Natural Resource Valuation and Damage Assessment in Nigeria

A Comparative Analysis

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Acknowledgments

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EXECUTIVE SUMMARY

Oil fields are abundant in the Niger Delta and provide the Nigerian government with much of its revenue. Environmental damage caused by oil production activities including exploration, drilling, production, transportation, and refining threatens biodiversity of the Niger Delta and the livelihoods of its inhabitants. Many of the people in the Niger Delta depend on the abundant natural resources of the delta for fishing, herbal medicines, food, fiber, and other uses. This report examines the methods used to place a value on environmental damage and the legal frameworks that United States, Nigeria, Kenya, and international law provide to compensate for injuries to natural resources caused by oil pollution. Placing an appropriate value on the environmental damage is important to ensure that oil companies take necessary precautions to avoid and abate damage caused by oil pollution, while providing compensation to the people that use and rely upon the damaged natural resources.

Various economic methods can be used to assign a value to injured natural resources. Market valuation methods determine the value of goods or services provided by the resource by using prices for those goods or services as traded in the market. Three recognized market valuation techniques are the market price approach, appraisal method, and resource replacement cost. The benefit of such techniques include that the values are relatively easy to measure and are observable. A major drawback of such techniques is that they do not capture the value of subsistence use of natural resources that are not traded in the market. Furthermore, market valuation methods do not place a value on nonuse values, such as the economic value people place on assuring that future generations will be able to use the natural resource. Nonmarket valuation methods use indirect measures relying on behavior of people or surveys to determine the economic value of natural resources. Nonmarket techniques include the travel cost method, hedonic price method, factor income, and contingent valuation. Nonmarket valuation methods are capable of determining values for subsistence use of natural resources and nonuse values. These methods can be expensive as they rely on surveys or extensive collection of data and contingent valuation has been criticized as being inherently inaccurate.

The focus of this report is to compare natural resource valuation in Nigeria to liability and valuation schemes of other countries. First, the principles and methods of natural resource valuation will be examined. Rules issued by the United States government provide some guidance on measuring natural resource damage, while the laws of other countries and international agreements provide less guidance. The U.S. statutes and regulations are among the most comprehensive in terms of natural resource damage and valuation, and therefore this paper will discuss the U.S. approach in detail. A description of Nigerian law and practice follows. To provide a comparison in an African context, the paper will also examine a statute in Kenya that provides for some level of compensation for environmental damage. Finally, the report also discusses international agreements that have natural resource damage and compensation provisions, with particular attention to agreements that Nigeria has signed. There is some indication that international law is evolving to adopt a framework for compensating environmental damage similar to that found in U.S. law.

The concept of recovering for damage to natural resources emerged in the United States in the 1970s, when Congress recognized that penalties were not sufficient to provide

compensation for environmental damages and incorporated natural resource damage provisions into various statutes, in order to fulfill the common law principle of making the plaintiff whole. Natural resource damage provisions occur in two sets of statutes. One set focuses on the type of contaminant, oil and hazardous substances, and includes the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Oil Pollution Act (OPA). Another set of statutes focuses on the resource and includes liability for injuries to the resource from any source and includes the National Marine Sanctuary Act and the Park System Resource Act. The U.S. approach is based on full compensation, requiring both restoration or replacement of an injured resource *and* compensation for interim losses in order to make the public whole.

Nigerian law does not recognize natural resource damage specifically; however, recovery for damage to property may be obtained through common law, Nigerian statutes or international law. Many claims for property damage are brought through common law, because a majority of the statutes and regulations in Nigeria do not confer a right of private action. Nigerian statutes, including the Federal Environmental Protection Agency Act (FEPA), the Oil Pipelines Act, and the Petroleum Act, provide authority for recovery for damages to natural resources, but these laws could be improved in several aspects to bring Nigerian law into accord with the norms of developed countries. In comparison, Kenya has enacted a statute that gives standing for anyone to compel persons responsible for environmental degradation to restore the environment to its immediate condition prior to the damage as far as practicable. Unlike the United States and Kenya, Nigerian law does not reflect the principle that the remedy for injury to the environment is restoration.

