Liability for Transnational Pollution Arising from Offshore Oil Development: A Methodological Approach

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Legend has it that Merlin turned young Arthur into an owl so that while high in the air he might see that national boundaries are but creations of man. Today more prosaic and more damaging events point out that nature respects no boundary. Transnational pollution is such an event.

Transnational pollution\(^1\) originates in one nation, moves through a natural medium such as air or water, and imposes harmful effects in another nation.\(^2\) Examples include "acid rain"\(^3\) and the salt of Alsace mines carried by the Rhine to Holland.\(^4\) This Comment describes the

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problem of transnational pollution arising from offshore oil development and focuses on prospective compensation schemes for relieving victims of such pollution.5

It is an opportune time to reflect upon the means by which compensation may be prospectively ensured. Offshore oil spill incidents of the last decade have demonstrated that tremendous damage can accompany catastrophic spills. Furthermore, although the United Nations Environmental Programme (UNEP),6 through its Regional Seas Program,7 has established conventions for the Baltic,8 the Mediterranean,9 and the region surrounding Kuwait10 calling for signatory nations to undertake jointly to develop and accept rules concerning responsibility for compensation,11 special arrangements have not yet

5. Only the problem of designing prospective compensation schemes will be considered herein. For general discussions of the need for international cooperation to address other aspects of the problem of transnational pollution, see J. SCHNEIDER, WORLD PUBLIC ORDER OF THE ENVIRONMENT (1979); Handl, The Principle of “Equitable Use” as Applied to Internationally Shared Natural Resources: Its Role in Resolving Potential International Disputes Over Transfrontier Pollution, 14 REVUE BELGE DE DROIT INTERNATIONAL 40 (1978-79); Kiss, International Co-operation for the Control of Accidental Marine Pollution, 23 GER. Y.B. INT’L L. 231 (1980). The analysis of this Comment, although concerned specifically with pollution arising from offshore oil development, may be extended to address other types of accidental regional transnational pollution.


11. Baltic Convention, supra note 8, art. 17; Mediterranean Convention, supra note 9, art. 12; Kuwait Convention, supra note 10, art. 13.

UNEP’s Regional Seas Programme has identified seven additional marine regions for which similar conventions will be drafted. For a map of the regions identified, see Borgese, The Law of the Sea, 248 SCI. AM. 42, 45 (1983).
been developed outside the North Sea region.\textsuperscript{12}

The problem is primarily a regional one because the nations of the potentially affected geographic area\textsuperscript{13} can regulate those persons who might be responsible and represent those interests that might be damaged.\textsuperscript{14} Because the problem of transnational pollution from offshore oil activities can be approached regionally, schemes for the compensation of victims can be tailored to the needs and objectives of each region.\textsuperscript{15} It is with this assumption in mind that this Comment begins an inquiry into what the nations of a region should consider in designing and negotiating a prospective compensation scheme.

The Comment first describes the risk of pollution and the legal and political context in which the risk exists. It then outlines three basic methods for structuring a compensation scheme, discussing how each has been applied and the problems experienced with each. The methods are examined in light of the objectives of a compensation scheme, and an attempt is made to relate the choice of method to selected characteristics of the region in which it is to be implemented.\textsuperscript{16}

\textsuperscript{12} For a discussion of coverage within the North Sea area, see text accompanying infra notes 161-165, 197-205.

\textsuperscript{13} A “region” is defined as “an area of the earth’s surface which is set apart from other areas by the existence of one or more distinctive characteristics. The identifying element may be physical in nature . . . (it) may also consist of a common interest or problem.” Alexander, \textit{Regional Arrangements in the Oceans}, 71 AM. J. INT’L L. 84, 88 (1977). The physical marine regions of the world are described \textit{id.} at 89-92.

\textsuperscript{14} Whether an international problem should be approached on a regional or global level is a complex issue. In contrast to the regional approach to compensation for pollution from offshore oil activities, pollution from vessels has been addressed globally. Vessel pollution has been approached globally in part to avoid a balkanization of construction standards and in part because the registry of vessels and the recognized freedom of navigation implicates the interests of virtually all nations. See Fitch, \textit{Unilateral Action versus Universal Evolution of Safety and Environmental Protection Standards in Maritime Shipping of Hazardous Cargoes}, 20 HARV. INT’L L. J. 127 (1979). Likewise not all aspects of transnational pollution arising from offshore oil activities should be approached regionally. In particular, drillship construction standards are probably best negotiated globally so as to ensure flexibility in drillship siting.


\textsuperscript{16} This Comment does not directly explore political, cultural or historical factors which may act as “divisive forces” among the states of a region. For a discussions of these factors, see J. NYE, \textit{PEACE IN PARTS, INTEGRATION AND CONFLICT IN REGIONAL ORGANIZATION} (1971); B. RUSSETT, \textit{INTERNATIONAL REGIONS AND THE INTERNATIONAL SYSTEM: A STUDY IN POLITICAL ECOLOGY} (1967); Alexander, \textit{supra} note 13, at 86-87. Little empirical work has been done on these aspects of international organization, and the precise influence of many factors on a region’s approach to structuring a compensation scheme is still speculative. Cultural similarity doubtless has a salutary effect on interactions between nations, however. See I. VAN LIER, \textit{supra} note 3, at 189; Henry, \textit{Transboundary Pollution and the International Joint Commission}, in \textit{COMMON BOUNDARY/COMMON PROBLEMS: THE ENVIRONMENTAL CONSEQUENCES OF ENERGY PRODUCTION} 47 (1982) [hereinafter cited as COMMON BOUNDARY/COMMON PROBLEMS].
Finally, the Comment considers the relative promise each method holds forth for resolving the compensation problem.

I

THE PROBLEM

A. The Nature of the Risk

I. Perspective

The history of offshore oil development is one of a relatively new industry growing and adapting at a breakneck pace. Initially, the offshore oil industry merely applied land-based technology in the marine environment. The first offshore wells were drilled from wooden piers in Summerland, California, in 1896.\(^{17}\) Open water drilling commenced off the Louisiana coast in 1947 from a barge anchored in twenty feet of water.\(^{18}\)

Since these efforts, a seemingly ever-increasing world appetite for oil has offered private enterprise enormous market incentives to step up development of the resource. The offshore oil industry has been ingenious and persistent in the face of enormous technical problems,\(^{19}\) and governments, influenced by the possibility of tremendous revenues, have often encouraged offshore oil development.\(^{20}\) These motivating forces have quickly led the industry into deeper waters and harsher environments where the application of land-based technology no longer suffices.\(^{21}\)

In this observation lies a recurring theme in the history of the offshore oil industry: demand draws development to the very limits of

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\(^{20}\) See M. Jones & F. Godwin, The Oil Rush 34-36 (1976); Browne, Mexico is Rushing to Cash in on Oil Boom Despite Hazard, N.Y. Times, Oct. 8, 1979, § A, at 2, col. 3.

\(^{21}\) One industry expert has described the current terrain of the offshore oil industry as follows:

- Hostile environments which the petroleum industry has confronted include: pack ice in the Artic, moving ice in Cook Inlet, icebergs off Greenland, hurricane storm waves of 70 feet off Ireland, . . . currents of 4 knots offshore Thailand, moving ocean floor sediments in South America, tides of 30 ft. offshore Canada and winds of 100 knots in the North Sea.

Hammett, supra note 19, at 67. See also Lueck, Oil Drilling Offshore, N.Y. Times, Nov. 4, 1982, at 32, col. 1.
technology and expertise. This theme is the backdrop to the many technological triumphs of ocean engineers. It is also a source of risk: risk of personal injury, risk of loss of capital investment, and risk of pollution.

Several forms of pollution arise from offshore oil activities. Generally, these forms are classified as either operational or accidental. Operational pollution includes discharges of oily water from oil storage spaces on drilling platforms, discharges of production water separated from the crude oil, constant low level discharges of drilling mud, pollution of the air, and the dumping of unwanted materials from platforms. Accidental spillage of offshore oil ranges from small virtually chronic discharges to uncontrolled releases of tremendous proportions ("blowouts"). It is the latter catastrophic releases, which

22. See infra text accompanying notes 48-55.
23. The IXTOC I blowout exemplifies these risks. The pollution risk was realized by a spill of 126 million gallons. The capital risk was realized in the ninety million dollar loss of crude oil revenues, infra note 193, and in the scuttling of the twenty-two million dollar drilling platform. Ross, Ross, Lepine & Langtry, IXTOC I Oil Blowout, 4 SPILL TECH. NEWSLETTER 245, 245 (1979) [hereinafter cited as IXTOC I]. It is unclear whether the risk of personal injury was realized. Sixty-three crewmen safely abandoned the rig, but they reported one person killed. The company operating the rig claimed there was no loss of life. Se Incendio una Plataforma Petrolera Frente a Campeche; no hay Victimas, Exelsior (Mexico City), June 4, 1979, at 4, col. 1.
25. For a general discussion of this type of oil pollution, see Menzie, supra note 24.
26. V. Fitzmaurice, supra note 24, at 49.
27. NATIONAL ACADEMY OF SCIENCES, PETROLEUM IN THE MARINE ENVIRONMENT 6 (1975).
28. Energy Under the Oceans, supra note 18, at 141.
31. Catastrophic spillage of offshore oil is a result of an uncontrolled venting, or "blowout" of the natural pressure at which crude oil is contained underground. This natural pressure may normally be controlled during drilling operations by either counterbalancing the pressure within the well or sealing the pressure within the well. It is typically utilized to aid the extraction of the crude oil from the deposit during the initial production phase. Specifically, oil wells are drilled by the use of specially designed and hardened bits at the end of a rotating string of drillpipe. Drilling mud is pumped down through the center of the drill (the drill string), out through the bit, and back to the surface through the space between the drill and the well wall (the annular space). The drilling mud is monitored so
create the most visible and critical transnational problem, that are the primary concern of this paper.

2. The Magnitude of the Risk

Historically, pollution from offshore oil development was not considered a significant problem. For example, in response to a 1963 Intergovernmental Maritime Consultative Organization (IMCO) questionnaire concerning pollution, the United States stated that “there is no evidence that offshore drilling has, in any way, contributed to the pollution of the sea.” Published statistics likewise suggest that offshore oil activities are minor contributors to pollution of the sea by oil. The National Academy of Sciences estimated in 1975 that offshore oil production accounted for only 1.3 percent of the estimated oil input to the sea. Similarly, the U.S. Coast Guard’s figures for U.S. waters (see Table I) show oil spillage from offshore production to be relatively insignificant. Such statistics, however, do not tell the whole story.

Published statistics may not accurately reflect the contribution of offshore oil activities to pollution of the sea by oil because major spills are quite rare, and none may have occurred during the time period that its weight and flow rate maintain a pressure sufficient to balance any natural underground pressure that would force oil upwards uncontrollably.

Failing such a balance, drillers attempt to seal the well. A blowout preventer (BOP) stack, a device whereby the well top may be sealed, is a standard part of the well assembly on the sea bottom. The BOP can contain the pressure by several means, depending upon the circumstances. First, it can close around the drill string, thus sealing off the annular space (“the annular preventor”). If this is insufficient, BOP pipe rams can seal off the entire space if the drill string has been withdrawn mechanically or if it has been expelled by the blowout itself. Finally, the BOP shear (blind) rams can seal the entire space by shearing through anything (including the drill string) which is obstructing the hole.

For discussions of the techniques used to control pressure within wells, see generally Energy Under the Oceans, supra note 18, at 44; Crockford, Gardner & Worrall, Exploratory Drilling Well Control Practices, in 2 Petroleum, supra note 30, at 5; Warner, Spill Prevention in Offshore Petroleum Producing Facilities, in American Petroleum Institute, Prevention and Control of Oil Spills 31 (1973).

