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# FOREIGN INVESTMENT CONTRACTS IN THE OIL & GAS SECTOR:

## A SURVEY OF ENVIRONMENTALLY RELEVANT CLAUSES\*

by Kyla Tienhaara\*\*

### INTRODUCTION

The Deepwater Horizon tragedy in the Gulf of Mexico in 2010, which resulted in the largest ever accidental marine oil spill,<sup>1</sup> was a stark reminder of the environmental risks posed by the oil and gas industry. Although disasters on this scale are fortunately rare, the average oil and gas operation has many other commonplace, yet significant, environmental impacts throughout its lifespan. Environmental issues begin with exploration activities—seismic tests, used to locate petroleum, often disturb local wildlife—and carry on to the end of the production phase when facilities must be dismantled and disposed of.<sup>2</sup> The everyday operation of many offshore petroleum installations involves the discharge of oil-contaminated “produced water,” drill cuttings and mud, and production chemicals.<sup>3</sup> Onshore, land clearing for base camps, helipads, roads, pipelines, waste disposal sites, and other facilities has a considerable ecological impact.<sup>4</sup> Furthermore, the industry is a significant contributor to air pollution and a major emitter of greenhouse gases. In 2008, thirty-two companies in the International Association of Oil and Gas Producers (“OGP”) reported emissions of 296 million tonnes (metric tons) of carbon dioxide, 2.1 million tonnes of methane, 1.1 million tonnes of non-methane volatile organic compounds, 366 thousand tonnes of sulfur dioxide, and 827 thousand tonnes of nitrous oxides.<sup>5</sup>

The industry faces increasingly strict environmental standards in developed countries such as the United States and the United Kingdom.<sup>6</sup> However, the majority of the world’s proven oil reserves are in developing countries and economies in transition, which often lack sophisticated regimes for environmental protection.<sup>7</sup> Even when legislative frameworks are well developed, there are often deficiencies in capacity and an unwillingness to monitor and enforce environmental regulation.<sup>8</sup> There is, furthermore, no comprehensive global convention on the environmental impacts of petroleum exploration and production.<sup>9</sup> Although a number of multilateral and regional agreements cover certain aspects of the industry, they require adoption into domestic legislation to have a direct effect on international oil companies (“IOCs”).<sup>10</sup>

Apart from domestic and international law, one could also look at conditions attached to loans and investment insurance, as well as voluntary corporate social responsibility codes as sources of environmental standards for the petroleum industry.<sup>11</sup> However, the intent of this article is to shine a light on a much less studied and poorly understood domain of environmental

regulation: the foreign investment contracts signed between IOCs (or consortiums of IOCs) and host states, which allocate rights to explore for and exploit hydrocarbons within an area of land (or an offshore block) over a fixed period of time.

In a 1994 monograph, Zhiguo Gao noted that environmental issues had “not received enough attention” in the oil and gas contracts he had reviewed.<sup>12</sup> His conclusion raises the question of whether environmental issues have received greater attention in more recent oil and gas contracts (i.e. those negotiated and signed in the last fifteen years). This question is difficult to answer, not least because foreign investment contracts generally are not disclosed to the public.<sup>13</sup> Many governments’ model agreements are publicly available,<sup>14</sup> but it should be noted that these models may be substantially altered or ignored altogether in the negotiation of actual contracts.<sup>15</sup>

In this article, sample clauses from forty-one upstream oil and gas contracts (both onshore and offshore) covering thirty-five countries and the period 1994-2008 were reviewed. Fourteen of the contracts were models.<sup>16</sup> An effort was made to find the most up-to-date model contracts, as governments periodically revise them. However, it should be noted that some of the models were undated. The twenty-seven signed contracts reviewed were from twenty-six different countries<sup>17</sup> and had an average signature date of 1999. Some of contracts in the sample are available on the Internet, either because governments have chosen to release them or because they have been leaked to non-governmental organizations (“NGOs”) that have subsequently published them. Others are available in company filings to the U.S. Securities and Exchange Commission.

Given the small number of contracts that were reviewed, and the great variety of clauses that were encountered, nothing can be extrapolated from this preliminary survey about the frequency with which any particular type of clause is likely to appear in oil and gas contracts. Furthermore, in any given situation, a contract should be considered within the broader context of a country’s petroleum law, environmental law, and other domestic legislation. The purpose of the article is not to provide a full picture of environmental regulation of petroleum operations in individual

\* A lengthier version of this article was published in the online journal *Oil, Gas and Energy Law Intelligence* in September 2010.

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countries, but instead to draw attention to how contracts can either bolster or undermine environmental protection efforts.

## TYPES OF FOREIGN INVESTMENT CONTRACTS

There are three main types of foreign investment contracts in the upstream oil and gas sector: (1) concessions or licenses; (2) production sharing contracts (or agreements) (“PSCs” or “PSAs”); and (3) risk-service contracts. In addition, all three may be subject to association or joint-venture agreements.<sup>18</sup> Under concession contracts and licenses, IOCs are often given exclusive rights to explore for and produce hydrocarbons and in return are required to pay royalties, taxes, and fees to the government.<sup>19</sup> In a PSC, the IOC has similar rights, but obtains only “cost oil” and a share of any “profit oil” produced, with the state recouping the remainder in lieu of, or sometimes in addition to, collecting royalties.<sup>20</sup> The IOC also pays taxes and fees.<sup>21</sup> Under a risk-service contract the IOC explores for and produces petroleum on behalf the government and is paid a fee for its services, with a possible right to buy a portion of the production.<sup>22</sup> Association or joint venture agreements involve IOCs partnering with host governments or state-owned enterprises and, as in a PSC, sharing petroleum production.<sup>23</sup>

In practice, these forms and labels tend to be much less important than the specific content of a contract.<sup>24</sup> However, one relevant difference is that unlike a typical concession, an IOC’s costs are generally recoverable under a PSC in the form of “cost oil.”<sup>25</sup> If costs associated with remediating and compensating for environmental harm are “cost recoverable,” then the host government, not the IOC, would assume the risk of such costs.<sup>26</sup> A similar issue may arise with risk-service contracts and even with concessions that have royalty rates that are somehow indexed to costs.

## ENVIRONMENTAL STANDARDS CLAUSES

Most, though not all, of the oil and gas contracts reviewed contained a section on the environmental standards to be applied to the project. In this regard, there are five general forms that contracts appear to follow:

- (i) reference to domestic environmental law only;
- (ii) reference to international industry standards only;
- (iii) reference to both domestic law and international industry standards;
- (iv) reference to domestic law and/or industry standards and international environmental agreements; or
- (v) development of project-specific environmental standards.