This report concludes with recommendations for improvements to Nigerian law and practice of compensation for damage to natural resources. These recommendations include:

- reducing the disparity in bargaining position between claimants and oil companies;
- providing a mechanism, such as a trust fund administered by the government, to pay claimants early in the process so that the need to maintain their livelihood does not force them to accept inadequate offers of compensation;
- clarifying the legal standard of liability to be strict liability, requiring claimants only to show that the discharge was caused by the defendant and that the claimant suffered injury as a result;
- eliminating restrictions on what bodies of water are subject to statutes requiring compensation;
- consider requiring restoration or replacement of injured resources in addition to compensation for loss of use of the resources;
- allowing compensation for all uses of resources, including non-market uses such as for subsistence and religious purposes;
- allowing compensation for nonuse values such as existence value of resources; and,
- establishing a uniform system of compensation applicable to any person or entity that causes damage to natural resources.

Niger Delta

Nigeria is an oil rich country, one of the largest exporters of oil in the world. Its economy depends heavily on the resource -- oil accounts for 90-95 percent of Nigeria's exports and nearly 80 percent of its revenue. The vast majority of Nigeria's oil fields are located in the Niger Delta, and the area has suffered severe environmental damage over the last 50 years of oil exploitation. More than 4,000 oil spills have been recorded in Nigeria's Niger Delta over the past four decades.

The intensive extraction of oil and gas in the Niger Delta threatens not only Nigeria's natural resources and incredible biodiversity, but also the livelihoods and other development activities of the region's communities that depend upon natural resources for their existence. The limitations of the existing framework for valuing and compensating natural resource damage wrought by oil and natural gas development activities in the Delta, and throughout Nigeria, has led to the undervaluation of natural resources lying outside of modern channels of commerce. In particular, Nigeria has failed to provide for the appropriate valuation of damage to ecosystems and their components that have little or no value in national or international trade yet are fundamental to the survival and well-being of local communities. This, in turn, has contributed to resource degradation, conflict, and regional destabilization.

Substantial controversy and unrest surround oil exploitation in the Niger delta. Multinational oil companies contend that their facilities and clean-up operations meet international standards. Meanwhile communities continue to report fraudulent cleanups, the use of crude pits to bury oil waste, and ongoing damage.[1] The Nigerian judicial process can be slow; for instance, a judgment from an oil spill in 1970 that required Shell Petroleum Development Corporation (SPDC) to pay approximately $40,000,000 is being appealed by SPDC, and it is not known when the judgment will be enforced.[2] A typical case would take five to six years to reach judgment and, if unfavorable to an oil company defendant, another five years in a likely appeal.[3]

Natural Resource Valuation

Assessing damages to the environment can be a difficult and controversial task. The conceptually simple task of valuing the economic value of direct use of natural resources such as consumption of fish and game, use of wood for firewood, construction or furniture, and use of water has proved difficult in subsistence communities in Africa.[4] Such direct use values are, however, only the starting point for a complete valuation of natural resources. Some people

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[1]The Guardian (Nigeria) August 20, 2002.

[2] Legborsi Saro Pyagbara, The Ogoni of Nigeria: Oil and Exploitation (2003).

[3]Interview June 27, 2003 Dr. Bola Fajemirokun, Lagos, Nigeria.

[4]William Cavendish, Quantitative Methods for Estimating the Economic Value of Resource Use to Rural Households (2001) (Case Study in Zimbabwe).

question whether it is possible to place a value on a unique vista, dead birds or a soiled beach. Yet individuals and societies do place monetary values on such resources in a variety of contexts. In addition to the philosophical issues raised in putting a monetary value on natural resources, establishing an appropriate value has become more difficult and controversial as values that are not easy to measure, such as the value to individuals and society of the knowledge of the existence of the resource, have been recognized as legitimate. However, placing an appropriate value on natural resources allows courts and other institutions to assess damages for environmental harm, create incentives to prevent future harm, and ensure protection for natural ecosystems and the communities that depend on them.

Natural resources are often defined as the individual elements of the natural environment that provide economic and social services to human society. Traditional definitions of natural resources were limited to resources providing quantifiable economic products, such as timber, agricultural land, and industrial minerals. Moreover, consideration of economic products often is limited to those traded in a market, ignoring the economic value of subsistence use. In addition, the definition of a natural resource has expanded to include ecosystem processes and ecological elements that provide services, such as purification of air and water, flood control, detoxification and decomposition of wastes, and formation and maintenance of fertile soils. For example, a wetland provides filtration services that improve and maintain water quality and habitats. It is also recognized that people value knowing that the resource exists even if they are not actively using it or visiting it; such values are often referred to as nonuse values. An appropriate value of the natural resource would take into account all of these nonuse values, in addition to the use values.

