Initiative for Policy Dialogue Working Paper Series

September 2006

Future Directions for the Management of Natural Resources

Macartan Humphreys, Jeffrey Sachs and Joseph E. Stiglitz

Resource Curse

Chapter 12: Conclusion

Macartan Humphreys, Jeffrey Sachs and Joseph Stiglitz

The chapters in this volume identify steps that governments of resource-rich countries can take to increase the benefits that their countries derive from their holdings of oil, gas, and other resources. The focus on government action is natural; these actions will only work if governments lead the way. We believe these reforms should attract the support of their populations; indeed in some cases, these reforms will only be brought about with concerted pressure from civil society.

But the resource curse afflicts not just host country governments and their populations, it also affects the operations of major international corporations, their home governments, and those in consuming nations. We believe that reforms that bring an end to the resource curse are in the collective interests of the oil companies and consumer states. The chapters in this book have identified associations between resource extraction and civil wars, human rights abuses, corruption, poor governance, and environmental damage, sometimes at catastrophic levels. Governments of resource rich states cannot resolve these problems alone if the relevant environment is prohibitive.

Responses are therefore needed not only from host countries but also at the level of the international system. Indeed, this is in the interests of both oil companies -- who suffer considerable direct and reputational costs due to their perceived complicity with autocratic regimes, human rights abuses, and environmental havoc[i] -- and their home governments -- who sometimes find themselves following compromised foreign policies, backing despots in order to secure advantageous access to oil and gas fields, pipelines, and sea routes, often with long run damage to the reputation and true national interests of the consuming countries. These responses must ensure not just more equitable relations between producer nations and private corporations but also better domestic economic management of resources and

better handling of the difficult political economy issues that invariably arise in the presence of large amounts of resource wealth.

If we are to make progress in dealing with the resource curse, governments in both consuming and producing countries will have to change what they do; the international community will have to act in concert. Corporations will have to take an active role. And so too will civil society. We can ask corporations to act more ethically, in a more "socially responsible way," but they are more likely to do so when pressure is brought to bear. Most importantly, we cannot rely on goodwill alone.

We summarize here a core set of responses, many of which are drawn from and supported by the Chapters in this volume. Key recommendations for action by national governments include the following.

- **Condition the "deal" on future prices and other economic circumstances**. In the past, oil and gas contracts have not taken sufficient account of how the share of profits accruing to governments change as prices and output change. Oil companies often made sure that they were protected if oil prices fell, but they garnered the extra profits that resulted from soaring prices. No democratic government can accept a deal in which the corporation receives an unconscionably high return, and the country receives a pittance for its natural resource. Companies must be fairly compensated for their investments -- but rates of return that are not commensurate with the risk will never be accepted. The mathematics is relatively simple. Ignoring costs of extraction, consider a deal with a fixed gross royalty of 50%. If the oil company was willing to undertake extraction when it expected prices of oil at $20 a barrel, then, if prices soar to $80 a barrel, the company receives four times the required return ($40 compared with $10). If such price increases are deemed unlikely, "progressive" deals that increase the country's share as prices rise may have only a minor impact on the ex ante value of a deal but can eliminate grossly inequitable situations ex post. But the deals made in the 1980s and 1990s were not sufficiently progressive -- in many cases, the rising value of oil and gas holdings has not resulted in a rising share of benefits for the owners of these resources. Instead, oil and gas

- **Tailor the auction design to the context**. Countries need to take whatever actions possible to increase the level of competition between corporations. Doing so will not only increase the value received by countries but also reduce the risks of cronyism. This can in part be done by better auction design. There are many aspects of auction design (bonus vs. royalty, pre-bid exploration, size of tract, pacing, etc). Auction design, along with contract design, can affect the magnitude of information asymmetries and their consequences. They can affect the number of bidders in the market and the fierceness with which they bid. The choice of design can be very important for revealing information about the value of assets and generating competition. Contract and auction design also affect cash flows of governments -- in badly designed arrangements, governments borrow implicitly at high interest rates from corporations when they can borrow at lower interest rates on the market. There is no one best auction format for auctioning rights to oil and gas, however. Popular formats, such as first price sealed bid are good in some contexts, but in others, particularly where there are complementarities and asymmetric information, the recently developed auction designs described in Chapter 5 may perform much better.