32. Intergovernmental Maritime Consultative Organization, Pollution of the Sea by Oil 103 (1964).
33. National Academy of Sciences, supra note 27.
34. The Coast Guard has published a yearly summary of oil pollution statistics since 1971. Off. of Marine Env’t and Systems, U.S. Coast Guard, U.S. Dep’t of Transp., 1971 Polluting Incidents in and Around U.S. Waters 2 [hereinafter cited as Polluting Incidents]. The years 1971 and 1972 are not included in Table I because the statistical format of those years differed from that used in the years here represented. These statistics are available from the Office of Marine Environment and Systems, U.S. Coast Guard (G-WEP-4), Washington, D.C. 20593.
35. The blowout rate has been estimated to be “one for each 500 holes drilled.” Energy Under the Oceans, supra note 18, at 114. Catastrophic oil spills accompany only a
### Table I

**Recorded Oil Input to U.S. Waters from Offshore Production**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Incidents</th>
<th>% of Total Incidents</th>
<th>Volume (Gallons)</th>
<th>% of Total Volume</th>
<th>Total Volume From All Sources (Gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>1,955</td>
<td>14.7</td>
<td>875,202</td>
<td>3.6</td>
<td>24,314,918</td>
</tr>
<tr>
<td>1974</td>
<td>2,006</td>
<td>14.0</td>
<td>153,771</td>
<td>1.0</td>
<td>16,916,308</td>
</tr>
<tr>
<td>1975</td>
<td>1,243</td>
<td>12.3</td>
<td>78,217</td>
<td>0.5</td>
<td>14,439,597</td>
</tr>
<tr>
<td>1976</td>
<td>1,358</td>
<td>10.7</td>
<td>247,732</td>
<td>0.8</td>
<td>33,851,830</td>
</tr>
<tr>
<td>1977</td>
<td>1,118</td>
<td>8.7</td>
<td>81,157</td>
<td>0.4</td>
<td>19,899,988</td>
</tr>
<tr>
<td>1978</td>
<td>799</td>
<td>6.7</td>
<td>85,750</td>
<td>0.6</td>
<td>14,343,996</td>
</tr>
<tr>
<td>1979</td>
<td>610</td>
<td>5.7</td>
<td>93,318</td>
<td>1.0</td>
<td>9,091,637</td>
</tr>
<tr>
<td>1980</td>
<td>631</td>
<td>6.9</td>
<td>118,141</td>
<td>1.2</td>
<td>15,093,125</td>
</tr>
<tr>
<td>1981</td>
<td>819</td>
<td>9.8</td>
<td>33,610</td>
<td>0.2</td>
<td>19,637,913</td>
</tr>
</tbody>
</table>

Sources:
1. U.S. Coast Guard, 1973 Polluting Incidents In And Around U.S. Waters.
2. U.S. Coast Guard, 1974 Polluting Incidents In And Around U.S. Waters.
5. U.S. Coast Guard, 1977 Polluting Incidents In And Around U.S. Waters, COMDTINST M16450.2
7. U.S. Coast Guard, 1980-81 Polluting Incidents In And Around U.S. Waters, COMDTINST M164450.20.

covered in the geographic area represented. For example, the U.S.C.G. did not begin compiling its statistics until 1971, two years after the huge Santa Barbara spill.36

Additionally, catastrophic spills are so large in volume that a single occurrence would overwhelm a typical annual statistical summary. The unusually high spill volume for 1976 shown in Table I is in large part due to the 7.5 million gallon spill of a rather small oil tanker, the

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ARGO MERCHANT. Furthermore, the total discharge volumes for any year pale beside the amount of oil released in the world's largest spill to date, the IXTOC I blowout. In June of 1979, a blowout at the exploratory well IXTOC I released over three million barrels (126 million gallons) of oil into waters off the coast of Campeche, Mexico. If a spill the size of IXTOC I had been included in the 1979 statistics, it would have accounted for ninety-four percent of all oil spilled in U.S. waters. Statistics thus do not reflect that, while the probability of a catastrophic spill is low, the volume and damage are potentially enormous.

The effects of catastrophic oil spills on the environment and society are not fully understood. Yet even if the long-range environmental effects are in doubt, it is clear that the high concentrations of oil present after a catastrophic spill can cause severe damage. After the

37. 1976 POLLUTING INCIDENTS, supra note 34, at 3.
38. How IXTOC I Was Finally Killed, OCEAN INDUSTRY, Apr. 1980, at 12. The IXTOC I incident began when the semi-submersible drilling rig lost mud circulation while drilling at a depth of 3,616 meters in 51.5 meters of water. The content and flow rate of returning mud is virtually the only indication of what is happening deep within a well. ENERGY UNDER THE OCEANS, supra note 18, at 115. Operators eventually decided to remove the pipe and change the drilling bit. The pipe was pulled out for six and a half hours without incident, but when the drill collars reached the floor of the rig, the platform began to lurch. The rig operator attempted to seal the well, but the tremendous pressure of the oil and gas forced the oil and gas up through the drill collar to the rig. The escaping flow ignited, and the crew was evacuated. The flow of oil from the well continued for nine months and 21 days, and was stopped only after the drilling of two relief wells and the installation of three cement plugs totalling 2,885 feet in length. See generally IXTOC I, supra note 23 at 245; How IXTOC I Was Finally Killed, OCEAN INDUSTRY, Apr. 1980, at 12.
39. Rare events involving great costs occur in many contexts. The science of probability focuses in such instances on the "payoff" of the event, a term borrowed from gambling. The "payoff" is the likelihood of occurrence evaluated in relation to the results upon occurrence. See generally D. HOEL, S. STONE & C. PORT, INTRODUCTION TO PROBABILITY THEORY 82 (1971).

As concern should accompany rare events involving great costs, Pascal, in considering the existence of God, argued that belief should accompany unprovable assertions entailing infinite benefits. "But there is here an infinity of an infinitely happy life to gain, a chance of gain against a finite number of chances of loss, and what you stake is finite." B. PASCAL, PENSEES III (1670) (W.F. Trotter trans. 1950), reprinted in 33 GREAT BOOKS OF THE WESTERN WORLD 215 (1952).
40. A range of effects may accompany a major spill:
These effects are clearly very different in character, ranging from the biological to the aesthetic. Some are of immediate practical significance to society; others initially appear to be unimportant but may prove to be cumulative and potentially significant in the long-term. In many instances (as in the loss of less tangible amenity and aesthetic attributes of the environment) the costs simply cannot be measured in conventional economic terms.
42. For a summary of the impact of selected major oil pollution incidents, see I. MANNERS, supra note 40, at 96-99.
IXTOC I spill, for example, fishing and business interests within Texas alone filed suits for $355 million in damages.\textsuperscript{43} Within Mexico, the harvest of Campeche shrimp reportedly diminished by fifty percent.\textsuperscript{44}

Non-commercial interests are also affected. Offshore spills have destroyed large numbers of seabirds, marine mammals, and other coastal wildlife.\textsuperscript{45} A human health hazard may even arise: in January of 1980, a blowout off the coast of Nigeria polluted the islands and channels of the Niger Delta, ruining drinking water and food supplies and forcing hundreds of people to leave their villages in search of provisions and shelter.\textsuperscript{46}

Some victims, such as the larger industries, may have the financial resources and sophistication to pursue transnational legal remedies. Others, such as small-scale fishermen and coastal refugees, probably have neither the time nor the money to seek compensation through elaborate mechanisms. Wildlife or future generations may not even have a legal voice with which to seek compensation.\textsuperscript{47}

3. The Future of the Risk

Offshore areas are an increasingly important source of oil and gas. From 1972 to 1980, offshore oil production increased from approximately eighteen to approximately twenty-three percent of total world production.\textsuperscript{48} Moreover, it is expected that this trend will continue.\textsuperscript{49}

\textsuperscript{43} Counting Costs of an Oil Spill, Newsweek, Aug. 4, 1980, at 8.
\textsuperscript{44} Gonzales, Abandonan las Costas de Campeche los Camaroneros: Acuña Martínez, Exelsior (Mexico City), Aug. 2, 1979, at 9A, col. 6. For a general discussion of the effect of oil spills on fisheries, see Shelton, supra note 30; Scarratt, Consequences of Offshore Oil Production on Fish Stocks and Fishing Operations, 6 SPILL TECH. NEWSLETTER 12 (1981).
\textsuperscript{45} I. Manners, supra note 40, at 126; Bourne, Oil Pollution and Bird Populations, in The Biological Effects of Oil Pollution on Littoral Communities 99 (J. McCarthy & R. Arthur eds. 1968).
\textsuperscript{46} Nigerian Oil Blowout Forces Fishermen from their Homes, The Times (London), Mar. 3, 1980, at 7, col. 2.
\textsuperscript{47} For a pioneering discussion of the legal rights of wildlife and natural objects, see generally Stone, Should Trees have Standing?—Toward Legal Rights for Natural Objects, 45 SO. CAL. L. REV. 450 (1972). See also Sierra Club v. Morton, 405 U.S. 727, 741-55 (1972) (Douglas, J., dissenting).
\textsuperscript{48} 3 OCEAN Y.B. 540 (E. Borgese & N. Ginsburg eds. 1982). For a regional summary of the growth of offshore oil production, see id. at 541.
\textsuperscript{49} In 1980, the Council on Environmental Quality reached the following conclusion about offshore oil development: "[D]riven by expanding GNP's, population needs, and technological advances, this increased usage (of energy) will certainly aggravate the already serious problems of coastal zone degradation by fossil fuel pollutants. The proportions of fuel oil and gas supplies extracted from the seabed are significant and increasing." Council
Around the world, the increasing demand for inexpensive energy has spurred an intensive search for oil and increased drilling of offshore wells in increasingly difficult environments is currently predicted. For example, while drilling during the 1970's was confined to depths of from 1,400 to 5,000 feet, recent technological innovations will soon allow drilling in 8,000 to 10,000 feet of water.

It is unlikely, however, that the increased technological sophistication of the offshore oil industry has diminished the overall risk of pollution. Rather, it appears that "the rate of serious accidents will probably remain essentially constant with evolutionary improvements in equipment and procedures being balanced by a move into deeper waters and more hostile environments."

In summary, demand continues to beckon exploration and exploitation into potentially more hazardous realms. In accepting the risks attendant upon expanded development, both public and private interests should contemplate the need to prospectively ensure physical and legal protection for those who may be injured. To consider solutions, the social and legal contexts of the risk must be examined, for it is from these contexts that the problem of compensation arises.

B. The Social and Legal Context

1. The Choice to Exploit

To the extent that responsibility in tort should be a consequence of

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50. The Worldwide Search for Oil, NEWSWEEK, Mar. 17, 1980, at 35. See also King, Where the Offshore Search for Oil & Gas is Headed, OCEAN INDUSTRY, Oct. 1980, at 67.
51. Hammett, supra note 19, at 67.
53. Hammett, supra note 19.
54. At present, erection of production platforms following the drilling phase is rarely accomplished in depths greater than 1,000 feet; recent technological innovations will allow production at greater depths. Use of Exxon's guyed tower may be feasible at depths up to 2,000 feet, Exxon will Install Guyed Tower in 1,000 feet Water off Louisiana, OCEAN INDUSTRY, Feb. 1980, at 19, and Conoco's tension leg platform promises production at depths of 5,000 to 6,000 feet, Conoco's Tension Leg Platform will Double Water Depth Capability, OCEAN INDUSTRY, Feb. 1980, at 35. In addition, plans are being made for exploratory drilling in the continental margin at depths of close to 10,000 feet. Debate for a Decade.- The Ocean Margin Drilling Program, 21 SEA TECH. 26 (1980); Kerr, Explorer's Ocean Drilling Role Expanded, 213 SCI. 851 (1981). For a general description of the state of technology in the offshore oil industry, see Geer, Deepwater Drilling and Productions Technology: An Overview, 16 MARINE TECH. SOC'Y J. 8 (1982).
55. ENERGY UNDER THE OCEANS, supra note 18, at 117. Human error because of inexperienced or poorly trained personnel has also been identified as a major cause of offshore oil pollution accidents. Id. at 115-16. Increasing activity may lead to a dilution of experienced personnel, thereby increasing the probability of a major accident.
an actor's choice to behave in a certain manner, it must be observed that in offshore oil development there are two groups of actors: The coastal nation chooses to allow offshore development and the offshore operator chooses to exploit.

