions, b) imposition of financial sanctions (i.e. fines) as a compliance, c) the involvement of independent environmental experts at all stages of project development, including review of any required EIAs, d) environmental capacity-building at the borrower/host government level through training initiatives, and e) community and NGO consultation. Some of this suite of recommendations are, of course, already part of the compliance toolkit.

Freeman (1997) argues for the use of environmental insurance in transnational lending as a means to improve enforcement of international environmental norms. Unlike EIAs, environmental insurance can both assess and enforce compliance with international environmental standards because insurance companies require as a contractual condition of issuing and renewing the policy that the insured adheres to certain environmentally prudent behaviours and procedures.¹¹ As with domestic insurance practices, if implemented, this would create a private legal regime that enforces public (environmental) values.

Any number of commenters elaborate on the community consent approach. Laplante and Spears (2008) recommend engaging in consent processes with communities and groups directly affected by extractive projects with a view to obtaining their free prior and informed consent (FPIC). They argue that this will give companies who obtain FPIC a competitive advantage (since their projects will not be subject to later community protests) while giving communities the benefit of enforceable agreements granting them control over their natural resources and environment (Laplante and Spears 2008).¹² Their article is based in part on anthropological research conducted among affected communities in Peru. Recent reporting from Peru suggests, with some exceptions, that forms of community consent have helped prevent conflicts, and that the lower commodity prices and resulting delays or postponements of some projects 'potentially offer more time for consultations' (*The Economist* 2016). On the other hand, *The Economist* reports examples from Colombia in which prior consultation became a 'means to extort money from companies'.

Baker (2012) proposes an expansive interpretation for the IFC's Performance Standard 7 in which project developers would enter into 'Environmental and Social Risk Agreements' with affected communities incorporating explicit contractual allocation of environmental and social risks among all stakeholders. As the author questions the current implementation of the IFC's FPIC policy (reflected in Performance Standard 7—Indigenous Communities) as largely ineffective in allocating environmental risks among project participants and local/indigenous stakeholders, this would help to shift environmental risks from indigenous communities to project developers (Baker 2012).

Seck (2008) would make home states responsible for exercising extraterritorial jurisdiction over extraction activities of their nationals abroad. Host state jurisdiction would be based on 'territorial points of control', including 'stock exchanges, financial institutions and enabling corporate laws', as well as services provided by export credit agencies and trade commissioners (Seck 2008: 188–

¹¹ However, experience with the use of independent auditors to monitor climate change mitigation obligations under the Kyoto protocol has been generally unsatisfactory (see Dyck 2011).

¹² These ideas are picked up in terms of specific guidelines for companies in ICMM's Community Development Toolkit (ICMM 2012).

89). The author's models are Canada's and Australia's extraterritorial regulation of their extractive industries. She would use the nexus of corporate law to impose such regulations, for example requiring all companies listed on home state stock exchanges to comply with minimum environmental standards (i.e. consultation with affected communities) (Seck 2008).¹³

Seck's idea can be scrutinized through a legal or a political lens. Bernhard (2014) looks at the legal case, concluding that Seck's arguments 'alternatively raise concerns about the implications of imposing one country's legal regime on another or appealing to the tenants of universal jurisdiction, which are typically reserved for the most heinous crimes...' (Bernhard 2014: 212). Instead, Bernhard suggests bringing such cases to an International Corporate Criminal Court (Bernhard 2014). Looking at this suggestion through a political lens is even less encouraging, as incorporating such ideas would require massive amounts of political will in the face of often powerful domestic interests. What unifies both Seck's and Bernhard's contributions is frustration with the weakness of current tools. Some similarly frustrated transparency advocates suggest that Section 1504 of the US Dodd-Frank Act, which requires extractive companies to disclose the amounts they pay to foreign governments for licences and other approvals, could prove to be a useful tool in this regard. However, the future of this rule, which was made an early target of the new Trump administration, is unclear at the time of this writing (see Rubenfeld 2015).¹⁴

Several experts have recommended forms of 'naming and shaming'. Independent monitors can collect information about environmental and social performance to inform such a strategy. Or the requisite information can be extracted from CSR commitments, the Equator Principles, the IFC Performance Standards, or other tools listed above that have developed as alternatives to occupy otherwise legal vacuums. Lance (2013) noted that the information obtained pursuant to, e.g. the Equator Principles, provides 'ammunition [to NGOs and others who might lodge protests or organize shaming opportunities], as well as additional avenues to contact and interact with the project borrowers' (Lance 2013: 198). The naming and shaming process adds a significant public component, assuring that the information is made available where it counts—directed to investment vehicles, shareholders, the press, the NGO community, or concerned governments.