- **Require transparency of negotiated outcomes.** Although having domestic constituencies evaluate contracts during or after negotiations may seem like a constraint on government negotiators, it is a constraint that can in fact increase the bargaining power of domestic negotiators and help produce a better and more durable deal; it is essential if one is to avoid corruption. There is no reason that contracts should be secret.

- **Use bonding to prevent environmental damage.** To mitigate the problem of corporations saddling countries with large environmental costs, governments should require that corporations post bonds in anticipation of future cleanup costs. This becomes more feasible as it becomes easier to ascertain in advance the size of possible cleanup costs. We now know more about the risks of some of the tailings than we knew a quarter century ago, and advances in technology have enabled better monitoring of pollution and possibly even lower costs in pollution abatement.

- **Calculate national wealth correctly.** Rather than following standard approaches that treat oil and gas revenue as income, national accounting standards should be employed that accurately reflect the true economics of oil and gas production, taking account simultaneously of earnings and of the depletion of stocks, and the degradation of the environment. A clear understanding of the true wealth of a resource rich nation can help counter temptations to spend too much too quickly and to rely too narrowly on a depletable asset. Focusing on Net National Production rather than Gross National Product will focus attention on the benefits to the developing country -- a mine which increased GDP, but in which most of the profits went to a foreign owner, would look far less attractive from the perspective of NNP.

- **Stabilize expenditures.** Many resource rich countries suffer greatly from the boom bust pattern. Resource prices are volatile; but when incomes are high, international lenders are willing to lend them more, so they even spend beyond their ample current flows, getting increasingly in debt. Money spent in this way is often poorly spent; and there are huge economic costs to such macro-economic volatility. Some countries have found it desirable to create stabilization funds, credibly committing themselves to steadier patterns of expenditure. But if such funds are to be effective, incentives need to be built in so that political leaders are not tempted to raid them. In addition, at the international level, accounting frameworks have to be appropriately adapted, so that countries that spend out of their stabilization funds in a period of economic downturn are not penalized. Rainy day funds are designed to be spent when there is a rainy day.

- **Use earnings for investment rather than consumption to avoid Dutch disease problems**. Dutch disease effects arise largely from the rapid conversion of resource wealth (in the form of stocks of assets) into domestically produced consumption or investment goods. The effects of this are adverse impacts on non-oil exporting sectors, lower growth, and great readjustment costs once production stops. One solution is to rely on taxation for mobilizing domestic resources. More generally, to ensure sustained growth as natural resources get depleted, earnings have to be invested in financial, physical and human capital. Investing in alternative export sectors, in agriculture, and in education can help sustain growth and diversify risk. It may be desirable, almost necessary to pace investment inside the country, holding some financial assets abroad in the meanwhile.

- **Take steps to avoid inequities.** While there is more scope for pursuing aggressive equalitarian policies in resource dependent countries (without normal adverse effects on incentives), we have seen that resource rich countries are often characterized by great inequality. The political crises associated with oil wealth can likely be mitigated by ensuring a fair distribution of benefits within a country. The decentralization of revenue collection to sub-national entities however can often result in an exacerbation of resource curse effects. The capacity of sub-national entities to manage extreme volatility of income streams and to ensure oversight is often weaker than that of central governments. Thus it is better in most cases to centralize revenue collection and the intertemporal smoothing of expenditures, while allowing for the possibility of decentralizing expenditure to sub-national bodies. There remain, of course, the highly contentious issues of how to divide proceeds. Producing regions in particular should not be faced with the environmental or other damages that may accompany production without seeing evidence of the benefits that derive from the production. In all cases, a first step to confronting the distributive repercussions of oil wealth is to collect and disseminate better information on the impact of oil and gas production on patterns of income distribution within producing countries.