A coastal nation's ability to control offshore oil development flows from its recently recognized authority over extended offshore areas. Traditionally, the continental shelf was, except for the territorial sea, outside the jurisdiction of any nation. The growing capabilities of the offshore oil industry and the growing value of oil, however, spawned political and legal debate as to who owned and had jurisdiction over the riches of the continental shelf. In 1945, the United States declared increased jurisdiction over its shelf areas in the Truman Proclamation. Other nations quickly followed suit. In time, international law came to reflect the realities of state practice by recognizing that each coastal state has exclusive jurisdiction over the resources of its continental shelf. The distance from shore to which exclusive jurisdiction extended remained uncertain, however.

Primarily in response to a possible "colonial scramble" over the seabed by the major coastal states, the United Nations adopted a reso-

56. This behavior has been described as that which creates "unexcused nonreciprocity of risk". Fletcher, *Fairness and Utility in Tort Theory*, 85 Harv. L. Rev. 537, 545 (1972).
57. An offshore operator may be a private or state-owned entity.
58. For a discussion of the variety of ways in which a state and a foreign offshore operator may organize their relationship, see Adede, *Profile of Trends in the State Contracts for Natural Resources Development between African Countries and Foreign Companies*, 12 N.Y.U.J. Int'l L. & Pol. 479 (Winter 1980).
60. For the history of the territorial sea doctrine, see P. Jessup, *The Law of Territorial Waters, and Maritime Jurisdiction* (1927); S. Swarzauber, *The Three-Mile Limit of Territorial Seas* (1972); Law of the Sea Convention, supra note 59, arts. 2, 3.
64. M. Mouton, supra note 59, at 250, 261-62.
olution in the late 1960's designating the deep seabed as the common heritage of mankind. Although it was initially assumed that such international areas would include a portion of the oil-bearing continental shelf, the recently concluded negotiations of the Third United Nations Conference on the Law of the Sea indicate that the definition of continental shelf will be expanded to encompass all areas of potential exploitation. With exclusive jurisdiction over adjacent oil-bearing areas, coastal nations will enjoy sole authority to regulate offshore oil exploration and exploitation.

A nation faced with the opportunity to allow a hazardous activity within its jurisdiction has several alternatives. It may first consider whether such an activity should be permitted at all. In a world that is presently committed to oil consumption, a complete restriction of offshore oil development seems unlikely. Nevertheless, development may be prohibited in certain special areas. The Australian government, for example, has chosen to protect the Great Barrier Reef in this way. The nation may also choose to allow exploitation only when it is done in accordance with specified regulations.

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While it is generally thought that oil-bearing formations are confined to the continental shelf, dissenting theories exist. For a discussion of the latter, see generally B. Sokolov, D. Nesmeyanov & A. Seredin, Petroleum Resources of Seas and Oceans (1976). Under some projections, mid-ocean operations may be undertaken before the end of the century. Remond-Gouilloud, Pollution from Seabed Activities, in The Environmental Law of the Sea 245, 250 (D. Johnston ed. 1981). The cost of locating reservoirs and extracting their contents may limit such exploitation, however. Watt, Into Deeper Waters, 1 Marine Pol'y 347 (1977).


71. For a more detailed discussion of how international law allocates authority over resources, see Bilder, International Law and Natural Resources Policies, 20 Nat. Resources J. 451, 452 (1980).

72. For example, some nations are currently reconsidering their commitment to nuclear power. See, e.g., Mitterrand's Budget Stress New Jobs, N.Y. Times, Oct. 1, 1981, § D, at 15, col. 2, where it was reported that the French government would pare back its ambitious nuclear energy program by one-third, in part because of the perceived dangers.


ulation reflect the commitment of a nation to rapid offshore oil development.

National attitudes are often divided as to the overall cost or benefit of rapid offshore oil development. The costs are both social and environmental. Socially, rapid development disrupts small coastal towns and fosters unsafe working conditions for divers and platform workers. Environmentally, coastal areas are transformed for the construction of offshore concrete platforms are exposed to the risks of pollution described above, and become avenues for the transport of the oil extracted. These costs appear even greater when the resource deposit in question is small and of marginal value. On the other hand, rapid development of a significant resource creates jobs, increases government revenues, and expands technical capabilities—all of which are especially important to developing nations.

By balancing costs and benefits, a nation determines its degree of commitment to rapid development of its offshore oil. This determination carries with it a concomitant level of risk. The critical question becomes whether the nation is committed to providing for the consequences of its development choice.

2. Commitment to Compensation

Professor Calabresi writes, "[a]part from the requirements of justice . . . the principal function of accident law is to reduce the sum of the costs of accidents and the costs of avoiding accidents." Cala-

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76. Local tax revenues may increase, but these may not surpass costs in some regions: "Local governments. . . can expect continuing deficits." Orzech, Fiscal Impacts on Local Governments Due to OCS Developments, 1 Coastal Zone'78 279 (1978).
78. M. Jones & F. Godwin, supra note 20, at 91-118.
79. Rodgers, Hyde & Burke, The Role of BLM in Coordination of Planning for Pipelines on the Outer Continental Shelf, 4 Coastal Zone'78 2537, 2538 (1978).
80. Environmentalists have emphasized this factor in their criticisms of offshore oil development. See, e.g., Brower, Against Coastal Oil Drilling (an advertisement in the S.F. Chronicle, May 26, 1981, at 13, cols. 2, 3): Well, there's a lot of oil out there, so all this risk is worth it, right? Wrong. Take a place like Bodega where drilling will affect Pt. Reyes seashore, the Marin and Sonoma coasts, the Farallon Islands Marine Sanctuary. According to the U.S. Geological Survey, two decades of drilling there might produce 9 million barrels of oil. That would fuel the U.S. for only one half day. (There's also 12 seconds of natural gas).
bresi's object is "efficiency," the reduction of the total costs to society of the conduct in question. In the context of transnational offshore oil spills, "society" is the regional community, yet many nations of a region may not adhere to Calabresi's objective of reducing total costs. He assumes that the parties involved agree that all costs should be paid, an assumption which nations determining their commitment to compensation may not share.

When economic growth is a nation's prime objective, it may view Calabresian accident law as at least partially incompatible. Even if the nation is willing to pay the total costs within its territory, it may not be willing to compensate all, if any, of the damage that befalls victims in other nations. If this is the case, the polluting nation places a cost of achieving its desired economic goals on foreign victims, a cost which may or may not be assimilated by the victims' nations. Thus, a nation's commitment to development may be directly reflected in its policies toward compensation.

3. Motivation to Compensate

A nation that has the option of leaving certain costs of pollution with foreign citizens will nevertheless provide compensation to the victims of transnational pollution if it is in its best interest to do so. There are three major reasons why a potentially polluting nation might view a compensation scheme for victims of transnational pollution as within its interest.

a) Reciprocal Protection

A nation might fear that its own citizens will someday be victims of an accident, in other words, is to minimize the sum of the cost of measures to avoid accidents and the cost of the accidents themselves. The avoidance measures may be either preventative (designed to reduce the risks of an accident) or response-oriented (designed to mitigate the extent of damage once an accident occurs).


84. Notions of justice, which may or may not be economically efficient, may also influence a nation's commitment to a particular compensation scheme. This Comment assumes that the question of what constitutes just compensation is an internal matter for each nation to decide. It is also assumed here that sovereign States may mutually agree upon the question of what amount of compensation is just for damages arising from transnational pollution. Of course, principles of jus cogens, as international norms of conduct which cannot be derogated from by treaty, may limit this assumption. See generally J. Sztucki, Jus Cogens and the Vienna Convention on the Law of Treaties (1974). In general, this paper proceeds on the assumption that "Justice is an irrational ideal. However indispensable it may be for volition and action of men, it is not subject to cognition. Regarded from the point of view of national cognition, there are only interests and conflicts of interest." H. Kelsen, General Theory of Law and State 13-14 (Wedbers trans. 1946).
of pollution from another nation in its region. A prospective compensation scheme therefore becomes beneficial because it ensures reciprocal protection. Such a motivation is not always present, of course, since the distribution of the risk of transnational pollution between two nations may be entirely one-sided.

Transnational pollution is generally classified as either "one-way" or "two-way." In a one-way situation, only one group of nations is at risk. Pollution carried by a river, for example, is one-way, since the downstream nations are the only potential victims. A two-way situation exists when nations are both potential polluters and potential victims.

Although at first glance the ocean would seem to be a medium for two-way transnational pollution, this is not necessarily so. Quite often, currents in the waters above the continental shelf are as predictable and one-way as those of a river. Thus, certain nations within a region may face a greater risk of pollution than others. Even if currents and winds are neutral, one-sided physical distribution or development of oil may create a one-way pollution situation. Not all nations have offshore resources to exploit, and those that do may develop their resources at widely divergent rates. Moreover, coastlines vary in their susceptibility to the damages of pollution.

b) Extralegal Consequences

Additionally, a nation could be motivated to compensate foreign victims of transnational pollution because it fears the possible extralegal consequences of not doing so. Polluted or potentially polluted nations, for lack of other options, may be compelled to invoke acts of self-help, such as economic sanctions, against polluters. While it is unlikely that open violence would erupt over pollution, an undesirable exacerbation of tensions between nations is quite possible. For example, ordinarily cordial United States-Canada relations have been threatened by Canadian frustration over what is perceived as American

87. The coastline of a nation may be ecologically sensitive to damage (e.g., marshlands) or commercially sensitive to damage (e.g., large tourist industry).
88. Acts of self-help may involve diplomatic protests, economic sanctions, or violent reprisal. As to the latter, it should be noted that nations are admonished to "refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state. . ." U.N. Charter art. 2, para. 4. For a discussion of the effectiveness and problematic legal status of economic sanctions, see Bowett, Economic Coercion and Reprisals by States, 13 Va. J. Int'l L. 1 (1972); Lauterpacht, Boycott in International Relations, 14 Brit. Y.B. Int'l L. 125 (1973).
unwillingness to address the acid rain problem, which affects Canada disproportionately.89 Likewise, a good part of the Mexican refusal to discuss state responsibility for IXTOC I stemmed from its perception that the United States has been unwilling to accept its responsibility for transnational salinity pollution of the Colorado River.90

Moreover, nations may wish to preclude the possibility that they themselves will have to invoke self-help, which is a poor solution for all nations to the problem of accountability.91 First of all, it does not directly yield financial compensation to the victim. Furthermore, it does not clearly distinguish those who are responsible for pollution damages from those who are not, and therefore may not always modify the behavior of the responsible party. Finally, there may be little proportionality between the damage sustained and the consequences to the polluting nation of the act of self-help.

c) Law

Finally, accountability and the motivation to compensate may be gained through law.92 The international community has repeatedly asserted the desirability of a regime of law over a regime of self-help.93 Only through the former, it is believed, may the inherent interest of all people in a stable world be protected. The central issue in achieving a desirable regime for compensation is therefore the ability of law to make the responsible nations, national companies and private industries internationally accountable.

4. International Legal Accountability

Compensating victims of transnational pollution is difficult because international legal accountability turns on the willingness of the polluting nation or private entity to make legal remedies available. Under international law, the jurisdiction of the International Court of

89. See, e.g., Kaufman, Canada Seeks Allies in Fight on Acid Rain, N.Y. Times, Oct. 19, 1982, at 12, col. 1; Canadian Official Warns on Acid Rain—Environment Minister Says a U.S. Failure to Act on Issue Could Affect Ties with Ottawa, N.Y. Times, Mar. 31, 1981, § B, at 17, col. 1. In the words of John Roberts, the Canadian Minister of the Environment, acid rain is "the single greatest irritant to the United States-Canadian relationship from the Canadian point of view." Id.