Some reference to domestic environmental legislation is clearly desirable from a public policy perspective. Domestic standards have been developed (in most cases) under a democratic system of rule, have often been designed with local environmental conditions in mind, are familiar to the agencies that are tasked with monitoring and enforcement, and are in the public domain. However, as noted previously, in many developing countries environmental regulation of the oil and gas sector is

still in its infancy and it may be inadequate in some situations.<sup>27</sup> As such, reference in contracts to domestic legislation alone may be undesirable. In any event, it would appear that parties rarely adopt this form. A contract from Peru<sup>28</sup> and one from Algeria<sup>29</sup> were the only contracts in the sample that referred solely to domestic environmental legislation.

In several of the contracts in the sample, the parties instead included a reference to international industry standards and failed to mention the application of domestic environmental law.<sup>30</sup> The advantage from an environmental perspective of referring to international industry standards is that in some cases, they may be higher than, or cover specific issues not addressed in, domestic legislation. Furthermore, reference to international standards allows some scope for change and evolution of the environmental management regime of an investment over time, thus providing a way around a contractual requirement for stability, as will be discussed below. However, there are serious problems with referring *only* to industry standards, given their inherent ambiguity. The terminology “good oilfield practices”<sup>31</sup> or “good production practices”<sup>32</sup> is frequently employed in environmental standards clauses, as well as in other types of provisions discussed further below, but these phrases are seldom defined.<sup>33</sup> A 2002 Cambodian contract provides a rare example of a definition:

Good Petroleum Industry Practices means the standards and practices, and exercise of that degree of skill, prudence and foresight that would reasonably be expected of persons carrying out international petroleum operations, and adherence to generally accepted standards of the international petroleum industry, including sound environmental provisions.<sup>34</sup>

It is not at all clear where exactly one should look for “generally accepted standards” as there are a multitude of potential sources. For example, members of the American Petroleum Institute (“API”) “pledge” to manage their businesses according to a set of eleven environmental principles.<sup>35</sup> However, the majority of these principles are imprecise, such as the commitment “to reduce overall emission and waste generation.”<sup>36</sup> The API also has guidelines for environmental protection in both onshore and offshore oil and gas operations, although they are not freely available to the public.<sup>37</sup> Other potential sources include guidelines produced by the previously mentioned OGP,<sup>38</sup> the Australian Petroleum Production & Exploration Association,<sup>39</sup> as well as bodies such as the International Organization for Standardization (“ISO”).<sup>40</sup> As Wawryk notes, the existence of so many guidelines in the petroleum industry makes it impossible to point to one that can definitively be considered “good” practice and furthermore the “actual practices of international oil companies . . . vary from company to company and, for one company, across jurisdictions . . . making it difficult to identify the best practices actually in use.”<sup>41</sup>

The majority of contracts reviewed for this article contained reference to both domestic environmental law and international industry standards. In most cases, there was no mention of how these two sources of standards would be reconciled in the event

of a conflict. However, in some contracts a form of hierarchy was established. For example, Article 21.1 of Brazil's 2001 Model Concession Contract indicates that industry standards are only intended to act as a supplement to domestic legislation:

The Concessionaire shall adopt, at its own cost and risk, all the necessary measures for the conservation of reservoirs and other natural resources and for the protection of the air, soil and water in the surface or in the subsurface, subject to Brazilian legislation and rules about environment and, in their absence or lack, adopting Oil Industry Best Practice in this regard.<sup>42</sup>

In contrast, the clause below, from a 1994 Azerbaijani contract, has evidently been adopted to ensure that domestic environmental regulation is *not more stringent* than international industry standards:

Contractor shall comply with present and future Azerbaijani laws or regulations of general applicability with respect to public health, safety and protection and restoration of the environment, to the extent that such laws and regulations are no more stringent than the then current international Petroleum industry standards and practices being at the date of execution of this Contract those shown in Appendix IX, with which Contractor shall comply.<sup>43</sup>

In addition to domestic law and industry standards, some oil and gas contracts refer to international environmental agreements, although this does not seem to be a common practice. One example is Article 6.5 of Liberia's Model PSC, which states that: "The Contractor further undertakes to carry out all petroleum operations in accordance with the Environmental Protection and Management Laws of Liberia and all international environmental practice."<sup>44</sup> It is questionable whether such a sweeping reference to international environmental law will have anything more than symbolic value. Provisions in multilateral environmental agreements are not only typically "soft" in nature; they also generally require adoption in domestic legislation before they can have any impact on private actors.<sup>45</sup> Furthermore, few environmental agreements tackle specific issues concerning the management of petroleum exploration and production. However, there are some treaties covering marine pollution that are relevant to offshore operations.<sup>46</sup> In this respect, Mauritania's 1994 Model PSC is less ambiguous in its reference to international environmental law, noting in Article 6.6 that:

The Contractor shall take all [sic] necessary precautions to prevent pollution of the marine area of the Exploration Perimeter and observe, inter alia, the provisions of the International Convention on the prevention of petroleum pollution of sea waters signed in London on May 12, 1954 and the amendments and texts enacted for the implementation thereof.<sup>47</sup>

The final form of standards clause observed in the sample, although only in one contract, is the development of a project-specific environmental regime. A 1996 contract between Azerbaijan and a consortium of investors stipulates that the contractor, the state-owned oil company, and the State Committee

on Ecology and Control over the Use of Natural Resources will jointly agree on a set of safety and environmental standards based on "(i) international petroleum industry standards and experience with their implementation in exploration and production operations in other parts of the world and (ii) existing Azerbaijan safety and environmental legislation."<sup>48</sup> Once developed, this set of standards can only be altered through a written agreement and if any standards that have not been agreed upon are applied to the project, the investor can invoke the contract's stabilization clause.

## STABILIZATION CLAUSES

According to a 2008 study, the use of "stabilization clauses" in host-government contracts "is widespread across industries and regions of the world."<sup>49</sup> Stabilization clauses come in various forms.<sup>50</sup> In their most basic form, they "freeze" the law that applies to the investment at the time the contract is signed.<sup>51</sup> A more nuanced version is often referred to as an "economic equilibrium" clause, which requires the government to restore the balance of risks and rewards established in a contract when it is upset by a new regulation or tax.<sup>52</sup> A stabilization clause can be strictly circumscribed to only cover very specific issues, or the parties to the contract can explicitly "carve out" areas such as environmental protection from its application. For example, in a 1997 contract from Kazakhstan, the stabilization clause contains the caveat:

*provided, however,* that no amendment to this Agreement shall be required hereunder as the result of (i) changes to Laws concerning health, safety or environmental protection that cause such Laws to be consistent with international standards for health, safety or environmental legislation and are applied on a non-discriminatory basis . . . .<sup>53</sup>

As Lorenzo Cotula notes, this provision is weakened by its ambiguous reference to "international standards,"<sup>54</sup> but it is still far preferable to the stabilization clauses found in many contracts and even in model agreements that are worded in such a broad manner that they can stifle any future regulation that might be perceived to undermine the profitability of an investment, including efforts to address corruption, to safeguard human rights (including labor rights), and to protect the environment.<sup>55</sup>