- **Strengthen state-society linkages.** As oil revenues flow in, multiple forces act to delink governing elites from their populations. They no longer, for instance, require

In addition to these recommendations there is a series of ways in which **international action** can help countries seeking to increase their capacity for the management of oil and gas revenues. Recommendations that arise from the chapters in this volume include the following:

- **Develop a mechanism for providing access to the services of skilled negotiators**. Better outcomes could arise for countries if they could draw on the skills of professional negotiators with extensive experience in the industry. Lack of access to such negotiators is in part due to a financing problem. This could be resolved through arrangements that bring together a pool of experts in negotiation that are remunerated according to fair standards from a fund that receives reimbursement only once earnings accrue.

- **Develop a third party natural resource fund management service**. International bodies could create and support a "global clearing house" for natural resource revenue funds. This clearing house could deal with both the logistical and, more importantly, the difficult commitment issues associated with fund management in a way that respects and strengthens the sovereignty of producing nations. It could, for example, only accept accounts that come with strict rules on the magnitude of funds that could be withdrawn every year; disburse funds only when the required signatures of several branches of government are provided; and prevent the non-constitutional raiding of revenues.

- **Enforce stricter standards on multinationals.** Foreign resource companies working in developing countries should be subject to the same environmental and ethical standards they face at home. To ensure high standards there should be both individual and corporate accountability. The international community needs to make it easier for producer states to collect damages from multinationals -- which often have few assets in the countries where they inflict the damage. This may mean piercing the corporate veil: allowing a parent company who owns more than a 20% share in a mining company that has damaged the environment to be sued for the damage inflicted will provide strong incentives for it to exercise oversight. Limited liability was introduced to increase economic efficiency, not to be a shield against bad behavior. Firms (and their agents) that violate environmental standards or engage in corrupt practices should be liable to criminal prosecution, with a full agreement on extradition for violations of such acts. In all cases, action in the home country of the multinational should be facilitated, which in many cases will entail legal reforms that enable pursuing firms across borders (such as through a more expansive version of the U.S. Alien Tort Claims Act). [ii]

- **Create and maintain a global public information office on oil and gas revenue management.** A global information office can be established that collates and posts basic data on contracts and payments for oil and gas around the world. Such a center could create a standardized system for filing contracts on-line and maintaining information on payments and public expenditures on a country-by-country basis. The generation and publication of comparable data on oil deals can facilitate negotiations, and improve oversight once deals are concluded.

Transparency

We close this volume with a special note on the role of transparency in reversing the resource curse. A remarkable number of the chapters in this volume have identified the importance of transparency for resolving the multiple problems emanating from oil and gas holdings. This is all the more striking as these authors come from a range of different professions, disciplines, and perspectives.

In the first section of this book, the chapters by Joseph Stiglitz, Daniel Johnston, Jenik Radon and Peter Cramton all point to the role of transparency in relations between country governments and oil corporations. Joseph Stiglitz in Chapter 2 emphasizes the loss of competitiveness that can arise in weak informational environments. In such cases, all bidders -- both the informed and the uninformed -- may offer less to governments. Yet he also emphasizes the costs to corporations arising from a lack of transparency; chief among these is the possibility that the ensuing rights over oil and gas reserves will not be secure.

In chapters that examined some of the details of oil contract negotiation, David Johnston and Jenik Radon both emphasized that even in settings where competitive bidding may not be optimal, transparency in negotiations will likely render multiple benefits. As illustrated by David Johnston, the complexity of evaluating contracts can result in great confusion over what one would expect to be a simple question: did a government get a bad deal? A lack of transparency may give rise to exaggerated fears that a government did not in fact get a good deal and that foul play or exploitation was present. The case of Chad is illustrative. By common measures, the country got a bad deal. The Government Take figure is low in Chad compared to other countries, and it is likely that the benefits to the country do not adequately capture the increased rents that are now accruing from rising oil prices. However it is difficult to assess with any certainty just how bad the deal is. The measures commonly used to assess the deal fail to take account of key aspects of Chad's situation, such as the cost of transportation and the quality of the oil and, even though the deal is often described as a model of transparency, basic details of the deal are not in fact publicly available.