Naming and shaming certainly is a strategy for highlighting prominent activities taking place in far-distant places that would otherwise be hard to track and evaluate and that might otherwise escape public notice. The principle is that sunshine is a powerful disinfectant. Williams (2004) would build a naming and shaming approach on transparency (citing the Extractive Industry Transparency Initiative as a positive model) that exposes multi-national corporations to reputational harm in the event that they fall short of meeting social or environmental standards (Williams 2004). In her 2004 article, she argues that civil-society demands for CSR are changing the social and business paradigms under which some multi-national corporations operate, and in turn are also changing norms of appropriate industry action in environmental matters, creating global standards of action (Williams 2004).

¹³ A recent example was reported in the *New York Times*. Guatemalan women who were evicted from land and raped have brought a negligence action in Canada against the Canadian extraction company, *Caal v. Hudbay Mineral Inc.* (see Daley 2016).

¹⁴ In June 2016 the US Securities and Exchange Commission (SEC) finalized the 'Disclosure of Payments by Resource Extraction Issuers' rule, requiring oil, natural gas, and mining companies to publicly disclose the billions of dollars they pay to foreign governments for drilling rights around the world. This rule—meant to promote transparency and fight corruption—now faces the prospect of repeal as Republicans in 2017 look to roll back a myriad of the Obama administration rules.

The three significant constraints on naming and shaming are information overload, the limited number of response tools for those who are outraged, and the complexity of creating effective campaigns around information.

A naming and shaming approach, assuming it relies on genuine facts, assumes that reports will be read and will generate actionable embarrassment for the malefactors. In fact, without some sort of personal motivation or connection to even outrageous violations, the potential audiences for such information are people with limited time presented with potentially unlimited amounts of information. It must also be assumed that poor environmental practices will be found in many countries and in many types of extraction involving any number of extraction companies and/or corrupt or distracted domestic officials. This by definition blurs the focus.

The hope in such campaigns is that investors and consumers will respond to such information by exerting pressure. They can, for example, lobby for new or improved laws and regulations. This has proven effective in regulation of forestry products with the enactment of the Lacey Act, the European Union Timber Regulation, and the Australian Illegal Logging Prohibition (Nogueron and Cheung 2014). Under these laws, consumers can organize product boycotts and move investments towards more socially responsible companies.

But there are limitations on the effectiveness of these tools. Successful campaigns for new laws and boycotts generally require considerable organization and coordination, and they work better with a human face or story to give life to the facts. The strategy of stigmatizing has proven more effective for the purchase of diamonds than for purchases of materials that are processed and then combined with other materials to make a variety of products (Haufler 2015). In other words, it is easier for a consumer to associate with boycotting a diamond than oil or copper which goes through several transformations before it is visible to the consumer.

Still another approach is to tweak existing elements of the contracting tool chest to make them more robust and trustworthy. An example would be improving audits and assuring that they are truly independent, as audits play a big role in determining compliance with contract and EIA obligations. This would take considerable effort and commitment. Wara's (2008) research on the Kyoto Protocol demonstrated the unreliability of so-called independent audits in that context; name brand auditing firms were found to have provided cut-and-paste identical language in numerous supposedly independent reviews, showing no real independent audit had been done (Wara 2008).¹⁵ Genuinely independent auditing is probably obtainable but not without considerable effort and cost. A legitimate audit is an important enforcement tool and, when shared with the public, can provide important feedback to a variety of stakeholders.

Another approach is to enhance the skills of domestic environmental experts and give them a seat at the table in contract negotiations, as environmental duties and responsibilities are hammered out. It has sometimes been the fact that the domestic EPA is presented with a *fait accompli* or asked to contribute too late in the process.