## ENVIRONMENTAL IMPACT ASSESSMENT CLAUSES

Environmental Impact Assessments ("EIAs") and corresponding management plans have become a staple requirement for investment projects in many sectors.<sup>56</sup> Unfortunately, a recent survey of environmental governance in petroleum producing countries commissioned by the World Bank found that "much of the emphasis of the EIA process appears directed towards the approval of oil and gas projects, rather than to a life cycle approach for minimizing environmental and social impact."<sup>57</sup>

An EIA is typically mandated to be completed after a contract with the state has been signed<sup>58</sup> and most of the contracts reviewed for this article contained some reference to the need for an EIA. However, the form of the EIA clauses varied widely

across the sample from a simple note of the existence of a requirement,<sup>59</sup> to detailed specifications of what the EIA should cover, who should prepare it, when it should be submitted, and so forth.<sup>60</sup>

### CLAUSES ON ACCESS TO PROTECTED AREAS

Petroleum operations are particularly contentious when they are located, even partially, within wildlife reserves, parks, or areas of cultural or biological significance.<sup>61</sup> NGOs have long argued that such areas should be off limits to the extractive industries,<sup>62</sup> but most governments are not ready to forgo the potential economic opportunities that the exploitation of these areas offer. This is evident in several of the contracts in the sample. For example, Article 37.6 of Madagascar's 2006 Model Offshore PSC states:

In the event that a portion of the Contract Area is located within a natural reserve area, the Operator shall deploy the necessary efforts in order to minimize the negative impacts on these natural reserves, in accordance with generally accepted environmental practices in the international petroleum industry.<sup>63</sup>

This is an incredibly weak provision. A 2004 PSC from Uganda is similarly permissive, but it also contains a bizarre caveat:

In the event of protest from responsible concerned third parties within or outside Uganda regarding the conduct of Petroleum Operations in any National Park or Game Reserve and the consequent effects upon the environment or wildlife, the Government and Licensee shall meet to determine what if any action should be taken.<sup>64</sup>

Given that this clause provides nothing more than an obligation for the investor and the government to meet, it is questionable why the parties bothered to include it at all.

### CLAUSES ON ACCESS TO WATER & OTHER NATURAL RESOURCES

Petroleum operations require natural materials in their construction phase, and significant amounts of water and electricity throughout their operation. While many operations are self-sufficient in terms of energy supply, other natural resources may need to be obtained from within or outside the contract area.

From an environmental and community rights perspective, as well as from an economic-development perspective, it is disturbing that many governments appear to focus solely on the potential revenue that they can obtain from petroleum production and are willing to simply give away other valuable natural resources under the terms of oil and gas contracts. For example, Article 27.8 of Mozambique's 2007 Model concession contract provides for the right of the investor "to drill for and have the free use of water and impound surface waters."<sup>65</sup> A contract from the Kurdistan Regional Government of Iraq is even broader, giving the contractor the right to "freely use sand, water, electricity, and any other natural resources located inside or outside the Contract Area for the Petroleum Operations."<sup>66</sup>

Some of the contracts in the sample were completely silent on the issue of access to natural resources, and a small number had more nuanced provisions than those quoted above. For example, a 1994 contract from Ethiopia states that the contractor shall "have the right, subject to the approval of the Minister, to use water in the Contract Area for operational purposes, but the Contractor shall not deprive any land, domestic settlement or livestock watering place of the water supply to which they are accustomed."<sup>67</sup> A 2008 Model PSC from Bangladesh goes a step further by requiring that the contractor pay for the natural resources, such as water, that it utilizes.<sup>68</sup>

### CLAUSES ON GAS FLARING

The World Bank estimated in 2004 that the volume of associated gas being flared and vented globally every year was about 110 billion cubic meters—enough fuel to provide the combined annual natural gas consumption of Germany and France.<sup>69</sup> Although some short-term flaring during testing or in cases of emergencies is accepted as standard practice in the industry, the flaring of more substantial amounts of gas is only practiced in poor countries with limited infrastructure and weak regulatory institutions.<sup>70</sup> Aside from being incredibly wasteful, flaring has a significant impact on local air quality and also makes an appreciable contribution to climate change.<sup>71</sup> At the World Summit on Sustainable Development in Johannesburg in 2002, the World Bank launched a Global Gas Flaring Reduction initiative to tackle the problem.<sup>72</sup> Despite this development, and widespread condemnation of the practice, flaring continues in many states. In 2008, thirty-two companies in the OGP admitted to flaring 18.6 tonnes of gas for every thousand tonnes of hydrocarbon that they produced.<sup>73</sup>

Many oil and gas contracts, even recent models, appear to be lenient on the issue of flaring. For example, the Bangladesh 2008 Model PSC notes in Article 15.3 that:

Any Associated Natural Gas as is not used under Article 15.1 or Article 15.2 and which Contractor does not consider possible to recover economically shall be offered to Petrobangla without any payment to Contractor but at Petrobangla's cost at the well-head or field facilities in the Production Area. To the extent that Petrobangla does not so take any of such Associated Natural Gas, Contractor may flare such Associated Natural Gas provided that such flaring is included in the Development Plan submitted under Article 8.10.<sup>74</sup>

Although this clause gives priority to utilization of the resource, there is no requirement for the gas to be reinjected into the ground if it is not taken by the state-owned enterprise, and economic concerns clearly trump environmental ones.<sup>75</sup> A 1997 contract from Indonesia also reflects this position in the statement that gas "may be flared if processing and utilization thereof is not economical."<sup>76</sup> Other contracts, such as a 2000 contract from Belize<sup>77</sup> and a 1998 contract from Angola,<sup>78</sup> allow for flaring only if it is authorized by the government. A Ugandan contract from 2004 also follows this model, but includes the caveat that the government's consent "shall not be unreasonably

withheld or delayed.”<sup>79</sup> The most stringent clauses, found in only a few contracts in the sample, restricted flaring to cases of an emergency or for safety reasons.<sup>80</sup>

### CLAUSES ON RESPONDING TO EMERGENCIES AND ACCIDENTS

In 2008, thirty-two companies in the OGP reported 2,978 spills greater than one barrel in size, resulting in the release of 18,266 tonnes of oil into terrestrial and marine environments.<sup>81</sup> In many of the oil and gas contracts in the sample, the parties have recognized that spills and other accidents and emergencies have the potential to occur and should be planned for. As such, as a part or separate from an EIA, an emergency response plan is often required from the contractor.<sup>82</sup>

Some oil and gas contracts also cover three additional elements in respect of emergencies: notification, response, and consequences for failure to respond. In the oil and gas contracts reviewed, notification was limited to the contractor apprising the government of the situation, but not the local community or the broader public.<sup>83</sup> In terms of response, the requirements were often vague (e.g., “take prudent steps”) or simply provided reference to good oilfield practices.<sup>84</sup> However, some of the contracts in the sample did additionally stipulate that in the event that the contractor did not act promptly to respond to an emergency or accident, the government had the right to mount its own response and charge the contractor for expenses that it incurred in doing so. An example is found in a PSC from Ghana:

If Contractor does not act promptly so as to control, clean up or repair any pollution or damage, GNPC [Ghana National Petroleum Corporation] may, after giving Contractor reasonable notice in the circumstances, take any actions which are necessary, in accordance with accepted Petroleum industry practice and the reasonable costs and expenses of such actions shall be borne by Contractor and shall, subject to Article 17.5 be included as Petroleum Costs.<sup>85</sup>

### CLAUSES ON LIABILITY, INDEMNITY, & INSURANCE

Liability for environmental damage is an increasingly important issue for the oil industry. The dispute between Chevron and the residents of the Ecuadorian Amazon concerning the company’s liability for oil pollution is a prime example of why most modern contracts have express provisions on liability that cover environmental damage.<sup>86</sup>

Issues of liability for environmental damage can be complex, especially when multiple parties, including state-owned enterprises, are involved in petroleum production. Contracts, therefore, should have provisions that are explicit about *who* is to be liable for *what* and to *whom*. The issue of “who” depends somewhat on the form of contract, but generally it is the contractor or concessionaire (the IOC) who will be liable, except in cases where fault can be directly attributed to the state or state-owned enterprise.<sup>87</sup> If there is more than one contractor involved in the project, then there will likely be a clause that stipulates that they are jointly and severally liable.<sup>88</sup>

The issue of “what” concerns the types of harms (e.g., only death or injury or also “damage to the environment”), the period in which the harms were caused (i.e. no liability for prior environmental damage established in a baseline assessment), and the legal form of the liability (fault, strict, or absolute).<sup>89</sup> Finally, on the issue of “whom” the contractor is liable, there are typically two separate issues covered in contracts: liability to the state and liability to third parties.<sup>90</sup> In the latter case, the issue is not directly one of liability—contracts cannot affect the rights of third parties under national law—but rather one of indemnity.<sup>91</sup> Through indemnity clauses, IOCs commit to compensate states for any costs incurred resulting from a third-party liability suit.<sup>92</sup>

Most contracts in the sample made specific mention of “pollution” or “environmental damage” in liability/indemnity clauses and adopted a strict liability approach.<sup>93</sup> However, a 2002 Cambodian<sup>94</sup> contract provided only for fault liability. The most developed liability/indemnity clause in the sample was from a contract signed by Belize in 2000, which required that the contractor contribute one tenth of one percent of the value of the gross annual production to a fund managed by the government “for the sole purpose of indemnification against any or all environmental damages cause during the petroleum operations.”<sup>95</sup>

An additional issue closely related to liability and indemnity is the requirement for contractors to have insurance coverage. These clauses often specify that insurance should cover “pollution” or “environmental damage.”<sup>96</sup> One potential problem with both liability/indemnity and insurance clauses is that the term “pollution” is quite narrow and does not cover all of the various environmental impacts from oil and gas operations.<sup>97</sup> Even references to “environmental damage” could be subject to interpretation if not defined in the contract.

### CLAUSES ON DECOMMISSIONING & REMEDIATION

When an oil operation reaches the end of production, a number of costly activities must be undertaken. Onshore wells need to be plugged and structures dismantled, with materials removed and ultimately recycled or disposed of. Remediation of the local environment (e.g., decontamination and revegetation) may also be required. Offshore installations present particularly complex issues in terms of decommissioning, although it is also in this area that international law has its most direct and significant impact on the oil and gas industry.<sup>98</sup>

The extent to which decommissioning is dealt with in contracts depends somewhat on the contractual relationship between the parties and the expected life of the project. Under some arrangements, states retain ownership over production facilities and may continue operations after the termination of the contract. However, even in such instances, there may be contractual provisions covering decommissioning of installations that are not destined to be taken over by the state.

Clauses on decommissioning and remediation found in contracts in the sample were generally lacking in detail. For example, a 1997 PSC from Benin states:

At the end of the Contract, in any other situation than the abandonment case, the Contractor must take the

measures according to the Good Practices of the Oil Industry to restore the environment and the sites where the Petroleum Operations have been performed to their original state on the Effective Date of the Contract, taking into account the rules of the abandonment procedure.<sup>99</sup>

Although this provision appears quite strict, as it suggests that sites should be restored to their “original state,” it is weakened by the generic reference to good oilfield practices.<sup>100</sup> According to a recent World Bank report, the absence of guidelines for what should be included in a decommissioning plan is a pervasive problem in petroleum producing countries.<sup>101</sup>

In addition to an absence of guidelines, there are obviously strong incentives for some companies to “cut and run” or to conduct only superficial remediation to minimize costs. One method for ensuring that decommissioning and remediation are carried out to plan is to use a financial mechanism such as a performance bond or reserve fund. Tanzania is an example of a country that has set up such a regime in its 2008 Model PSC.<sup>102</sup>

### CONCLUSION

Since Gao’s study was published in 1994,<sup>103</sup> there have been significant changes in the content of upstream oil and gas

contracts vis-à-vis environmental protection. The small sample of contracts reviewed in this article indicates that a significant number of clauses covering a variety of issues—from baseline environmental assessments all the way through to environmental remediation—can be found in modern contracts. Given the monumental increase in environmental awareness and the intense scrutiny that the industry has come under in the two decades, this is unsurprising. What is remarkable is that a handful of contracts still resemble those that Gao criticized for having only a token mention of environmental protection, and that references to ambiguous terms such as “good oilfield practices” remain so pervasive.

Further research will be required to build an understanding of why there are such wide disparities in contracting practice between countries. For example, it would be interesting to explore whether the environmental provisions in oil and gas contracts reflect domestic attention to these issues or if the capacity of the government to negotiate with IOCs is a more relevant factor. Additionally, empirical work is required to determine the extent to which contract clauses on environmental issues are actually implemented by IOCs and monitored and enforced by governments.



## Endnotes: Foreign Investment Contracts in the Oil & Gas Sector

<sup>1</sup> Ronen Perry, *The Deepwater Horizon Oil Spill and the Limits of Civil Liability*, 86 WASH. L. REV. 1, 3 (2011).

<sup>2</sup> Zhiguo Gao, *Environmental Regulation of Oil and Gas in the Twentieth Century and Beyond: An Introduction and Overview*, in ENVIRONMENTAL REGULATION OF OIL AND GAS 3, 4-7 (Zhiguo Gao ed., 1998).

<sup>3</sup> Sergei V. Vingradov & Jay Paul Wagner, *International Legal Regime for the Protection of the Marine Environment Against Operational Pollution from Off-shore Petroleum*, in ENVIRONMENTAL REGULATION OF OIL AND GAS 93, 96 (Zhiguo Gao ed., 1998).