More transparency can also allow for more effective public oversight. As Jenik Radon emphasizes, more oversight can actually strengthen a government's hand during negotiations: If the domestic negotiator requires the ratification of a watchful public this can serve as a credible demonstration of resolve to get a good bargain.[iii] While this may make striking a deal more difficult, it may also raise the value of a deal for corporations, since any deal struck will have stronger public approval and less chance of being overturned.

In Chapter 5, Peter Cramton similarly emphasizes the importance of a transparent auction design for competitive bidding. He emphasizes that transparency, even in the design of auction process, is likely to be beneficial both to companies and governments as it allows for the selection of more appropriate rules for different settings.

Geoffrey Heal in Chapter 6 notes one key difficulty for countries aiming to get the best value out of oil resources: Poor access to capital markets. This arises in part from the fear of default associated with the political instability and policy uncertainties that are linked to oil and gas producers. If transparency can help allay these concerns and reduce the chances for default, increased access to capital markets can be of general benefit. Jeffrey Sachs in Chapter 7 emphasizes the importance of transparency for avoiding the Dutch disease. Avoiding the adverse effects of oil income on non-oil tradable sectors requires coherent, longer-term, transparent planning to render growth in these sectors more predictable. The logic of these arguments is taken up again by Macartan Humphreys and Martin Sandbu in Chapter 8 who argue that political uncertainty about actions of future governments can lead to faster than optimal expenditure by incumbents. As argued by Paul Collier (2004), saving in such an environment -- through a fund or otherwise -- may simply produce a transfer from a wise present government to a foolish government in the future. Greater policy transparency, by subjecting governments both to more oversight as well as the possibility of better aligning policies between alternating governments, might reduce unpredictability in the future and therefore reduce incentives for present governments to overspend.

Further arguments for greater transparency however are found in Section III in Chapters 9, 10, and 11, which explicitly deal with the political and legal implications of resource wealth. While other chapters emphasized the importance of transparency for negotiations, auctions and fiscal management, Michael Ross stresses the role transparency can play in improving relations between corporations and populations from producing areas. These relations are habitually fraught with difficulties that are unlikely to be resolved simply by increased investments in local projects. Transparency can not only help to improve these relations directly but also indirectly, by changing the focus of activity of local groups. Rather than lobbying extraction companies, these groups might instead direct their activities

towards the central government, thereby taking pressure off companies while strengthening government through the institution of increased accountability. Greater transparency can also insulate states against the possible assumption among populations in producing regions that revenues are greater than, in fact, they are. Terry Karl in Chapter 10 places these questions of transparency at the very center of her analysis. A fundamental source of political decay in oil rich countries, she argues, is the absence of productive relations between governments and their citizens; technocratic fixes are likely to have little effect absent a basic level of trust betweens citizens and rulers. A first step towards establishing this trust, she argues, is the provision of basic information about what monies governments receive and how it is used. Joseph Bell and Teresa Faria provide yet another argument in Chapter 11. Transparency, they contend, is a precondition for the enforcement and implementation of a law; if information is not available on basic details such as government revenues, the agencies of oversight that are central to the rule of law will be unable to function effectively.

These arguments derive specifically from studies by practitioners and researchers of the oil and gas industries. Interestingly, however, the theoretical work on transparency within the field of economic theory points to more mixed results. According to economic theorists, transparency could in principle reduce competition if it allows for easier collusion among firms. Furthermore, while more information about the actions of "agents" is typically better for "principals",[iv] the lack of transparency can, under some conditions, lead to greater effort by political leaders to perform well in order to overcome the informational problem and demonstrate their capacity.[v] For these reasons, much recent empirical work has focused on the effects of transparency. Does transparency *in fact* lead to better outcomes? The results are quite striking. While the theory is mixed, the empirics support the case for greater transparency quite clearly. In one experimental study of the impact of information on competitor behavior, economists found that posting information about competitor actions leads to greater not weaker competition (Huck et al 2000). Another study found that fiscal transparency induces greater effort on the part of politicians, and that this in turn is rewarded with higher approval ratings and a willingness of voters to trust politicians with significantly larger budgets. Strikingly, this research suggests that on average more oversight makes governments more, not less, popular (Alt et al 2001). Other work supports the claims