Recognizing that penalties do not place the appropriate value on natural resources, a recent body of law has developed in connection with "natural resource damage assessment" (NRDA). Natural resource damage can be defined as the sum of losses in use and nonuse values resulting from injury to the quantity or quality of service flows of the natural resource.[5] Natural resource damage provisions enhance the common law theory "to make whole the injured plaintiff" by making the public whole for the injuries to natural resources. The objective of natural resource damage provisions is to restore the injured resources to the condition in which they would have been but for the incident and compensating the public for the interim loss.[6] Interim losses refers to the period that it takes to restore, replace or acquire the equivalent resources lost.

"Command and control" environmental laws, where penalties are imposed upon those

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[5]William Schulze, *Use of Direct Methods for Valuing Natural Resource Damages*, *in* VALUING NATURAL ASSETS: THE ECONOMICS OF NATURAL RESOURCE DAMAGE ASSESSMENT (1993).

[6]Valerie Ann Lee, P.J. Bridgen & Environment International Ltd., THE NATURAL RESOURCE DAMAGE ASSESSMENT DESKBOOK: A LEGAL AND TECHNICAL ANALYSIS, 2, (2002).

who violate environmental statutes, are not sufficient to ensure that the polluter internalizes the costs of his activities. A key goal of environmental regulations is to eliminate externalities, forcing the polluter to internalize costs so the price of the product or service reflects all costs that go into making the product, such as destruction of wetlands, forests or crop land, and pollution of water. Externalities are costs of an activity that are not incorporated into the price of the product and are borne by others, often by society. For example, an industry that pollutes a river consumes clean water – killing river life and thereby reducing the income or pleasure of fishermen that fish in the river, reducing the pleasure of boaters, and increasing the cost of water purification to downstream residents who drink the water and downstream farmers who use the water for irrigation. These costs are not included in the market price of the industry's product, and it can be difficult to set a penalty that appropriately captures these costs. NRDA can be an effective tool to ensure that the total costs of the activity are internalized through holding a party liable for all damages that are the result of the activity, including damages to the environment.

Numerous approaches are used to assign value to natural resources; however, the approaches fall into two groups, those that measure use values and those that measure both use and nonuse values. The former are the least controversial of methods, because use values are observable and are easier to measure than nonuse values. "Use value is not limited to consumptive measures, such as timber production or crop yields. They also include nonconsumptive uses such as recreation in a resource area and indirect use values, such as the value of plankton in a food chain."[7]

Nonuse values are often described as the "economic value one places on assuring that future generations will be able to enjoy unspoiled natural resources, or the value one places on the assurance that other members of the current generation will be able to enjoy the resource."[8] Nonuse values are not observable because often people may never use the particular natural resource themselves, yet they value the resource in the sense that they are willing to give something up to obtain and preserve the natural resource. Economists have termed the value people place on preservation and protection a nonuse value and are able to measure the nonuse value as the tradeoff an individual is willing to make, giving something up (often money) to ensure that a natural resource is protected.[9] There are several subcategories of nonuse values: "existence value" represents the benefit that people receive and would be willing to pay for the knowledge that a natural resource exists; "option value" represents the amount that people would be willing to pay so they might have the opportunity to use the natural resource in the future; and

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[7]James Peck, *Measuring Justice for Nature: Issues in Evaluating and Litigating Natural Resource Damages,* 14 J. LAND USE & ENVTL. LAW 275, 281 (1999).

[8]Raymond Kopp, Testimony to the U.S. House Subcommittee on Water Resources and Environment, Committee on Transportation and Infrastructure, July 11, 1995.

[9]*Id.*

"intrinsic value" is the inherent value of natural resource, independent of human use.[10]

Review of Natural Resource Valuation Techniques

The techniques used to value natural resources have evolved over time. The traditional approach under common law was to measure the damages for harm to land as the difference between the value of the land before the harm and the value of the land after harm. A property owner may choose to receive the cost of restoring the land to its pre-injury condition. However, restoration is only appropriate when 1) cost of returning the land to its normal condition is not disproportionate to the decrease in value of the land; or 2) the owner has a personal reason for restoring the land to its original condition.[11]

As the definition of natural resources broadened to include nonuse values and services, methods of valuation have been developed to account for nonmarket values. These techniques are often classified as either direct methods, which measure the value, or indirect methods, which measure the value revealed by the behavior of people. The discussion below will refer to the U.S. Oil Pollution Act (OPA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulations because they provide guidance in determining natural resource damages.[12] Each of these methods has strengths and weaknesses and will be briefly described below.