91. "Revenge is a kind of wild justice; which the more man's nature runs to, the more ought law to weed it out." Bacon, Of Revenge, reprinted in J. Bartlett, Familiar Quotations 180 (E. Beck ed. 1980).

92. Law, by developing norms of conduct and by legitimating coercive measures, attempts to ensure that people and nations are accountable to prevalent notions of equity while it promotes desirable objectives in the order of society itself.

Justice and other international tribunals is dependent upon the consent of nations. Private transnational litigation may be limited because polluting nations may bar victims from their courts and refuse to recognize judgments won in other nations. Under settlement arrangements, payments from offshore operators or *ex gratia* payments from nations are available only at the discretion of the operator or nation in question.

Although usually not consistent and definitely not certain, accountability may nonetheless be achieved. Individual victims may sometimes be able to gain redress through their own courts, even absent an international agreement, if assets of the foreign polluter are within the jurisdiction of the domestic forum or another friendly forum. The presence of assets within such jurisdictions, however, is a fortuitous and slender reed upon which nations should not rely when designing compensation schemes for their citizens. For this reason, this Comment focuses on international methods for accountability. Yet it must be borne in mind that international accountability is fundamentally different from domestic accountability. A nation has the capacity to enforce its own laws; in the international context, coercive enforcement is not as readily available. Given the narrow powers of enforcement, the solutions offered herein are limited. More complete solutions must await the evolution of a world order different from the present

94. "There exists an uncontroverted principle of general international law according to which no State is obliged to submit a dispute with another State to an international tribunal. Such submission requires agreement of the parties to the dispute." S. ROSENNE, 1 THE LAW AND PRACTICE OF THE INTERNATIONAL COURT 313 (1965). This limited scope of international law "is merely the counterpart of the wide freedom of independent action which states claim in virtue of their sovereignty." J. BRIERLY, THE LAW OF NATIONS 73-74 (1963).


96. One commentator has written: "[t]he law obtaining between nations... (is) enforced by (only) moral sanctions: by fear on the part of the nations... of provoking general hostility." J. AUSTIN, THE PROVINCE OF JURISPRUDENCE DETERMINED 201 (1954 ed.). Another commentator has written, however, that "[t]oo much is made of the fact that nations act not out of 'respect for law' but from fear of the consequences of breaking it." L. HENKIN, HOW NATIONS BEHAVE 92, 320 (2d ed. 1979). Henkin notes that, although "[a] norm of obligation brings no guarantee of performance, it does add an important increment of interest in performing the obligation." *Id.* A more cynical view is that "[i]nternational law is that thing which the evil ignore and the righteous refuse to enforce." L. URIS, EXODUS 498 (1958).

system of nation-states—a contingency far beyond the scope of this Comment.

II

METHODS FOR PROSPECTIVE RESOLUTION

The basic political ordering of the world rests upon the system of sovereign nation-states—a circumstance that poses a potentially powerful barrier to compensation for transnational pollution victims. Conceptually, this Comment distinguishes three methods of prospectively dealing with the barrier of sovereignty: the "International Law Method," the "Transnational Litigation Method," and the "Settlement Method."

The International Law Method assumes that the barrier of sovereignty is impenetrable to attempts to enforce the municipal laws of other nations and that the problem of compensation must be resolved by the law between nations. Therefore, conventions are adopted to allow either the victim or the victim's nation to bring a claim against a polluting nation in an international forum. The Transnational Litigation Method seeks to make the barrier of sovereignty porous to private litigation. Under this method, nations enter into conventions that facilitate private foreign suits and the foreign enforcement of domestic judgments. Suits are brought under a nation's laws in a national forum, rather than under international law in an international forum. The Settlement Method seeks to sidestep the barrier by a prearranged agreement for extrajudicial settlement.

The International Law and Transnational Litigation Methods described above are public in that treaties between nations are required to implement them. The Settlement Method, on the other hand, may be either public or private, in that either nations or private operators may

97. For one of the few arguments that the best order lies with the system of nation-states rather than a world state, see I. Kant, The Principle of Progress Considered in Connection with the Relation of Theory to Practice, in PRINCIPLES OF POLITICS 63 (W. Hastie ed. & trans. 1891).

98. One commentator has described the underlying context of this situation as follows: The striking contrast between conditions within the territorial state and those obtaining outside lies in the order of the one as against the chaos of the other. That is, while sovereignty brought peace, regularity, and stability to the territorial state, the refusal of the state to recognize any authority above itself made for anarchy and conflict in the relations between states.


99. See generally infra text accompanying notes 109-140.

100. See generally infra text accompanying notes 141-193.

101. See generally infra text accompanying notes 196-207.
FIGURE 1
THE THREE METHODS OF PROSPECTIVE RESOLUTION

A. The International Law Method
(Consent to Adjudication of Polluting Nations' Duties Under International Law)

B. The Transnational Litigation Method
(Facilitation of Transnational Private Suits under Municipal Law)

C. The Settlement Method
(Consent to Extrajudicial Settlement of Claims)
implement prospective schemes for the settlement of transnational damage claims.

The basic mechanism for implementing a "private" settlement scheme is a binding agreement between the offshore operators of a region. The mechanism for the implementation of any "public" scheme is an agreement under which party nations consent to, among other things, the jurisdiction of an international adjudicatory body.102 "Compromissory" clauses103 to ensure such jurisdiction have been included in several treaty contexts,104 but none currently ensure jurisdiction over issues of compensation in the area of offshore oil development.105

To be comprehensive, any public method scheme requires the consent of all nations potentially affected in a region. Public methods may thus be difficult to implement in regions where many nations are involved because universal consent may be difficult to obtain. Nations that benefit from offshore drilling yet carry little of the risk of damage from pollution may, despite duties under international law,106 seek to avoid any negotiation of a solution with disadvantaged nations. The motivating force for concessions by the advantaged nations will likely come from the potential strain on international relations that a recalcitrant stand might create.107

102. See supra note 94.

103. Classically, nations have consented to jurisdiction for specific existing disputes through a special agreement called a compromis. Consent to jurisdiction for certain types of disputes which may arise in the future is gained by a compromissory clause, which is often appended as an optional protocol to a treaty. S. ROSENNE, supra note 94, at 333-4. See generally C. JENKS, THE PROSPECTS OF INTERNATIONAL ADJUDICATION 13 (1964). Compulsory dispute provisions like those present in the recently signed Law of the Sea Convention are quite rare.


105. The Law of the Sea Convention contains provisions under which compulsory jurisdiction may be established at the request of any nation to resolve disputes involving "rules and standards for the protection and preservation of the marine environment." Law of the Sea Convention, supra note 59, arts. 286, 297 (1)(c). A noted commentator on the Convention suggests that the compulsory dispute settlement provisions do not extend to questions of compensation, however. Telephone interview with Prof. Bernard H. Oxman, University of Miami School of Law (Oct. 12, 1982).

106. For a discussion of a nation's duty to negotiate, see NORTH SEA CONTINENTAL SHELF (W. GER. v. DEN. & W. GER. v. NETH.), 1969 I.C.J. 4, 46-47 (Judgment of Feb., 20); Fisheries Jurisdiction (U. K. v. ICELAND), 1974 I.C.J. 4, 201-2; LAW OF THE SEA CONVENTION, supra note 59, arts. 197, 208(4) and 208(5).

107. See supra notes 89-90 and accompanying text.
Ideally, each region faced with the risk of offshore pollution should design a compensation scheme that maximizes the attainment of several objectives. First, receipt of compensation should be ensured. Second, the amount of compensation should be adequate. Third, the scheme chosen should be efficient. Finally, the scheme should act as an incentive to prevent future harm. The following sections examine the extent to which the three methods for resolution achieve these goals, the manner in which the methods have been applied in the past, the regional characteristics which may influence the advisability of a particular method, and the possibility of combining methods in certain cases.

A. International Law

1. Perspective

Nations may choose to achieve compensation for the victims of transnational offshore oil pollution by facilitating the adjudication of a polluting nation's duties under international law. Nations have a duty under international law "to insure that activities within (their) jurisdiction or control do not cause damage to areas beyond the limits of national jurisdiction." Suits under the International Law Method therefore focus on whether a nation has breached its responsibilities to the international community. The arbitration or judicial resolution of claims under international law takes place before international tribunals, with the foreign ministries of the nations involved

108. This study does not consider the precise substantive details of a compensation scheme. See supra note 84. Furthermore, it must be recognized that compensation can never be a substitute for prevention.

109. Nations' duties under international law should not be confused with the obligations incurred by states in a prospective settlement agreement. Under this methodological analysis, the former is a legal obligation, the latter a contractual obligation which the parties are not required to undertake.


111. Under international law, the polluter's duties are not directly addressed. Rather, the polluting nation may be held liable for the duties breached by the polluter. Whether the polluting nation may seek indemnification from the polluter remains a domestic question.

112. "The only difference between arbitration and judicial settlement lies in the method of selecting the members of these judicial organs. While in the arbitration proceedings, this is done by agreement between the parties, judicial settlement presupposes the existence of a standing tribunal with its own bench of judges and its own rules of procedure which parties to a dispute must accept." G. Schwarzenberger & E. Brown, Manual of International Law 195 (6th ed. 1976).
typically representing their nations. A suit under this method may be adjudicated with reference to international customary law and any applicable international conventions. Several difficulties arise if international customary law—the "general practice of nations accepted as law"—is the sole body of law relied upon in consent agreements to govern the international adjudication.

First, the doctrines of international customary law are not easily ascertainable. This problem is illustrated by the current debate in international circles as to whether a nation's duty should be determined according to a standard of fault or strict liability when extraterritorial damage is involved.

Second, customary international duties are typically of a vague

113. The primary international court is the International Court of Justice (I.C.J.) in The Hague, The Netherlands, which was established in 1947 to replace the Permanent Court of International Justice created by the League of Nations in 1920. U.N. CHARTER art. 92. For discussions of the history and structure of the Court, see generally G. Elian, THE INTERNATIONAL COURT OF JUSTICE (1971); S. Rosenne, THE WORLD COURT, WHAT IT IS AND HOW IT WORKS (3d ed. 1973).


114. Statute of the International Court of Justice, art. 38(1) (attached as an annex to the U.N. Charter, see U.N. CHARTER art. 92)[hereinafter cited as Statute]. The article also states that: "[j]udicial decisions and the teachings of the most highly qualified publicists of the various nations, [shall be applied] as subsidiary means for the determination of rules of law." Id., art. 38(1)(d). It should be noted that conventional law is binding only on those nations that are party to the treaty and thus does not of itself constitute a rule of customary international law: "Considered in themselves, and particularly in their inception, treaties are, formally, a source of obligation rather than a source of law." Fitzmaurice, Some Problems Regarding the Formal Sources of International Law, SYMBOLAE VERZIJL 153 (1958). However, if the treaties reflect widespread national practice, their provisions may serve as evidence of a rule of customary international law. North Sea Continental Shelf (W. Ger. v. Den. & W. Ger. v. Neth.), 1969 I.C.J. 4, 374-75.

115. Statute, supra note 114, art. 38. The possibility of establishing regional customary law is discussed in Asylum (Colum. v. Peru), 1950 I.C.J. 266, 276 (Judgment of Nov. 20).