made here that transparency can help avoid the linkages between state and society that occur in the presence of natural resource wealth. One study, using a natural experiment, concludes that voter turnout rises when voters have more information about policy debates -- a strong indicator of more vibrant political competition (Lassan 2005).[vi] Another recent analysis of radio access confirms that voters with more information are more active and successful in ensuring the political processes do in fact benefit their areas (Stromberg 2005). Yet another study found that increased access to information on education expenditure in Uganda led directly to less misuse of funding at the local level (Reinikka and Svensson 2005). The volume of research supporting the purported benefits of greater transparency appears to be growing rapidly.

In short, the arguments in favor of transparency range from the impacts that it might have on competition between firms when seeking rights to explore and drill; to the enhanced efficiency of negotiation processes; to the credibility of a government's negotiating position and its ability to guarantee the longevity of a deal; to the stability of a political environment and the effects of that on access to capital markets and on the incentives of leaders to spend optimally over time; to the attitudes of populations towards governments; to the ability of basic mechanisms of accountability, be they governmental or non-governmental. These arguments are compelling and are supported by existing empirical work on transparency. They suggest that *the first step towards reversing the oil curse is to remove the layers of secrecy that continue to surround so many aspects of the industry*. This secrecy, while hugely beneficial to the few, comes at great cost to publics inside and outside of producing countries and ultimately to the governments and companies that promote them.

In trying to increase transparency, numerous operational problems arise. The most basic is determining what exactly should be transparent. Clearly, not all documents could or should be made publicly available. Without a clearer identification of what should be transparent, the call for increased transparency may have little content. The chapters in this volume propose the institution of a principle of general transparency subject to specified exceptions. That is, there should be a strong presumption in favor of rights to access to information. Petitioning for limitation of access to particular information should be allowed, but with well defined constraints on what can and cannot remain confidential.[vii]

A second difficult question is how to achieve compliance. Some advocate a voluntary approach. The problem with a voluntary approach (on the part of companies and governments) however is that it is precisely in the difficult cases where voluntary compliance will be less forthcoming that transparency is likely to be most important. Corrupt governments will put pressure on corporations not to disclose. Furthermore with voluntary compliance, individual corporations may be slow to comply simply because they believe that other firms will be slow to comply.[viii] There have however been a number of relatively simple mechanisms proposed to enforce compliance. Host governments are in a particularly strong position to declare a transparency principle imposing a legal requirement on firms to make all payments and contracts public subject to the threat of invalidating contracts should the transparency principle not be applied. This approach has been taken by Sao Tome and Principe. It places responsibility on firms to provide information to a public information office; should they fail to do so, they risk losing the contracts they hope to protect. There are also a number of mechanisms that can be adopted by home countries. Publication of payments could, for example, be a requirement on companies in order to be listed on a stock exchange, or alternatively home country governments could demand that multinationals make all payments transparent -- any payments made to a host country government that is not "published" would simply not be tax deductible. Further pressure could be imposed by banks and banking regulators. Clearly, it is risky for banks to lend to firms that have contracts that do not disclose; this is especially the case where there are oil contracts which might be abrogated if there were a change in government, if such contracts were viewed to deviate significantly from international norms. Accordingly, international financial institutions could also require transparency of payments and contracts for any companies that benefit directly from loans made by these institutions; and financial regulators could require this of the banks over which they have oversight.