<sup>4</sup> Amy B. Rosenfeld, Debra L. Gordon & Marianne Guerin-McManus, *Approaches to Minimizing the Environmental and Social Impacts of Oil Development*, in ENVIRONMENTAL REGULATION OF OIL AND GAS 279, 294 (Zhiguo Gao ed., 1998).

<sup>5</sup> INT’L ASS’N OIL & GAS PRODUCERS, ENVIRONMENTAL PERFORMANCE IN THE E&P INDUSTRY 2008 DATA 6 (Nov. 2009), <http://www.ogp.org.uk/pubs/429.pdf>.

<sup>6</sup> See Gao, *supra* note 2, at 32-35.

<sup>7</sup> *Id.* at 35-37.

<sup>8</sup> Kit Armstrong, *Managing Environmental Legal Risks in Oil & Gas Exploration & Production Activities*, in ENVIRONMENTAL REGULATION OF OIL AND GAS 359, 374-75 (Zhiguo Gao ed., 1998).

<sup>9</sup> See Ayesha Dias, *The Oil and Gas Industry in the Tangled Web of Environmental Regulation: Spider or Fly?*, in ENVIRONMENTAL REGULATION OF OIL AND GAS 59, 63-72 (Zhiguo Gao ed., 1998).

<sup>10</sup> See Lawrence L.C. Lee, *Basle Accords as Soft Law: Strengthening International Banking Supervision*, 39 VA. J. INT’L L. 1, 3-4 (1998) (noting that international soft law must be adopted into domestic law to be legally binding).

<sup>11</sup> See Jędrzej George Frynas, *Corporate Social Responsibility in the Oil and Gas Sector*, 2 J. WORLD ENERGY L. & BUS. 178 (2009); Peter Utting & Kate Ives, *The Politics of Corporate Responsibility and the Oil Industry*, 2 ST. ANTONY’S INT’L REV. 11 (2006).

<sup>12</sup> ZHIGUO GAO, INTERNATIONAL PETROLEUM CONTRACTS: CURRENT TRENDS AND NEW DIRECTIONS 213 (1994).

<sup>13</sup> See PETER ROSENBLUM & SUSAN MAPLES, REVENUE WATCH INST., CONTRACTS CONFIDENTIAL: ENDING SECRET DEALS IN THE EXTRACTIVE INDUSTRIES 11-14 (2009), <http://www.revenuewatch.org/files/RWI-Contracts-Confidential.pdf>.

<sup>14</sup> *Id.* at 38.

<sup>15</sup> *Id.* at 12.

<sup>16</sup> From the following countries: Angola, Bangladesh, Brazil, Egypt, Equatorial Guinea, India, Liberia, Madagascar, Mozambique, Pakistan, Tanzania, Timor-Leste, Trinidad & Tobago, and Vietnam.

<sup>17</sup> Algeria, Angola, Azerbaijan, Bangladesh, Belize, Benin, Cambodia, Cameroon, China, Equatorial Guinea, Ethiopia, Georgia, Ghana, Guinea, India, Indonesia, Kazakhstan, The Kurdistan Region of Iraq, Mongolia, Peru, Russia, Senegal, Sudan, Timor-Leste, Uganda, and Venezuela.

<sup>18</sup> King & Spalding LLP, *An Introduction to Upstream Government Petroleum Contracts: Their Evolution and Current Use*, OIL GAS & ENERGY LAW, Mar. 2005, at 3, <http://www.ogel.org/article.asp?key=1730>.

<sup>19</sup> See generally Michel Kerf, *Concessions for Infrastructure 7* (World Bank, Working Paper No. 399, 1998), [http://tru.worldbank.org/Documents/Toolkits/concessions\\_fulltoolkit.pdf](http://tru.worldbank.org/Documents/Toolkits/concessions_fulltoolkit.pdf).

<sup>20</sup> See BERNARD TAVERNE, AN INTRODUCTION TO THE REGULATION OF THE PETROLEUM INDUSTRY: LAWS, CONTRACTS AND CONVENTIONS 24, 28 (1994); Thomas W. Waelde, *International Energy Investment*, 17 ENERGY L.J. 191, 200, 202 n.53 (1996).

<sup>21</sup> TAVERNE, *supra* note 20, at 27.

<sup>22</sup> *Id.* at 20-21.

<sup>23</sup> *Id.* at 133-35.

<sup>24</sup> Waelde, *supra* note 20, at 200.

<sup>25</sup> *Id.* at 202, n. 53.

<sup>26</sup> TAVERNE, *supra* note 20, at 24-25.

<sup>27</sup> Gao, *supra* note 2, at 35-37.

<sup>28</sup> CONTRACT FOR HYDROCARBON EXPLORATION & EXPLOITATION IN THE UCAYALI BASIN BETWEEN PERUPETRO S.A. & CHEVRON OVERSEAS PETROLEUM (PERU) LTD. (BLOCK 52) (Nov. 8, 1995) (Peru) (on file with the author).

<sup>29</sup> CONTRACT FOR THE EXPLORATION AND EXPLOITATION OF HYDROCARBONS BETWEEN BHP PETROLEUM (EXPLORATION) INC. AND SONATRACH (BOUKHECHBA AREA) (May 31, 1997) (Alg.) (on file with the author).