117. See generally, J. Schneider, supra note 5, at 162-171; Arbitblit, The Plight of American Citizens Injured by Transboundary River Pollution, 8 ECOLOGY L. Q. 339, 360-70 (1979); Goldie, supra note 95, at 1189-1264.

and imprecise nature.\textsuperscript{118} For example, the 1958 Geneva Convention on the High Seas, thought to be declaratory of international customary law,\textsuperscript{119} requires every state to "draw up regulations to prevent pollution of the seas . . . resulting from the exploitation and exploration of the seabed and its subsoil . . ."\textsuperscript{120} As one commentator has noted, this language "is quite general and no guidelines are provided . . . . Therefore, the vaguest of regulations would probably satisfy this mandate . . . ."\textsuperscript{121} Proof of fault when state of the art ultrahazardous activities are involved is, as a practical matter, always difficult.\textsuperscript{122} The generality of international customary law will only enhance this difficulty in establishing a breach of duty.\textsuperscript{123} Such generality is present, for example, in the environmental provisions of the recently adopted\textsuperscript{124} Law of the Sea Convention.\textsuperscript{125}

Uncertainty and generality in international law render nations unable to predict the possible consequences of consent to adjudication.\textsuperscript{126} Nations are understandably reluctant to agree to unclear future commitments,\textsuperscript{127} and their reluctance may lead to delays in national ratifi-

\textsuperscript{120} \textit{Id.}, art. 24.
\textsuperscript{121} Utton, \textit{A Survey of National Laws on the Control of Pollution From Oil and Gas Operations on the Continental Shelf}, 9 \textit{COLUM. J. TRANSNAT'L L.} 331, 336 (1970). Prof. Utton concludes that state regulations "are consistently general in nature, relying to a large extent on the subsequent wisdom of both the drilling company and the supervisory authority." \textit{Id.} at 337. Similarly, the Law of the Sea Convention articulates quite general duties in the area of offshore oil pollution. \textit{Law of the Sea Convention, supra} note 59, arts. 192, 194 (2).
\textsuperscript{122} Goldie, \textit{supra} note 95, at 1196-97.
\textsuperscript{123} Brown, \textit{The International Law Framework} 16-17 (April 22, 1980) (unpublished manuscript available at Law Library, University of Wales Institute of Science and Technology, Cardiff, Wales).
\textsuperscript{124} "[T]here is no definition of the term 'adoption', but it would appear to mean the formal act whereby the form and content of the proposed treaty are settled." L. Henkin, R. Pugh, O. Schachter & H. Smit, \textit{International Law Cases and Materials} 598 (1980).
\textsuperscript{125} The environmentally-oriented portion of the Law of the Sea Convention has been described as an umbrella treaty, signifying that it will embrace more specific treaties negotiated elsewhere. Address by Ambassador J. Alan Beesley, Q.C., Perspectives on U.S. Policy toward the Law of the Sea Symposium, Boalt Hall School of Law (Feb. 20, 1982). Where more specific treaties have not been negotiated, as in the case of offshore oil pollution, the Convention recognizes the duty of nations to cooperate globally and regionally in the development of international laws of liability and international standards for the conduct of offshore activities. \textit{Law of the Sea Convention, supra} note 59, arts. 197, 208(4)-(5), 235(3).
\textsuperscript{126} Rovine, \textit{The National Interest and the World Court}, in \textit{1 The Future of the International Court of Justice} 313, 315 (L. Gross ed. 1976). Ironically, uncertainty is compounded because so few cases are submitted to the Court. Gross, \textit{Conclusions}, in \textit{2 Id.} at 746.
\textsuperscript{127} For a seminal work addressing the problem of uncertainty as a deterrent to the implementation of international agreements, see R. Bider, \textit{Managing the Risks of International Agreement} (1981).
cation and consequently to delayed effectiveness of regional agreements. A regime that reduces the uncertainty of the law to be applied will go far to reduce the reluctance of nations to enter into such arrangements. General terms invoking international customary law or terms which do not specify the exact law to be applied must be avoided in favor of specific provisions for adjudication. Therefore, a negotiating nation’s willingness to accept an international law approach will depend in part on whether the details of a proposed treaty help dispel its fears of consenting to the jurisdiction of an international tribunal.

As one commentator writes:

> [C]ustom is an unsuitable vehicle for international “welfare” or “cooperative law.” The latter demands the positive regulation of economic, social, cultural and administrative matters, a regulation that can only be effective by specific formulation and enactment.

In addition to clarifying the terms of adjudication, specification of an appropriate governing international tribunal may be important. For example, a 1966 European agreement governing the withdrawal of water from Lake Constance provides for a special arbitral tribunal to

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128. Specific terms will serve as better evidence of the rules of customary international law, however, and nations may not desire clearer rules pertaining to liability for transnational pollution. See infra text accompanying notes 207-208.

An “international law” scheme involving positive regulation of transnational pollution has been proposed. Draft European Convention on the Protection of Fresh Water against Pollution, reprinted in Legal Problems Relating to the Non-Navigational Uses of International Watercourses, 26 U.N. 6 GAOR Supp. (no. 10) at 138, U.N. Doc. A/CN.4/274 (Vol. II) (1974). The Draft Convention provided for compulsory referral of disputes to an international arbitral tribunal if negotiations failed, id. art. 4(c), delineated what would constitute “damage to persons,” id. art. 7(1), and specified that liability would attach to the nation “in whose territory any water pollution [arose],” id. art. 8. One commentator has interpreted Article 8 of the Draft Convention as imposing strict liability upon the polluting nation. State Liability, supra note 117, at 548-49. However, Article 9 reduces compensation or waives the polluting nation’s liability when the claimant was contributorily or solely negligent—defenses inconsistent with the traditional common law interpretation of strict liability. Under common law, plaintiffs are denied full recovery only when intentionally or recklessly negligent. W. Prosser, The Law of Torts, 522-24 (4th ed. 1971).

129. Other factors may contribute to the general reluctance of some nations to adopt international law methods. See generally J. Gamble, Jr. & D. Fischer, The International Court of Justice, An Analysis of A Failure (1976). It has been argued that new nations regard the Court’s law as an oppressive remnant of colonial times, but one commentator contends that the attitudes of new states do not differ significantly from those of other states in this respect. Shihata, The Attitude of New States Toward the International Court of Justice, 19 INT’L ORG. 203, 216-217 (1965). Other nations seek to avoid the embarrassment and finality of an adverse ruling by a body beyond their control. See generally E. Deutsch, An International Rule of Law 275-291 (1977); Owen, Compulsory Jurisdiction of the International Court of Justice: A Study of Its Acceptance by Nations, 3 GA. L. REV. 704 (1969).

130. W. Friedmann, The Changing Structure of International Law 122-23 (1964). In addition to the weaknesses described above, Friedmann writes, “custom is too clumsy and slow moving a criterion to accommodate the evolution of international law in our time . . . .” Id.
resolve disputes arising under it. The party nations had perceived that the International Court of Justice (I.C.J.), established to adjudicate controversies of global significance, might not adequately appreciate the importance of local and regional conditions and traditions. An interest in procedural flexibility may also cause nations to consent to the jurisdiction of a tribunal other than the International Court of Justice. For example, if negotiating nations wish to allow individual victims to pursue their claims personally, they must consent to the jurisdiction of another tribunal, for the I.C.J. entertains appearances only by nations.

2. Evaluation

An agreement under the International Law Method may provide that either an affected nation or an individual victim may sue a polluting nation before an international tribunal. When the victim’s nation pursues the claim, however, the likelihood of compensation is endangered because the nation’s interest in maintaining friendly ties with the polluting nation may override the legal interests of the victim. The victim’s nation may subordinate the claim to its political concerns and may therefore not be the most adverse plaintiff available. Agreements allowing suits to be brought directly by victims have received academic support as a means to avoid dependence “on the exercise of diplomatic protection by the victim’s national state.” To avoid such political manipulations, victims themselves should have the right to bring their

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133. Statute, supra note 114, art. 34(1).
134. Evidence of such a tendency can be found in the involvement of the U.S. State Department in U.S. private suits against foreign sovereigns prior to the enactment of the Foreign Sovereign Immunities Act of 1976, 28 U.S.C. §§ 1602-1611 (1976 & Supp. IV 1980). Prior to the Act, the State Department decided whether the foreign party was entitled to sovereign immunity in each particular case. See Letter from Jack B. Tate, Acting Legal Advisor, Department of State, to Phillip B. Pertman, Acting Attorney General, Department of Justice (May 19, 1952), reprinted in 26 DEPT. STATE BULL. 984 (1952). The State Department was often pressured politically, and the private litigants consequently faced the possibility of defeat on political rather than legal grounds. Leventhal, The Bay of Campeche Oil Spill: Obtaining Jurisdiction Over Petroleos Mexicanos Under the Foreign Sovereign Immunity Act of 1976, 9 ECOLOGY L.Q. 341, 344-348 (1980).
135. State Liability, supra note 117, at 561.
Several other apparent advantages result from allowing direct private suits. First, there is no evidence that allowing victims to pursue their claims personally would be any less efficient than requiring nations to bring claims. Although a suit by the victim’s nation may serve to reduce the litigation costs that normally accrue to victims personally, bureaucratic consolidation of claims for litigation is quite likely more costly than private suits. For example, one commentator has argued that public remedies are “needlessly circuitous and burdensome compared to private actions brought directly against polluters.”

Second, it has been argued that “[v]iewing environmental protection as a human right compels acknowledgement of the individual as a procedural subject of international law.” Finally, as Professor Rosenne suggests: “It is possible that the direct representation of the individuals concerned in the proceedings before the court would have the effect, not only of stimulating public interest in the work of the Court, but also, and this may be important, of enhancing its prestige and public confidence in the reality of international justice.”

Regardless of who has the right to sue, the International Law Method by itself may not provide sufficiently directed incentives to prevent future harm. While placing liability directly on nations may encourage greater care in the regulation of offshore exploitation, it will not directly influence the behavior of the exploiting entities unless the nation passes on to them the burden of its international liability.
B. Transnational Litigation

1. Perspective

The Transnational Litigation Method seeks to ensure compensation to victims of pollution through public conventions facilitating private suits under domestic laws. The primary obstacle to private transnational litigation is the control nations have over the access of foreign nationals to their courts and the enforcement by their courts of foreign judgments. The key to overcoming this obstacle is once again the consent of the nations involved.

When nations agree to allow private transnational litigation within their jurisdictions, conflict of laws issues arise. These include questions of jurisdiction, choice of law, and enforcement of foreign judgments. Whether these issues become obstacles to implementation of the method depends in large part upon the procedural and substantive similarity of the legal systems of the nations involved. Allowing individuals to institute transnational litigation in countries with structurally and substantively identical legal systems gives rise to few, if any, conflict of laws problems. When the legal systems are

141. Mingst, supra note 139, at 19.
143. For examinations of conflict of laws problems, see generally A. EHRENZWEIG, RULES OF private INTERNATIONAL LAW (1962); A. EHRENZWEIG & E. JAYME, PRIVATE INTERNATIONAL LAW (1973); R. Weintraub, COMMENTARY ON THE CONFLICT OF LAWS (2d ed. 1980); Juenger, American and European Conflicts Law, 30 AM. J. COMP. L. 117 (1982).
144. For a general discussion of U.S. practice, see R. Weintraub, supra note 143, at 90.
145. See generally A. EHRENZWEIG & E. JAYME, supra note 143.
147. Interesting problems can theoretically arise even when legal systems are identical,
even minimally different, however, inequitable results may occur.

Differences in procedural laws may obstruct private suits nonreciprocally. For example, Canadian citizens have brought suit in American courts for transnational air pollution damage to Canadian property. Because Canadian law does not confer upon its courts jurisdiction over suits involving injury to foreign land, however, it is unlikely that American citizens would be able to bring suit in Canada in a reciprocal situation. Inequities may also arise from differences in substantive law. Depending upon the choice of law rules applied, citizens of one jurisdiction may find themselves awarding to foreign nationals more than they themselves would receive under similar circumstances.