A third issue centers on how to prevent violations of a transparency principle through the introduction of *ad hoc* confidentiality clauses within the contracts themselves. One solution found in the Sao Tome and Principe law is to use legal means to render these legalistic attempts to violate transparency null and void. The Sao Tome and Principe law in fact specifically renders such attempts invalid.

A final issue involves preventing information overload and allowing interested parties to manage information efficiently. With high levels of transparency comes the risk that locating key documents can become a complex task. Indeed, in some situations, a glut of unimportant information may conceal a lack of transparency. For instance, with the wealth of information on the Cameroon-Chad agreement on the World Bank website it can take a considerable search to realize that key documents, notably the agreements between the governments and the oil consortium, are not in fact available.[ix] The Joint Development Authority (JDA) of Nigeria and Sao Tome and Principe posts a number of documents about transparency, including the Abuja declaration, which declares that all contracts will be published on-line, but the contracts themselves do not appear on the JDA's website.[x] Thus, one relatively easy solution, as proposed above, involves creating a Global Public Information Center on oil and gas contracting. The advantage of a standardized system of this form is that it not only makes information easier to deposit and to access, but also makes it obvious when information that ought to exist, in fact, does not.

Much more can be done then to increase the transparency of the oil and gas industry and this is likely to have beneficial effects. However, as emphasized in many of the chapters of this volume, transparency may well be a necessary condition for better management of oil and gas wealth, but it is unlikely to be a sufficient condition.

* * *

The experience of the last quarter century has provided surprising and sobering lessons regarding the impact of wealth from natural resources on the politics and economies of producing countries. These countries hold assets of great value, ones for which there is increasing competition. This competition should lead to tremendous benefits to producing countries. The news of new finds in developing countries, from Mauritania, to Guinea Bissau, to Chad should be sources of hope for the populations of these countries. Yet we know that if business continues as usual these hopes will not be fulfilled. In some cases we may expect to see countries failing to capture the true value of their assets, seeing the profits instead move overseas. In other cases we may expect to see rising corruption, political

fragmentation, increased poverty and environmental damage. Yet, as shown in the chapters of this volume, averting these trends is possible. The economics and politics of the resource curse are not especially complicated. Many of the principles that should be applied to counter these adverse patterns are also relatively simple. The difficulty is applying these principles in an environment in which greed and secrecy dominate. At a moment in which it is becoming increasingly clear that past policies have not provided the benefits they promised either to the governments or the populations of producing countries, nor to the populations of consumer countries, and at a time in which bargaining power is likely shifting towards producing nations, there is a great potential, finally, to change the way collectively we manage our endowments of energy and other natural resources.

References

Alt James, David Lassan, and David Skilling. 2001. Fiscal Transparency, Gubernatorial Popularity and the Scale of Government: Evidence from the States. EPRU Working Paper. University of Copenhagen.

Amnesty International. 2002. "Following the oil: French arms deals in Africa." *The Terror Trade Times* 3, June 3. Available at http://web.amnesty.org/web/web.nsf/pages/ttt3_oil (accessed August 2006).

Collier, Paul. 2004. "Petroleum and Violent Conflict," keynote address at the World Bank ESMAP Petroleum Revenue Management Workshop (March, 2004).

Gantzkow, Matthew. 2006. "Television and Voter Turnout." *Quarterly Journal of Economics*. 121 (3): 931-972.

Bloomfield, Robert and Maureen O'Hara. 2000. "Can Transparent Markets Survive?" *Journal of Financial Economics* 55(3): 425-459.

Dewatripont, Mathias, Ian Jewitt and Jean Tirole. 1999. "The Economics of Career Concerns. Part I: Comparing Information Structures" *Review of Economic Studies*. January 66(1): 183-198.

Holmström, Bengt. 1979. "Moral Hazard and Observability." *Bell Journal of Economics*. 10(1): 74-91.

Holmström, Bengt. 1999. "Managerial Incentive Problems: A Dynamic Perspective." *Review of Economic Studies*. January 66(1): 169-182.