- <sup>30</sup> E.g., the 1994 Cairn Energy PRODUCTION SHARING CONTRACT BETWEEN THE GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH & BANGLADESH OIL, GAS & MINERAL CORPORATION, CAIRN ENERGY PLC AND HOLLAND SEA SEARCH BANGLADESH B.V. (BLOCK 16) (1994) (Bangl.) (on file with the author) mentions the applicability of Bangladeshi law to the implementation of the contract generally (art. 28.1), but the article specifically referring to the protection of the environment only mentions "generally accepted standards of the International Petroleum Industry" (art. 10.6). Similarly, the 2000 RSM PRODUCTION SHARING AGREEMENT FOR PETROLEUM EXPLORATION, DEVELOPMENT AND PRODUCTION BETWEEN BELIZE AND RSM PRODUCTION CORPORATION (AREA A) (Apr. 3, 2000) (Belize) (on file with the author) is governed by the laws of Belize (art. 29.1) but the section on environment (art. 23.1) refers only to "standards acceptable to practices of the International Petroleum Industry."
- <sup>31</sup> Ibibia Lucky Worika, *Environmental Concepts and Terms in Petroleum Legislation & Contracts: A Preliminary Study*, in ENVIRONMENTAL REGULATION OF OIL AND GAS 393, 398-401 (Zhiguo Gao ed., 1998).
- <sup>32</sup> *Id.* at 401-02.
- <sup>33</sup> *Id.* at 402.
- <sup>34</sup> AGREEMENT BETWEEN THE ROYAL GOVERNMENT OF CAMBODIA, CAMBODIAN NATIONAL PETROLEUM AGENCY, CHEVRON OVERSEAS PETROLEUM (CAMBODIA) LIMITED, MOECO CAMBODIA Co. LTD AND WOODSIDE SOUTH EAST ASIA PTY. LTD., art. 1.2 Definitions (Aug. 15, 2002) (Cambodia) (on file with the author).
- <sup>35</sup> *Environmental Principles*, AM. PETROLEUM INST., <http://www.api.org/aboutapi/principles/index.cfm> (last updated Mar. 7, 2011).
- <sup>36</sup> *Id.*
- <sup>37</sup> E.g., AM. PETROLEUM INST., *Recommended Practice 51R, Environmental Protection for Onshore Oil and Gas Production Operations and Leases* (2009), <http://publications.api.org/Exploration-Production.aspx>.
- <sup>38</sup> INT'L ASS'N OF OIL & GAS PRODUCERS, PRINCIPLES AND GUIDELINES FOR THE OIL & GAS INDUSTRY, Report No. 6.88/307 (2000), <http://www.ogp.org.uk/pubs/307.pdf>.
- <sup>39</sup> AUSTRAL. PETROLEUM PROD. & EXPLORATION ASS'N, APPEA CODE OF ENVIRONMENTAL PRACTICE (2008), [http://www.appea.com.au/images/stories/Policy\\_-\\_Environment/Code\\_of\\_Environmental\\_Practice.pdf](http://www.appea.com.au/images/stories/Policy_-_Environment/Code_of_Environmental_Practice.pdf).
- <sup>40</sup> See TC 67—Materials, Equipment and Offshore Structures for Petroleum, Petrochemical and Natural Gas Industries, INT'L ORG. FOR STANDARDIZATION, [http://www.iso.org/iso/standards\\_development/technical\\_committees/list\\_of\\_iso\\_technical\\_committees/iso\\_technical\\_committee.htm?commid=49506](http://www.iso.org/iso/standards_development/technical_committees/list_of_iso_technical_committees/iso_technical_committee.htm?commid=49506) (last visited Apr. 2, 2011). The Association of International Petroleum Negotiators also considered adopting model environmental clauses and standards for use in negotiating host-government instruments but ultimately discarded the proposal because it was viewed as too controversial by the Association's members.
- <sup>41</sup> Alexandra S. Wawryk, *Adoption of International Environmental Standards by Transnational Oil Companies: Reducing the Impact of Oil Operations in Emerging Economies*, 20 J. ENERGY & NAT. RESOURCES L. 402, 431 (2002).
- <sup>42</sup> CONCESSION AGREEMENT FOR THE EXPLORATION DEVELOPMENT AND PRODUCTION OF OIL AND NATURAL GAS cl. 21-1 (2001) (Braz.), [http://www.anp.gov.br/brnd/round9/geral/contratos/ContratoR3\\_eng.pdf](http://www.anp.gov.br/brnd/round9/geral/contratos/ContratoR3_eng.pdf).
- <sup>43</sup> AGREEMENT ON THE JOINT DEVELOPMENT AND PRODUCTION SHARING FOR THE AZERI AND CHIRAG FIELDS AND THE DEEP WATER PORTION OF THE GUNASHLI FIELD IN THE AZERBAIJAN SECTOR OF THE CASPIAN SEA, THE STATE OIL COMPANY OF THE AZERBAIJAN REPUBLIC- AMOCO CASPIAN SEA PETROLEUM LIMITED ET AL., art. 26.3 (Sept. 20, 1994) (Azer.), [http://www.bp.com/liveassets/bp\\_internet/bp\\_caspian/bp\\_caspian\\_en/STAGING/local\\_assets/downloads\\_pdfs/pq/ACG\\_PSA.pdf](http://www.bp.com/liveassets/bp_internet/bp_caspian/bp_caspian_en/STAGING/local_assets/downloads_pdfs/pq/ACG_PSA.pdf).
- <sup>44</sup> NAT'L OIL CO. OF LIBERIA, MODEL PRODUCTION SHARING CONTRACT, art. 6.5 (2009), <http://www.molme.gov.lr/doc/MODEL%20PRODUCTION%20SHARING%20CONTRACT.pdf>.
- <sup>45</sup> Lee, *supra* note 10.
- <sup>46</sup> See, e.g., Vingradov *supra* note 3, at 98-115.
- <sup>47</sup> MODEL PRODUCTION SHARING CONTRACT (1994) (Mauritania), <http://resources.revenuewatch.org/sites/default/files/MauritaniaContracttypeAngl.pdf>.
- <sup>48</sup> SHAH DENIZ PSA EXCERPT, GAS EXPORT PROJECT STAGE 1 DEVELOPMENT, ENVIRONMENTAL & SOCIO-ECONOMIC IMPACT ASSESSMENT, Appendix I art. 26.1 (Aug. 2002) (Azer.), [http://www.bp.com/liveassets/bp\\_internet/bp\\_caspian/bp\\_caspian\\_en/STAGING/local\\_assets/downloads\\_pdfs/o/SD\\_English\\_ESIA\\_Main\\_ESIA\\_Content\\_SD\\_Appendix\\_01\\_-xtract\\_En\\_.pdf](http://www.bp.com/liveassets/bp_internet/bp_caspian/bp_caspian_en/STAGING/local_assets/downloads_pdfs/o/SD_English_ESIA_Main_ESIA_Content_SD_Appendix_01_-xtract_En_.pdf).
- <sup>49</sup> ANDREA SHERBERG, STABILIZATION CLAUSES AND HUMAN RIGHTS, at vii (2008), [http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/p\\_StabilizationClausesandHumanRights/\\$FILE/Stabilization+Paper.pdf](http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/p_StabilizationClausesandHumanRights/$FILE/Stabilization+Paper.pdf).
- <sup>50</sup> See generally PETER D. CAMERON, ASS'N OF INT'L PETROLEUM NEGOTIATORS, STABILISATION IN INVESTMENT CONTRACTS AND CHANGES OF RULES IN HOST COUNTRIES: TOOLS FOR OIL & GAS INVESTORS (2006), [http://lba.legis.state.ak.us/sga/doc\\_log/2006-07-05\\_aipn\\_stabilization-cameron\\_final.pdf](http://lba.legis.state.ak.us/sga/doc_log/2006-07-05_aipn_stabilization-cameron_final.pdf); Abdullah Al Faruque, *The Rationale and Instrumentalities for Stability in Long-Term State Contracts: The Context for Petroleum Contracts* (2006) 7 J. WORLD INV. & TRADE 85; A.F.M. Maniruzzaman, *The Pursuit of Stability in International Energy Investment Contracts: A Critical Appraisal of the Emerging Trends* 1 J. WORLD ENERGY L. & BUS. (2008) 121.
- <sup>51</sup> SHERBERG, *supra* note 49.
- <sup>52</sup> See *id.* at 17.
- <sup>53</sup> PRODUCTION SHARING AGREEMENT IN RESPECT OF THE NORTH CASPIAN SEA (KASHAGAN) AMONG AGIP CASPIAN SEA B.V.; BG EXPLORATION LIMITED; BP KAZAKSTAN LIMITED; DEN NORSKE STATS OLJESELSKAP A.S.; MOBIL OIL KAZAKSTAN INC.; SHELL KAZAKSTAN DEVELOPMENT B.V.; TOTAL EXPLORATION PRODUCTION KAZAKSTAN; JSC KAZAKSTANCASPIANSHELF; THE REPUBLIC OF KAZAKSTAN AND JSC NATIONAL OIL AND GAS COMPANY KAZAKOIL, art 40.2 (Nov. 18, 1997) (Kaz.) (on file with the author).
- <sup>54</sup> Lorenzo Cotula, *Reconciling Regulatory Stability and Evolution of Environmental Standards in Investment Contracts: Toward a Rethink of Stabilization Clauses*, 1 J. WORLD ENERGY L. & BUS. 158, 174 (2008).
- <sup>55</sup> See generally *id.*; Kyla Tienhaara, *Unilateral Commitments to Investment Protection: Does the Promise of Stability Restrict Environmental Development?* 17 Y.B. INT'L ENVTL. L. 139 (2008).
- <sup>56</sup> See, e.g., WORLD BANK, ENVIRONMENTAL GOVERNANCE IN OIL-PRODUCING DEVELOPING COUNTRIES 1 (Eleodoro Alba ed., 2010), [http://siteresources.worldbank.org/EXTOGMC/Resources/336929-1266963339030/eifd17\\_environmental\\_governance.pdf](http://siteresources.worldbank.org/EXTOGMC/Resources/336929-1266963339030/eifd17_environmental_governance.pdf).
- <sup>57</sup> *Id.*
- <sup>58</sup> See generally MALTA ENV'T & PLANNING AUTHORITY, ENVIRONMENTAL IMPACT ASSESSMENTS (1994), <http://www.mepa.org.mt/lpgdocuments/policies/eia.pdf>.
- <sup>59</sup> KASHAGAN PSA *supra* note 53, at art. 5.2b.
- <sup>60</sup> MINISTRY OF PETROLEUM AND NATURAL GAS, MODEL PRODUCTION SHARING CONTRACT (SEVENTH OFFER OF BLOCKS), art. 14.5 (2007) (India), <http://petroleum.nic.in/nelp3.pdf>.
- <sup>61</sup> See, e.g., *Arctic National Wildlife Refuge, 1002 Area, Petroleum Assessment, 1998, Including Economic Analysis*, U.S. GEOLOGICAL SURVEY, <http://pubs.usgs.gov/fs/fs-0028-01/> (last modified Dec. 14, 2005).
- <sup>62</sup> See generally *Arctic National Wildlife Refuge*, DEFENDERS OF WILDLIFE, [http://www.defenders.org/programs\\_and\\_policy/habitat\\_conservation/](http://www.defenders.org/programs_and_policy/habitat_conservation/)