These disparities may eventually create political pressures to equalize treatment through the harmonization of the laws of the nations involved. If the disparities in treatment are small, eventual harmonization may be acceptable; if the differences in treatment are great enough, they will more likely act to preclude the consent to a simple transnational litigation scheme altogether.

Consent may also be precluded when important substantive interests of the nations involved are implicated. Nations may be reluctant to agree to an international regime of equal access because the resulting harmonization of laws may produce a system of accident law which would detract from a policy of rapid offshore development. Similarly, the geography of a region may place more risk of pollution on

however. For example, if both nations' conflict of laws rules refer land title matters to the whole law of the nation where the land is located (internal law plus conflict of law rules), there may be an endless chain of references to each other's laws. For a practical view of this possibility, see Griswold, Renvoi Revisited, 51 Harv. L. Rev. 1165, 1191-1193 (1938). In addition, defendants may be required to travel long distances. This problem has been resolved domestically through the doctrine of forum non conveniens.

150. It was for this reason that the Trail Smelter dispute had to be litigated on the international level. Read, supra note 138, at 222-23. For general discussions of the difficulties faced by private U.S. litigants in Canadian courts, see Arbitblit, The Plight of American Citizens Injured by Transboundary River Pollution, 8 Ecology L. Q. 339, 342 (1979); McCaffrey, Trans-Boundary Pollution Injuries: Jurisdictional Considerations in Private Litigation Between Canada and the United States, 3 Cal. W. Int'l L.J. 191 (1973).
152. For example, disparities between the United States and Canada have led to the recently proposed Uniform Transboundary Pollution Access Act, see infra note 157 and accompanying text.
153. See supra text accompanying notes 82-84.
one nation than another. A disadvantaged nation receiving little or no benefits from the risk-creating activity might therefore desire a body of rules more stringent than would arise solely from simple consent to transnational litigation.

Such circumstances give rise to a more complex form of the Transnational Litigation Method that not only secures consent to litigation, but in addition makes an attempt to negotiate an acceptable harmonization of the laws in question. This harmonization may be achieved through either coordinated domestic action or international agreement. Under the domestic approach, nations independently, yet in common design, alter their own laws to achieve greater harmony with other nations in their region. International organizations such as the Organization for Economic Co-Operation and Development have encouraged nations to follow this course, and the joint effort of the American and Canadian Bar Associations to produce the Uniform Transboundary Pollution Reciprocal Access Act exemplifies its potential success. By coordinated domestic developments, the transnational treatment of pollution victims may become sufficiently equalized to alleviate the conflict of laws problems that can bar consent to equal access. Unfortunately, such efforts to harmonize have addressed only procedural differences of peripheral interest to the nations involved.

An alternative to coordinated domestic harmonization is the international negotiation of an independent body of law for use in private transnational suits. The negotiated law is articulated in a treaty and

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154. For a discussion of why advantaged nations may negotiate, see supra text accompanying notes 88-91.

155. A nation may also have a substantive interest in consistency between the laws to be harmonized and its legal doctrines for land-based activities. For example, in negotiating the London Convention (see infra notes 161-162 and accompanying text), Norway argued for strict liability without limitation. Although consistent with Norway's general doctrines, this strong position led to a regrettable compromise position discussed in infra text accompanying notes 163-165. See Fleischer, Liability for Oil Pollution Damage Resulting from Offshore Operations, in SCANDINAVIAN STUDIES IN LAW 105, 109-111 (1976).

156. See supra note 142.


158. For example, the Uniform Transboundary Pollution Reciprocal Access Act "applies to access only (not to any other procedural, jurisdictional or substantive issues)." Memorandum from Louis B. Sohn, University of Georgia School of Law, to Henry King (Aug. 6, 1982) (discussing the Uniform Transboundary Pollution Reciprocal Access Act).

then incorporated by member nations into their domestic laws. Direct negotiation of an independent body of law solves the conflict of laws problem in a manner that is politically acceptable to all participating nations. Transnational litigation schemes with negotiated independent bodies of law have been utilized in several contexts to adjudicate claims of pollution, including pollution arising from offshore oil development.

This approach is not free of problems, however. First, several negotiated products have failed to achieve the desired goal of legal uniformity because they failed to eliminate loopholes through which nations may impose the requirements of their own divergent laws. An example of this problem is found in the negotiated body of law adopted by nations of the North Sea region in the 1976 London Convention on Civil Liability for Oil Pollution Damage from Exploitation of Seabed Mineral Resources (London Convention). The London Convention explicitly allows an individual nation to impose greater liability than that specifically provided for in the Convention if the pollution arises from an installation under its control. Thus, specific liability terms are really only minimal requirements, and judgments may still differ according to the state in which they are granted. Under this scheme, diversity is promoted rather than eliminated, and the London Convention fails to achieve its objective of "uniform rules and procedures" governing liability.

The ANTONIO GRAMSCI oil spill provides a dramatic example of a loophole problem that arises not through negotiations, but through domestic interpretation of negotiated terms. In February of 1979, the Soviet tanker ANTONIO GRAMSCI went aground in the

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160. Id.
162. Id.
163. The Convention states:
This convention shall not prevent a State from providing for unlimited liability or a higher limit of liability than that currently applicable under Article 6 for pollution damage caused by installations for which it is the Controlling State [the State within whose jurisdiction the operation is occurring] and suffered in that State or in another "State Party". . .
Id. art. 15, at 1454. This provision also requires that each party state make its choice of law of the "Controlling State".
165. London Convention, supra note 161, preamble.
Baltic and released approximately 5,500 tons of crude oil. The oil, mixed with ice, polluted approximately 4,000 islands in the Swedish Archipelago. The resulting claims of compensation were governed by the International Convention on Civil Liability for Oil Pollution Damage (CLC), to which both Sweden and the Soviet Union were party. The owner of the ANTONIO GRAMSCI established a limitation fund under the CLC in the People’s Court of Riga. The Soviet Union’s claims against the limitation fund were approximately three times as large as Sweden’s. More than ninety-seven percent of the Soviet claim, however, came from the Soviet Ministry for Conservation, Control and Utilization of Water, “for damage to resources and for costs and expenses in restoring the polluted water to a clean condition.” The Soviet Ministry calculated the claim under a Soviet “ecological damage formula” which charges two rubles for every cubic meter of water affected. The number of cubic meters affected is determined by assuming that the spilled oil disperses to a concentration of fifty parts per million. Not only is it highly unlikely that all the oil would so disperse, but such a dispersal has in fact been argued to be an ecologically sound way to dispose of oil. Because the fund was inadequate to satisfy the total amounts claimed, it was distributed pro rata, seventy-five percent to the USSR and twenty-five percent to Sweden. Thus, because the CLC did not adequately define oil spill “damage,” and because damage was domestically very broadly defined, the compensation was determined by the limitation fund according to the domestic law of the state in which the fund was established.

168. Id. Over two thousand islands with a total coastline of 300 kilometers were cleaned by the following September. Id.
169. CLC, supra note 159. Supplementary to the CLC is a convention which establishes a compensation fund above the CLC liability limits. International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, Dec. 18, 1971, reprinted in 11 I.L.M. 284 (1972) [hereinafter cited as Fund Convention]. For a discussion of the background of these two conventions and the interrelationship between them, see generally R. M’Gonigle & M. Zacher, supra note 202 at 182-92; Doud, Compensation for Oil Pollution Damage: Further Comment on the Civil Liability and Compensation Fund Conventions, 4 J. MAR. L. & COM. 525 (1973).
171. Sweden claimed £11,844,671 and the Soviet Union claimed £34,326,373. IOPC Fund Doc. FUND/EXC.2/5, at 3 (1980).
172. Id.
173. Id. at 2.
174. See I. Manners, supra note 40, at 114-124.
175. Id. at 121-22, 141-45.
176. The limitation fund was established in the amount of £1,727,169. IOPC Fund Doc. FUND/EXC.2/5, at 4 (1980).
177. IOPC Fund Doc. FUND/A/ES.1/9, at 1 (1980).
178. Under the Convention, “damage” means physical damage caused by oil within the territorial sea of a contracting State. CLC, supra note 159, art. I(6). Even with this language in the CLC, the Court in which the fund is established determines the precise scope of the term with reference to the municipal law of the State where the fund is established. See Brown, supra note 123, at 10-12.
fined, the USSR received a disproportionate amount of the limitation fund.  

The Executive Committee of the International Oil Pollution Compensation Fund (IOPC) objected to the distribution on the ground that the Soviet claim was not within "pollution damage" as defined in the CLC. The IOPC Assembly adopted a resolution that in essence provides an advisory opinion on the interpretation of "pollution damage" for future cases. A formal mechanism for uniform interpretation of convention terms would help alleviate similar definitional problems in the future.

A second apparent problem with a negotiated legal regime is that it can be effective only if it provides the sole private recourse for the party nations and their nationals. The specifics of the legal regime are the result of a bargaining process involving political trade-offs between the nations involved. If a party nation or its nationals may pursue an action outside of the regime, the integrity of the bargaining process is undermined.

This problem was recently raised in a suit for damages resulting from the AMOCO CADIZ oil spill off the coast of France in 1979. Both Liberia, the nation in which the vessel was registered, and France are parties to the Civil Liability Convention. In accordance with the CLC, the shipowners established a limitation fund in France. Convention provisions specifically restrict jurisdiction over claims for compensation against the owner to the country in which the fund is established. Nonetheless, the French government filed a claim

179. It is unclear whether Sweden could have also made claims under the Soviet statute. If it had, the Soviet portion of the fund would nonetheless have been increased relative to the Swedish award because the ecological damage formula so overwhelmed the traditional damage claims. For example, if the USSR had not utilized the ecological damage formula, over 90% of the limitation fund would have been distributed to Sweden. If Sweden had claimed additional damages under the Soviet formula in addition to its traditional damage claim, it would have received only 55% of the fund.

180. IOPC Fund Doc. FUND/EXC.2/5, at 2 (1980). As to the relationship of the International Oil Pollution Compensation Fund to the CLC, see Fund Convention, supra note 169, art. 3.

181. IOPC Fund Doc. FUND/A/ES.1/9, at 3 (1980). The resolution states that assessment of compensation "is not to be made on the basis of an abstract quantification of damage calculated in accordance with theoretical models." IOPC Fund Doc. FUND/A/ES.1/13 Annex I (1980).


183. See CLC, supra note 159.

184. CLC, supra note 159, art. V (3).

185. CLC, supra note 159, art. III (4), provides:

No claim for compensation for pollution damage shall be made against the owner otherwise than in accordance with this Convention. No claim for pollution damage under this Convention or otherwise may be made against the servants or agents of the owner.
against Amoco International in New York to avoid the CLC's low liability limits.\textsuperscript{186} It has been argued that France's action, if successful, will prove disastrous to the CLC's future effectiveness.\textsuperscript{187}

2. Evaluation

The Transnational Litigation Method places the right to file claims with the victims themselves. It removes the issue from the political sphere, where victims' interests might be subordinated to nations' diplomatic interests,\textsuperscript{188} and thus conceivably increases the likelihood of compensation. While victims who pursue their claims may find that the polluter's liability is limited in amount,\textsuperscript{189} some amount of compensation is generally ensured by the common requirement that potential polluters have the financial resources to meet their potential liability.\textsuperscript{190}

Placing the right of suit with the victims also places with them the costs of the action, thereby discouraging frivolous suits and encouraging efficiency in the suits brought. High transnational litigation costs, however, may prevent victims with small claims from seeking compensation transnationally.\textsuperscript{191} High costs, added difficulty in presenting evidence, and possible unfamiliarity with the language and legal procedures of the foreign forum, may induce victims to prefer foreign enforcement of their own courts' judgments over access to foreign forums.\textsuperscript{192}

The Transnational Litigation Method provides the polluting operator with an incentive to prevent future harm. Although it may not

\textsuperscript{186} Republic of France v. Amoco International Oil Company (N.Y.S.D. Civil Action #78 Civ. 4313) (transferred to the Northern District of Illinois for coordination or consolidation with other actions, In Re Oil Spill by “AMOCO CADIZ” off the Coast of France on March 16, 1978, 471 F.Supp. 473 (J.P.M.D.L. 1979)).