Huck, Steffen, Hans-Theo Normann and Jörg Oechssler. 2000. "Does Information about Competitors' Actions Increase or Decrease Competition in Experimental Oligopoly Markets?" *International Journal of Industrial Organization* 18(1): 39-57.

Human Rights Watch. 1998. "Colombia: Human Rights Concerns Raised By The Security Arrangements Of Transnational Oil Companies" New York: Human Rights Watch (April).

Human Rights Watch. 1999. *The Price of Oil: Corporate Responsibility and Human Rights Violations in Nigeria's Oil Producing Communities*. New York: Human Rights Watch.

Human Rights Watch. 2002. "Talisman 'Human Rights' and Development Efforts, 2000-2002." New York: Human Rights Watch.

Human Rights Watch. 1998. "Colombia: Human Rights Concerns Raised By The Security Arrangements Of Transnational Oil Companies" (April 1998) New York: Human Rights Watch.

Lassen, David. 2005. "The Effect of Information on Voter Turnout: Evidence from a Natural Experiment." *American Journal of Political Science* 49(1): 103-118.

Prat, Andrea. 2005. "The Wrong Kind of Transparency." *American Economic Review* 80: 21-36.

Open Society Justice Initiative (Tamm, Ingrid, Christian Lucky and Stephen Humphreys). 2005. *Legal Remedies for the Resource Curse*. New York: Open Society Institute.

Reinikka Ritva and Jakob Svensson. 2005. "The Power of Information: Evidence from a Newspaper Campaign to Reduce Capture of Public Funds." World Bank and IIES Working Paper.

Schelling, Thomas C. 1960. *The Strategy of Conflict*. Cambridge: Harvard University Press.

Strömberg, David. 2004. "Radio's Impact on Public Spending." *Quarterly Journal of Economics* 119(1): 189-212.

[i] Those operating in Nigeria, for example, suffer materially on a continual basis from political unrest, thefts of oil, and the kidnapping of personnel. The reputational costs are perhaps more important: British Petroleum and Occidental have been criticized for their links with security forces in Colombia (Human Rights Watch, 1998); Elf, for reportedly giving direct military support to belligerents in the Republic of Congo (Amnesty International 2002); Shell, for apparent complicity in the execution of Ken Saro-Wiwa, as well as slow responses to massive oil leakages in the Niger Delta (Human Rights Watch 1999); and Texaco for soil and groundwater contamination in the Ecuador Amazon. As a result of continued criticism of its activities in Sudan, Talisman eventually was forced to pull out (on Sudan see Human Rights Watch (2002)).

[ii] In the United States there are legal grounds to take action against corporations in cases of corruption (through the Foreign Corrupt Practices Act (FCPA)) and of egregious human rights abuses (through the Alien Tort Claims Act (ATCA)) but not for environmental damage overseas (see Open Society Justice Initiative (2005)). While such efforts need to be expanded and strengthened in the United States, the introduction and use of such legislation should be universalized through the introduction of compatible legislation in other countries also.

[iii] This logic has been elaborated by Thomas Schelling (1960).

[iv] See Holmström (1979)

[v] See Holmström (1999) and Dewatripont et al (1999). See also Prat (2005) for a different theoretical argument against transparency over actions when outcomes are observable. In this model agents that are rewarded on the basis of actions taken may become more conformist and fail to act on private information that could result in better outcomes.

[vi] Interestingly work by Gentzkow (2006) shows that access to television reduces turnout, in part because voters substitute away from richer sources of information.

[vii] Such allowances are made for example in Article 20 (sections 2 and 3) of the Sao Tome and Principe law (Appendix 1).

[viii] Experimental work (see Bloomfield and O'Hara 2000) suggests, for example, that, when given the choice, dealers choose to withhold information even when there are benefits to releasing it; in doing so they drive out higher information dealers from the market. This simple logic can lead to universal non-compliance even in situations where all firms would in fact be willing to comply if others did also.

[ix] http://www.worldbank.org/afr/ccproj (last accessed August 2006).

[x] http://www.nigeriasaotomejda.com/ (last accessed August 2006).