federal\_lands/national\_wildlife\_refuges/threats/arctic/index.php (last visited Apr. 2, 2011).

<sup>63</sup> OFFICE OF NATIONAL MINES AND STRATEGIC INDUSTRIES, MODEL OFFSHORE PRODUCTION SHARING CONTRACT, art. 37.6 (2006) (Madag.), <http://www.omnis-madagascar.mg/contrat/offshore%20contract.pdf> (last visited Apr. 2, 2011).

<sup>64</sup> DRAFT PRODUCTION SHARING AGREEMENT FOR PETROLEUM EXPLORATION, DEV. AND PRODUCTION IN THE REPUBLIC OF UGANDA, UGANDA-HERITAGE OIL AND GAS LIMITED, art. 5.3 (Uganda), [http://www.platformlondon.org/carbonweb/documents/uganda/leaked\\_Uganda\\_PSA\\_Block3A\\_Heritage\\_part2.pdf](http://www.platformlondon.org/carbonweb/documents/uganda/leaked_Uganda_PSA_Block3A_Heritage_part2.pdf) (last visited Apr. 2, 2011).

<sup>65</sup> GOV'T OF THE REPUBLIC OF MOZAMBIQUE, EXPLORATION AND PRODUCTION CONCESSION CONTRACT, art. 27.8 (2007) (Mozam.), <http://www.inp.gov.mz/content/download/192/790/file/Mozambique%20Model%20EPC-Public-April%202007.pdf> (last visited Apr. 2, 2011).

<sup>66</sup> PRODUCTION SHARING CONT. FOR TAQ TAQ AND KEWA CHIRMILA AREAS IN THE KURDISTAN REGION, KURDISTAN REGIONAL GOV'T OF IRAQ-GENEL ENTERGY INTERNATIONAL LIMITED-ADDAX PETROLEUM INTERNATIONAL LIMITED, art. 2.8 (Feb. 26, 2008) (Iraq), [http://www.krg.org/uploads/documents/02\\_GeneI\\_Contract.pdf](http://www.krg.org/uploads/documents/02_GeneI_Contract.pdf).

<sup>67</sup> MINISTRY OF ENERGY, PRODUCTION SHARING CONTRACT (2008) (Kenya), [http://www.nockenya.co.ke/images/File/RECENT\\_DRAFT\\_PSC\\_\(3\).DOC](http://www.nockenya.co.ke/images/File/RECENT_DRAFT_PSC_(3).DOC).

<sup>68</sup> BANGLADESH OIL, GAS, & MINERAL CORP., MODEL PRODUCTION SHARING CONTRACT, art. 9.2 (2008) (Bangl.), <http://www.petrobangla.org.bd/MODEL%20PRODUCTION%20SHARING%20CONTRACT%202008-FEBRUARY.pdf>.

<sup>69</sup> WORLD BANK, REGULATION OF ASSOCIATED GAS FLARING AND VENTING: A GLOBAL OVERVIEW AND LESSONS 1 (2004), [http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2004/07/16/000012009\\_20040716133951/Rendered/PDF/295540RegulatiIaring0no10301public1.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2004/07/16/000012009_20040716133951/Rendered/PDF/295540RegulatiIaring0no10301public1.pdf).

<sup>70</sup> See generally MIDDLE E. & N. AFRICA FORUM ON FLARING REDUCTION & GAS UTILIZATION: ADDRESSING THE IMBALANCE BETWEEN GAS DEMAND AND SUPPLY, <http://www.menaflaringforum.org> (last visited Apr. 19, 2011).

<sup>71</sup> A.S. Abdulkareem, *Evaluation of Ground Level Concentration of Pollutant Due to Gas Flaring by Computer Simulation: A Case Study of Niger Delta—Area of Nigeria*, LEONARDO ELEC. J. OF PRACTICES & TECHS., Jan–June 2005 at 29, 30, [http://lejpt.academicdirect.org/A06/29\\_42.htm](http://lejpt.academicdirect.org/A06/29_42.htm).