\textsuperscript{187} Concerning this action, one commentator has written:

It is true, of course, that France is bound . . . only in relation to other CLC State Parties and the French Government's case in the American courts apparently relies on the fact that the United States is not a party to CLC and that these jurisdictional restrictions do not therefore apply in an action brought in the United States against Amoco International Co., an American corporation, as the agents of the owner. Whatever the merits of this argument vis-a-vis the United States, it remains a fact that such proceedings are potentially prejudicial to Amoco Transport Co. and its insurers and that Liberia, as the State of registration of that company, has a right to insist that CLC's uniform rules and procedures should be followed. Any decision to the contrary will undermine the basis of CLC and require its overhaul.

Brown, \textit{supra} note 123, at 10.

\textsuperscript{188} See Mingst, \textit{supra} note 139, at 16.

\textsuperscript{189} London Convention, \textit{supra} note 161, arts. 8, 9.

\textsuperscript{190} \textit{Id.}, art. 8.

\textsuperscript{191} The cost of litigation would not be as much of a deterrent in civil law countries where generally the losing party pays the legal fees of both parties. A. VON MEHREN & J. GORDLEY, THE CIVIL LAW SYSTEM 153 (2d ed. 1977).

directly influence the behavior of the polluting nation, the potential for lost governmental revenues from large losses of oil\textsuperscript{193} may produce a sufficient incentive for a nation to be cautious in its regulation of offshore development.

The character of a region greatly influences the form the Transnational Litigation Method will take. When nations in a region have legal systems reflecting essentially the same commitment to compensation, equitable results may be achieved by merely opening domestic courts to foreign claimants. For example, success in establishing the progressive Nordic Convention\textsuperscript{194} has been explained by the circumstance that "the four countries involved have fairly similar legal structures and . . . prevailing values and standards in their societies correspond to a large extent."\textsuperscript{195} On the other hand, when a region is composed of nations with widely divergent legal systems, vastly different commitments to compensation, and varying degrees of exposure to risk, negotiation of an independent body of law may be necessary. Ironically, the very factors that necessitate negotiation may, if reflective of substantial political differences, effectively preclude the success of the negotiating effort.

\textbf{C. The Settlement Method}

\textit{I. Perspective}

Under the third approach to compensating victims of transnational pollution, private parties or nations prospectively agree to an extrajudicial settlement of claims. Nations have utilized settlement arrangements in other contexts,\textsuperscript{196} but no intergovernmental prospective settlement agreement currently addresses offshore oil development. National governments have, however, played a significant role in establishing private prospective settlement agreements governing offshore oil pollution.

The Offshore Pollution Liability Agreement (OPOL),\textsuperscript{197} was in large part inspired by the requests of nine nations in northwestern Eu-

\textsuperscript{193} Nearly ninety million dollars worth of crude oil revenues were lost in the IXTOC I Blowout. I. MANNERS, supra note 40, at 99 (1982).


\textsuperscript{195} I. VAN LIER, supra note 3, at 189.

\textsuperscript{196} As a recent example of a retroactive settlement agreement see Declaration of the Government of Algeria Concerning the Settlement of Claims by the United States and Iran, \textit{reprinted in} 20 I. L. M. 230 (1981).

OPOL is a private agreement under which sixteen North Sea offshore operators have agreed to strict liability, with certain exceptions for up to $25 million of the damages from each incident of offshore oil spillage. The parties guarantee payment of claims if the responsible party fails to honor the agreement. Compensation to the pollution victim is therefore ensured, and OPOL members themselves assume the burden of seeking reimbursement from the responsible party. If there is a dispute between a claimant and a signatory operator concerning the applicability of OPOL, the agreement provides that either party may request referral of the dispute to binding arbitration. Furthermore, a claimant may possibly sue as a third party beneficiary to enforce the terms of OPOL against the operator in breach.

A "public" prospective settlement agreement analogous to the private OPOL arrangement is an additional option for nations seeking to implement a compensation scheme. The nations of a region would

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199. The operators party to OPOL represented Amoco, British Petroleum, Burmah Cluff, Conoco, Exxon, Gulf, Hamilton, Mobil, Phillips, Shell, Siebens, Signal, Sun Oil, Texaco and Total. M. Summerskill, Oil Rigs: Law and Insurance 378 (1979). OPOL currently extends geographically to only the nations of the North Sea region, but provisions exist for expanding its coverage. OPOL, supra note 197, cl. X, at 1414. OPOL initially applied only to the waters of the United Kingdom; it now applies to the waters of Denmark, France, Norway, the Netherlands, Ireland and West Germany. M. Summerskill, id., at 379.

200. The exceptions are (1) acts of war and certain natural phenomena, (2) intentional acts of third parties, (3) negligence or wrongful act of a government, and (4) acts or negligence of the claimant. OPOL, supra note 197, cl. IV(B), at 1412-13.

201. M. Summerskill, supra note 199, at 377. The parties originally agreed to an upper limit of $16 million. OPOL, supra note 197, cl. IV(A), at 1412.

202. OPOL is patterned after similar private arrangements relating to the shipment of oil: (1) Tanker Owners Voluntary Agreement Concerning Liability for Oil Pollution (TOVALOP), Jan. 7, 1969, reprinted in 8 I.L.M. 497 (1969), and (2) Contract Regarding an Interim Supplement to Tanker Liability for Oil Pollution (CRISTAL), Jan. 14, 1972, reprinted in 10 I.L.M. 137 (1971). The most recent version of TOVALOP may be obtained from the International Tanker Owners Pollution Federation Ltd., Plantation House, 31-35 Fenchurch Street, London EC3; the most recent version of CRISTAL may be obtained from Marine Pollution Compensation Services Ltd., 51 Berkeley House, 15 Hay Hill, London W1. For general discussions of these agreements, see D. Abecassis, Oil Pollution from Ships 235 (1978); R. M’Gonigle & M. Zacher, Pollution, Politics and International Law: Tankers at Sea 157, 178 (1979); Becker, A Short Cruise on the Good Ships TOVALOP and CRISTAL, 5 J. Mar. L. & Comm. 609 (1974).

203. OPOL, supra note 197, cl. III(2), at 1412; M. Summerskill, supra note 199, at 383.

204. OPOL, supra note 197, cl. IX, at 1414.

205. Because OPOL is regarded as a contract governed by English law, it should be noted that third party rights are not recognized under English law. Tweddle v. Atkinson [1861] 1 B. & S. 393, 398. Parties may be able to attain similar rights under the constructive trust doctrine. Les affreteurs Reunis S.A. v. Walford [1919] A.C. 801.
agree to strict liability, with certain exculpations, for oil pollution damage arising from their respective areas. Likewise, the nations would guarantee to fulfill the obligations of any defaulting nation. To be parallel to OPOL, a “public” settlement arrangement would have to grant guarantor nations a right of action against a defaulting nation in an international tribunal. Where nations are the contracting parties, therefore, the Settlement Method does not truly sidestep the barrier of sovereignty because the consent of the nations involved is still required to ensure ultimate enforcement. Thus, the Settlement Method for nations carries with it the same problem inherent in any public international solution: consent.

Public prospective settlement agreements have an advantage, however, which makes them more likely to be implemented than other public solutions: they resolve the compensation problem while minimizing general precedent regarding nations’ duties under international customary law. Generally, officials of a nation are faced with a “continuing tension between [their] desire to maintain [their] own flexibility and freedom of maneuver to cope with changing circumstances and [their] desire for certainty and predictability on the part of foreign officials.” Because an international law regime may be regarded as evidence of international customary law, nations may be deterred from endorsing such arrangements by apprehensions of possible adverse doctrinal implications for other areas of their foreign relations.

Prospective settlement agreements, however, may be clearly drafted without opinio juris and may thus have no legal implications beyond the specific subject matter at hand. For example, during the

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206. Member nations should also include provisions requiring either proof of financial resources necessary to meet potential liability or proof that under domestic laws such resources might be collectable from the offshore operator. See infra note 221.

207. As Professor Bilder notes, “[e]xperience suggests that risk is a major reason why nations fail to reach otherwise mutually useful agreements. Where a nation sees a prospective agreement as involving substantial risks, and it cannot find some way of compensating for or controlling them, it will often choose not to enter into the agreement.” R. Bilder, supra note 127, at 12.


209. State practice and opinio juris sive necessitatis are the two accepted and much debated prerequisites of a norm generating custom. Opinio juris means that a nation pursues and accepts a certain practice because it believes it is expected to conform to such a pattern of conduct. See F. SAVIGNY, 1 SYSTEM OF THE MODERN ROMAN LAW 141-42 (Holloway trans. 1867). See also S.S. Lotus (Fr. v. Turk.) 1927 P.C.I.J., ser. a., No. 9 (Judgment of Sept. 7).

210. However, it must be recognized that a prospective settlement arrangement does not replace liability currently possible at law. The preface to OPOL states:

This acceptance of strict liability cannot supplant [legal] liability but it does provide a means of dealing with claims that is simpler and more satisfactory both to the claimant and to the operator.

M. Summerskill, supra note 199, at 381. Likewise, a public prospective settlement agree-
American atmospheric nuclear testing in the South Pacific ocean, Japanese fishermen suffered both personal injuries and property damage from radioactive fallout.\textsuperscript{211} The United States government provided compensation in the form of an \textit{ex gratia} payment,\textsuperscript{212} simultaneously stating that it in no way recognized an obligation to compensate the Japanese victims.\textsuperscript{213} Although the payment was retroactive, not prospective, it demonstrates that liability under a public settlement arrangement may be accepted explicitly as a matter of convenience rather than as a matter of law. Therefore, the decisions of the tribunal chosen by a prospective settlement agreement, and the agreement itself, would most likely not serve as evidence of international customary law.\textsuperscript{214} This may be of great significance to nations concerned with their potential liability for problems other than offshore spills. For example, precedent from a decision concerning accidental oil pollution may have implications for decisions concerning pollution arising operationally.\textsuperscript{215} Although nations may be willing to agree to liability for transnational pollution that arises accidentally, many may be very reluctant to accept liability for that arising continuously from a valuable domestic activity.\textsuperscript{216}

2. Evaluation

The Settlement Method is relatively efficient because it is more

\footnotesize{\textsuperscript{211}} 32 DEP'T ST. BULL. 90 (1955).

\footnotesize{\textsuperscript{212}} \textit{Id.}

\footnotesize{\textsuperscript{213}} Similarly, in the Texas City Disaster, the Congressional Committee which appropriated funds to meet claims stated:

\textit{Since, . . . , the Supreme Court of the United States has held that there is no legal liability on the part of the Federal Government for this disaster, the committee feels that all payments hereunder, since they are to be in the nature of a grant rather than in payment of a lawful obligation, should be limited to amounts not in excess of $20,000 . . . .}

\textit{HOUSE COMM. ON THE JUDICIARY, TEXAS CITY DISASTER, H.R. Rep. No. 1305, 84th Cong., 1st Sess. 3 (1955). The earlier Supreme Court decision alluded to is Dalehite v. United States, 346 U.S. 15 (1953) (no government liability under the Tort Claims Act for damages from Texas City explosion because claim is based on exercise of discretionary function).}

\footnotesize{\textsuperscript{214}} \textit{See supra} note 209 and accompanying text. It has been argued that consistent practice in itself in certain cases is sufficient to generate custom. \textit{See, e.g., Brief for the United States as Amicus Curiae at 25, Kalamazoo Spice v. Ethiopia, No. 82-1521 (6th Cir. filed July 15, 1982). In this instance, inasmuch as regional agreements may take a variety of forms, there will most likely not even be a consistency of practice.}

\footnotesize{\textsuperscript{215}} \textit{See} lanni, \textit{supra} note 134, at 265.