¹⁵ A recent and shocking example that auditing and certification must be continually questioned was reported in *The Company That Bribed The World*, discussing Unaoil which has apparently been distributing bribes for almost two decades on behalf of major corporations interested in a variety of transactions, including oil and gas extraction. As part of its findings, the investigative report said that 'Since 2007, Unaoil has been certified by anti-corruption agency Trace International. This in itself raises serious questions about the worth of such international accreditation' (The Bribe Factory n.d.).

A final idea might be to connect the extraction agreement and its climate-related terms to each country's Intended Nationally Determined Contributions (INDCs). Using these INDCs, countries that are party to the United Nations Framework Convention on Climate Change (UNFCCC) articulated the steps each would take within their own countries to address climate change. These represent each country's plan for reducing emissions, taking into account its domestic circumstances and capabilities. The UNFCCC is working on a plan to review these INDCs and keep them current. The utility behind this is to tie environmental commitments to a more general global review process that gets a fair amount of global attention. While it might seem odd to tie extraction agreements to the UNFCCC INDC process, INDCs can encompass a variety of country greenhouse gas control commitments.

5 Conclusion

The challenges reviewed above are not new. There has been considerable commentary in books and articles reviewing many of these challenges for several decades. Much of this commentary concludes with the perfectly reasonable yet frustratingly non-specific exhortation that countries need clear and specific laws and 'the development of an environmental protection ethos'. Smith and Kormos (2001), for example, conclude that:

legislation and contracts need to establish fiscal regimes that encourage, and do not discourage, environmentally sound mining and drilling practices and that provide for bidding procedures that include environmental protection criteria. In addition there must be environmental protection provisions that specify best practices for specific projects, effective environmental protection monitoring, and investment in training of environmental protection personnel. (Smith and Kormos 2001: 241)

The Natural Resource Charter similarly urges companies to 'take steps that go beyond minimum legal requirements to respect the highest environmental ... standards' (Natural Resource Governance Institute 2010). The drafters of the Charter recognize 'there is no guarantee that rules will be followed or capable institutions will work for the country's benefit'. Their suggested antidote is 'strong accountability'.

The Chatham House Report on Conflict and Coexistence in the Extractive Industries (Stevens et al. 2013), recommends to 'go slow', with an emphasis on building capacity to regulate companies and manage these complex responsibilities. Indeed, Chatham House's preferred option is 'delaying development for Afghanistan and Somalia, for example, given the combination of political instability, conflict and environmental stress they are currently facing' (Stevens et al. 2013).

It is not that these recommendations (such as the first above that is from a book published in 2001 but could equally have been written today) are wrong. Rather, the problem is that such authors rarely explain how the results they recommend are to be achieved in practice.

The challenges in making environmental requirements actionable, much like other governance challenges surrounding resource extraction in fragile countries, have no easy solutions. Probably the most realistic answer comes from Lindblom's (1959) pragmatic insight proposed more than 60 years ago, that no single tool can resolve deficiencies in local institutions and a lack of political will. A process of accretion, or what Lindblom calls 'successive limited comparisons', might be more realistic, if it builds expertise and deepens experience over time (see Lindblom 1959: 81). Even in ideal situations, as Lindblom says:

Policy-making is a process of successive approximation to some desired objectives in which what is desired itself continues to change under reconsideration ... Making policy is at best a very rough process ... if [the policy maker] proceeds through a *succession* of incremental changes, he avoids serious lasting mistakes in several ways. (Lindblom 1959: 86).

As a practical matter, gaining incremental knowledge and learning by doing is in fact what is happening in the real world. A variety of tools have been developed and tested, and the best contracts draw on more than one of these. In the best cases, domestic skills are (or should be) developed as contracts are negotiated. What happens after negotiation is also important—ideally a variety of genuinely independent eyes (including paid auditors, international and domestic NGOs, and domestic institutions) will monitor developments and assess whether obligations are honoured. Newer agreements must learn from what has previously been decided in order for this incremental learning process to take place.

Finally, all of this assumes that countries do not treat the extraction contracting process as a mere formality, but rather as an opportunity to fulfil a real desire to develop the kind of local expertise and interest that will contribute sustained attention to the environmental consequences of extraction.

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