<sup>72</sup> See generally *Global Gas Flaring Reduction Partnership*, WORLD BANK, <http://www.worldbank.org/ggfr> (last updated Mar. 21, 2011).

<sup>73</sup> INT'L ASS'N OIL & GAS PRODUCERS, *supra* note 5, at 3, 28.

<sup>74</sup> BANGLADESH OIL, GAS, & MINERAL CORP., MODEL PRODUCTION SHARING CONTRACT, art. 15.3 (2008) (Bangl.), <http://www.petrobangla.org.bd/MODEL%20PRODUCTION%20SHARING%20CONTRACT%202008-FEBRUARY.pdf>.

<sup>75</sup> *Id.*

<sup>76</sup> PRODUCTION SHARING CONTRACT, PERUSAHAAN PERTAMBANGAN MINYAK DAN GAS BUMI NEGARA-APEX, LTD., art. 6.2.1 (Dec. 4, 1997) (Indon.), <http://agreements.realdealdocs.com/Production-Sharing-Agreement/PRODUCTION-SHARING-CONTRACT-1005914/>.

<sup>77</sup> RSM PSA *supra* note 30, at art. 14.1.

<sup>78</sup> PRODUCTION SHARING AGREEMENT BETWEEN SONANGOL, U.E.E., TEXACO EXPLORATION ANGOLA SUMBE INC., ESSO EXPLORATION & PRODUCTION ANGOLA (BLOCK 22) LIMITED & BHP PETROLEUM (ANGOLA 22) INC. (BLOCK 22), art. 29.5 (Dec. 16, 1998) (Angl.) (on file with the author).

<sup>79</sup> DRAFT PRODUCTION SHARING AGREEMENT FOR PETROLEUM EXPLORATION, DEVELOPMENT AND PRODUCTION IN THE REPUBLIC OF UGANDA BY AND BETWEEN THE GOVERNMENT OF THE REPUBLIC OF UGANDA AND HERITAGE OIL AND GAS LIMITED,

art. 19.3 (Jan. 27, 2007) (Uganda), [http://www.platformlondon.org/carbonweb/documents/uganda/leaked\\_Uganda\\_PSA\\_Block3A\\_Heritage\\_part1.pdf](http://www.platformlondon.org/carbonweb/documents/uganda/leaked_Uganda_PSA_Block3A_Heritage_part1.pdf).

<sup>80</sup> See, e.g., KASHAGAN PSA *supra* note 53, at art. 21.1d.

<sup>81</sup> INT'L ASS'N OIL & GAS PRODUCERS, *supra* note 5, at 2, 23.

<sup>82</sup> See, e.g., KASHAGAN PSA *supra* note 53, at art. 5.2c; PRODUCTION SHARING CONTRACT BETWEEN THE GOVERNMENT AND OIL AND NATURAL GAS CORPORATION LIMITED (ONGC), RELIANCE INDUSTRIES LTD., & ENRON OIL & GAS INDIA LTD. (TAPT BLOCK), art. 12.6 (Dec. 22, 1994) (India) (on file with the author).

<sup>83</sup> See, e.g., AZERI AND CHIRAG FIELDS PSA *supra* note 43, at art. 26.2.

<sup>84</sup> TIMOR-LESTE INST. FOR DEV. MONITORING & ANALYSIS, MODEL PRODUCTION SHARING CONTRACT UNDER THE PETROLEUM ACT (Timor-Leste), <http://www.lao-hamutuk.org/Oil/PetRegime/PSC%20model%20270805.pdf> (last visited Apr. 2, 2011).

<sup>85</sup> PETROLEUM AGREEMENT, REPUBLIC OF GHANA-TULLOW GHANA LIMITED-SABRE OIL AND GAS LIMITED-KOSMOS ENERGY GHANA HC, art. 17.7 (Mar. 10, 2006) (Ghana), <http://sec.edgar-online.com/kosmos-energy-ltd/s-1a-securities-registration-statement/2011/03/03/section58.aspx>.

<sup>86</sup> See generally Tim Padgett & Stephan Kuffner, *Chevron v. Ecuador: Will the Plaintiffs Get Paid?*, TIME, Feb. 22, 2011, <http://www.time.com/time/world/article/0,8599,2053075,00.html>.

<sup>87</sup> See generally TIMOR-LESTE INST., *supra* note 84.

<sup>88</sup> *Id.* at art. 1.5.

<sup>89</sup> UNEP Secretariat, *Liability & Compensation Regimes Related to Environmental Damage* (2002); see also A.E. Boyle, *Globalising Environmental Liability: The Interplay of National and International Law*, 14 J. ENVTL. L. 3, 14 (2005).

<sup>90</sup> See generally GOV'T OF THE REPUBLIC OF MOZAMBIQUE, *supra* note 65.

<sup>91</sup> See *id.* at art. 19.1.

<sup>92</sup> *Id.*

<sup>93</sup> Even in the absence of explicitly listed exceptions within the liability clause, the extremely common “force majeure” clause provides a defense for non-compliance.

<sup>94</sup> GOVERNMENT OF CAMBODIA *supra* note 34, at art. 20.7d.

<sup>95</sup> RSM PSA *supra* note 30, at art. 27.3.

<sup>96</sup> See TIMOR-LESTE INST., *supra* note 84, at art. 19.2.

<sup>97</sup> *Id.*

<sup>98</sup> See generally Zhiguo Gao, *International Law on Offshore Abandonment: Recent Developments, Current Issues and Future Directions*, in ENVIRONMENTAL REGULATION OF OIL & GAS (Zhiguo Gao ed., 1998); Agnieszka Rawa et al., *Sustainable Decommissioning of Oil Fields and Mines* (World Bank Issues Paper, 2009), [http://siteresources.worldbank.org/INTOGMC/Resources/wb\\_ogm\\_issues\\_paper.pdf](http://siteresources.worldbank.org/INTOGMC/Resources/wb_ogm_issues_paper.pdf).

<sup>99</sup> OIL EXPLORATION AND EXPLOITATION CONTRACT (OFFSHORE NO. 1 AND SEME BLOCK) BETWEEN THE GOVERNMENT AND ADDAX PETROLEUM – ABACAN BENIN CONSORTIUM, art.18.12 (Feb. 1, 1997) (Benin), <http://www.secinfo.com/duvJ5.68m.j.htm>.

<sup>100</sup> *Id.*

<sup>101</sup> See Rawa, *supra* note 98, at 36-46.

<sup>102</sup> MODEL PRODUCTION SHARING AGREEMENT (2008) (Tanz.), <http://resources.renewwatch.org/sites/default/files/Model%20Production%20Sharing%20Agreement%202008.pdf> (last visited Apr. 2, 2011).

<sup>103</sup> Gao *supra* note 12.