\footnotesize{\textsuperscript{216}} On the other hand, nations of a region may be unwilling to separate the resolution of accidental and operational transnational pollution problems. For example, Mexico refused to resolve the accidental IXTOC I transnational oil pollution problem without concurrent resolution of the operational Colorado River transnational salinity problem. \textit{See supra} note 90 and accompanying text.
simple and hence less costly than litigation. Even if a settlement agreement potentially provides less compensation than may be recovered from the other two methods, the saving of litigation costs may keep the option of settlement attractive to transnational pollution victims. Furthermore, prospective settlement arrangements may effectively ensure compensation through guarantees that signatory parties will cover the debts of polluting parties who default.

Despite their advantages, private settlement arrangements do not foreclose the need for public solutions. The operators drafting a private agreement have private interests which they will inevitably seek to protect. The potential conflict between private goals and public interests may lead to the execution of agreements that are less protective and more conservative in compensation terms than public solutions. Eventual implementation of a public method is therefore still desirable.

D. Combining Methods

The three methods discussed above are not all mutually exclusive. A compensation scheme may combine several methods, either simultaneously or sequentially, to best attain its objectives.

There are several reasons why nations may wish to combine the Transnational Litigation Method with the International Law or Public Settlement Methods. First, if a transnational arrangement does not require parties to show adequate financial resources to meet their potential liability, compensation may depend upon whether the polluting nation is concurrently or residually liable. Moreover, private and public methods complement one another in that together they directly influence the behavior of both the licensing nation and the polluter. Finally, because both the private operator and the nation permitting development may be responsible for the pollution damage, each should arguably be liable for an equitable portion of the liability.

217. M. Summerskill, supra note 199, at 381.
218. See J. Schneider, supra note 5, at 172.
219. Preserving the negotiated integrity of a private method independent body of law requires that private transnational litigation between parties not be possible outside of the independent body of law. See supra text accompanying notes 182-187. In general, however, the other methods may be combined either simultaneously or subsequently.
220. Several international agreements facilitating private suits have attempted to ensure financial accountability. See, e.g., London Convention, supra note 161, arts. 8, 9.
221. See generally Handl, supra note 117, at 525-27. For an argument that the State should be liable first and the individual should be residually liable, see Comments of H. Blix, in The Protection of the Environment and International Law 507 (A. Kiss ed. 1975).
222. Two years after the AMOCO CADIZ oil spill, the breakup of the TANIO in the same area prompted M. Aymar Achille-Fould, President of the Interministerial Sea Mission, "to repeat once again the French argument that, as most of the 500 million tons of oil needed by Europe are shipped round the Brittany coast, then countries importing the oil
To public package schemes should be added the private prospective settlement method. Because coverage of a geographic region under a private settlement scheme does not depend upon the consent of the nations of the region, there are fewer political barriers to delay implementation. For example, the Tanker Owners Voluntary Agreement Concerning Liability for Oil Pollution (TOVALOP) came into effect a month prior to the 1969 Civil Liability Convention Conference, covered fifty percent of the tanker tonnage of western nations, and was the prime international mechanism for compensating for oil pollution damage during the seven years required for the CLC to come into force.223

The importance a region's nations should attach to the encouragement of private OPOL-type agreements is a function of the time they estimate to be required for establishment of a public solution. If they agree that a treaty will take a unreasonably long time to enter into force, or that it may not comprehensively cover the region, they should call upon the offshore operators to establish a private prospective settlement agreement similar to OPOL. Even after a public solution is in place, a private settlement arrangement will remain an important supplementary mechanism for nations not covered by the public solution. Moreover, the greater efficiency of the private settlement method should allow it to remain a competitive alternative.224

CONCLUSIONS

Of all the methods to ensure compensation for transnational pollution (summarized in Table II), the International Law Method is the least likely to be adopted in the near future. Since 1978, the International Law Commission has been attempting to draft articles detailing the international law pertaining to state liability for transnational pollution.225 This inquiry may eventually reduce much of the uncertainty nations feel on this point of international customary law. But nations will undoubtedly still be reluctant to become parties to agreements that may have adverse doctrinal implications for other areas of law, including those affecting such difficult problems as the pollution of international rivers and acid rain.

One scholar notes that the international community has responded to problems of transnational pollution primarily by strengthening "the
### TABLE II
**SUMMARY OF PROSPECTIVE METHODS FOR RESOLUTION**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Example</th>
<th>Implementing Instrument</th>
<th>Initiating Transnational Actors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>International Law</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compulsory Dispute Settlement Provisions in the Law of the Sea Convention</td>
<td>Treaty provision specifying, <em>inter alia</em>, consent to jurisdiction, the terms of adjudication and the governing international tribunal</td>
<td>Nations of region</td>
<td></td>
</tr>
<tr>
<td><strong>Consent</strong></td>
<td>The Nordic Convention (1974)</td>
<td>Coordinated domestic legislation or Treaty provisions providing for equal access and mutual recognition</td>
<td>Supranational organizations (OECD), NGOs (ABA/CBA), and the nations of the region</td>
</tr>
<tr>
<td><strong>Consent plus negotiated body of law</strong></td>
<td>The 1976 London Convention</td>
<td>Treaty provisions providing a jurisdiction scheme and the applicable law</td>
<td>Supranational organizations (UNEP) and nations of the region</td>
</tr>
<tr>
<td><strong>Public</strong></td>
<td>None</td>
<td>Agreement between nations with compromisory clause to ensure performance</td>
<td>Nations of region</td>
</tr>
<tr>
<td><strong>Settlement</strong></td>
<td>OPOL, TOVOLOP, CRISTAL</td>
<td>Contract between Operators</td>
<td>Industry, perhaps at the request of the nations of the region.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Relative Likelihood of Implementation</td>
<td>Attainment of Objectives of Compensation Scheme</td>
<td>Relation to the Nature of the Region</td>
</tr>
<tr>
<td>-----------</td>
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<td>-----------------------------------</td>
</tr>
<tr>
<td>International Law</td>
<td>Most unlikely because acceptance carries with it uncertain immediate and long-term implications</td>
<td>-often a long and burdensome process -costs placed on the polluting nation, not directly on the polluter -award not directly made to victim -the interests of the victims may be subordinated to the political interest of their nation</td>
<td>Facially related to the number of nations in the region</td>
</tr>
<tr>
<td>Transnational Litigation</td>
<td>Low, because few regions have laws and systems sufficiently alike to equitably allow only jurisdictional consent</td>
<td>-transnational procedures are often quicker and less costly than those under the International Law method -disparity in legal systems or loopholes in negotiated regimes may lead to inequitable results</td>
<td>-number of nations -distribution of risk because of location of oil -distribution of risk because of circulation -distribution of risk because of environmental sensitivity -similarity of legal systems involved</td>
</tr>
<tr>
<td>Consent plus required body of law</td>
<td>High</td>
<td>-as a settlement device, compensation may be less -procedures are relatively simple and thus litigative costs are less -the risk of litigation is transferred to the contracting parties -may be put in effect as a system quickly</td>
<td>Facially related to the number of nations in the region</td>
</tr>
<tr>
<td>Public</td>
<td>Unclear, not employed as of yet</td>
<td>-as a settlement device, compensation may be less -procedures are relatively simple and thus litigative costs are less -the risk of litigation is transferred to the contracting parties -may be put in effect as a system quickly</td>
<td>Related primarily to the will of the operators</td>
</tr>
<tr>
<td>Private</td>
<td>High</td>
<td>-as a settlement device, compensation may be less -procedures are relatively simple and thus litigative costs are less -the risk of litigation is transferred to the contracting parties -may be put in effect as a system quickly</td>
<td>Related primarily to the will of the operators</td>
</tr>
</tbody>
</table>
transnational accountability of the private actors” through transna-
tional litigation regimes.226 Nations’ apparent preference for private
liability over public liability may to a degree reflect their desire to
channel liability away from themselves. Whatever the motivation, it is
apparent that the Settlement Method, in conjunction with the Transna-
tional Litigation Method, will be the most productive avenue for reso-
lution in the near future. The oil industry, justifiably proud of the
achievement of its OPOL arrangement, should be called upon to
achieve similar settlement arrangements in other regions of the world.
The virtually unexplored possibility of public prospective settlement
agreements should also be seriously pursued, in light of their many
advantages.

It is ironic that almost all of the above methods for resolution de-
pend upon nations that, as a whole, are not favorably disposed to the
task. Nations may be reluctant to achieve international solutions in
this area because of the problems discussed above. The primary obsta-
cle, however, is the apparent absence of political pressure sufficient to
compel nations to act. Today’s world places many demands on the re-
sources that nations commit to the resolution of international problems.
For the majority of nations, diplomats must represent their nations’ in-
terests in several areas simultaneously. Given such a context, avoida-
ble international problems often must reach crisis proportions in order
to be properly addressed.227 Public outcry over a series of catastrophic
oil tanker accidents, for example, brought about a flurry of interna-
tional activity over the past decade.228 Whether crisis will play a simi-
lar role in the resolution of the offshore oil pollution problem is
unclear.

It is highly encouraging that many transnational actors other than
nenations have sought resolution of the compensation problem. Supra-
nationally, OECD229 and UNEP230 have made substantial contributions.
Domestic professional organizations such as the American and Cana-
dian Bar Associations231 seek to facilitate compensation by working to-
gether. Private industry’s OPOL arrangement remains the most visible
mechanism in force for compensating transnational pollution victims in

226. *State Liability, supra* note 117, at 525. A UNEP group of experts has stated that
“inter-state litigation involving lengthy and complex procedures might not be the only way
of dealing with reparations for damage,” and has emphasized the need to search for “low
level solutions” such as transnational litigation. *Liability for Pollution and other Envi-
ronmental Damage and Compensation for such Damage: Report of the United Nations Envi-
228. Fitzmaurice Address, *supra* note 198.
229. See *supra* note 142.
230. See *supra* notes 6-12 and accompanying text.
231. See *supra* note 157 and accompanying text.
this area.232 Finally, citizens' organizations may contribute to the resolu-
tion of the problem.233

The inadequacy of national responses and the growing involve-
ment of other transnational actors are two sides of the same coin. The
increasingly complex interrelationships in the world have placed tre-
mendous strains on the nation-state system's ability to promote world
order. Yet new actors have assumed part of the burden because the
industrial and computer revolutions that have given rise to the com-
plexity of today's world have also given rise to the productivity to sup-
port the operation of international organizations and to the technology
that enables private associations to operate in the international
arena.234 Because the initiators of resolution will span the spectrum of
transnational actors, it is essential that nations recognize the increas-
ingly important role such new global actors will play in addressing the
transnational pollution problem.

The growing array of transnational actors faces the challenge of
tailoring compensation schemes for transnational offshore oil pollution
to the particular needs and nature of their regions. The degree to
which compensation programs will be successful will inevitably depend
upon the creativity of those who pursue this challenge.

232. See supra notes 197-205 and accompanying text.
233. For example, Canadian citizens have been encouraged to become actively involved
in resolving the acid rain dispute. Moorman, The Role of Canadian Citizens in Dealing with
the United States on the Acid Rain Question, in COMMON BOUNDARY/COMMON PROBLEMS,
supra note 16, at 78.

For a general discussion of the development and growth of nongovernmental environ-
mental organizations, see R. BOARDMAN, INTERNATIONAL ORGANIZATION AND THE CON-
234. One noted commentator foresaw the importance of this role several decades ago:
[The] emphasis of the law is increasingly shifting from the formal structure of the
relationship between States . . . to the development of substantive rules on matters
of common concern vital to the growth of an international community and to the
individual well-being of the citizens of its member States. We shall also find that
as the result . . . the subject matter of the law increasingly includes cross-frontier
relationships of individuals, organizations and corporate bodies . . .