Market Valuation

Market valuation provides a well accepted, relatively certain measure of resource value, as the value of the resource is reflected in the price for resources traded in a market. The compensable natural resource damage is the total loss of market value for each element and the value of the loss of services provided by the resource. There are three recognized market valuation techniques: market price approach, appraisal method, and resource replacement cost. The market price approach identifies all the elements damaged and assigns values to their loss by their market prices. The appraisal method is designed to determine the difference in "with injury" and "without injury" appraisal for land and apply that difference to the injured resource to measure compensable value. This approach is based on the principle that people will pay less for land that is in or around contaminated sites than they will for land "without injury." The appraisal method assumes there is a market for land and is less useful where private property rights are limited. Resource replacement cost is the cost of acquiring comparable natural resources for conservation.

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[10] Frank B. Cross, *Natural Resource Damage Valuation,* 42 VAND. L. REV. 269 (1989).

[11] Restatement (Second) of Torts.

[12] Congress required the Department of the Interior and the National Oceanic Atmospheric Administration to promulgate regulations containing the "best available" procedures for the assessment of injury and estimation of damages. Lee et al., *supra* note 6, at 282.

All of these market techniques are appealing because they are relatively easy to measure and seem reliable because they are observable. Market valuation is less suited to valuing subsistence use of natural resources or uses of products that are not traded in a market. In addition, market valuations are not capable of encompassing the nonuse values or some use values of natural resources and, therefore, do not reflect the full value of the damaged public natural resource. Natural resources are often unique and have values that are not traded in a market. Market valuation is generally accepted as not reflecting the true value of natural resources.[13] Therefore, use of these techniques alone may not be consistent with the tort principle that damages are to make the plaintiff whole because they do not incorporate nonuse values.

Nonmarket Valuation

Nonmarket valuation methods use indirect measures to determine the economic value on natural resources. Nonmarket techniques include the following: travel cost method, hedonic price method, factor income, and contingent valuation.

The travel cost method uses the travel expenses of visitors to a natural resource or recreational site to value the worth of a certain natural resource or recreational site. This method is used to measure recreational use value, which is particularly important in the United States. This method assumes that the value of the site is equal to or greater than the expenses people incur to visit the site. The cost of visiting includes the direct costs of travel, entrance fees, and other expenses of travel. Travel cost methods may also include indirect costs such as the monetary value for the time spent traveling to and visiting the site. The travel cost method is accepted by most economists, and is probably the most common method for estimating demand in a use valuation, although it does have its limitations.[14] A major criticism of travel cost method is the problem of valuing travel time. People have a range of opportunity costs that they forego when traveling to a site. There is no widely agreed upon method to value the time spent traveling to the site.[15] Furthermore, travel cost methods only capture the recreational use value of the resource and do not reflect any subsistence use by local residents or the existence and intrinsic values. This method only applies when travel is a large part of a household expense, and thus, does not reflect the preferences of those who lack the resources to travel.[16]

The hedonic method can be used to calculate compensable values associated with a

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[13]Peck, *supra* note 5, at 283.

[14]Cross, *supra* note 10, at 310.

[15]Some analysts have suggested valuing recreational travel time at twenty-five percent to fifty percent of an individual's wage, while other analysts propose to use the full wage rate. *Id.* at 311-313.

[16]*Id.* at 311.

decrease in environmental quality in an area or with a reduction in the availability of environmental amenities.[17] Compensatory values are calculated by using regression analysis to measure the effect that environmental quality indicators have on property values. The hedonic method requires a substantial amount of data on the attributes of various properties, including environmental attributes. This method can be very expensive and it is subject to criticism because it is difficult to separate property values that influence each other in multi-variate analysis. The hedonic method is not conducive to valuing natural resources that lack a market or where the market is small. For example, damage to a public park may only be reflected in the property values of those few who live on or in the park.

The factor income method uses market prices of a product in which a natural resource is used in the production process. The factor income approach can be used if the injured resource is an input to a product that has a well defined market price.[18] An example where the factor income approach might be useful is in commercial fisheries, where the cost of the treatment necessary to restore the commercial fishery is used to determine the compensable value. A significant limitation in the factor income method is that it only measures market values, ignoring recreational and nonuse values.

Contingent valuation (CV) is a powerful tool because it has the capacity to measure use and nonuse values simultaneously. This method uses a survey to ask people directly what monetary value they place on identified resources, how much they would be willing to pay for the resource or for measures needed to protect the resource. Contingent valuation provides a direct method of measuring the value of natural resources without resorting to the market valuation method. While the credibility of contingent valuation is growing, it remains controversial because it assumes that people will respond to the survey as they would to a marketplace transaction.

Furthermore, CV results are subject to criticism for having one or more of the following biases: strategic bias (the answers survey respondents give may reflect strategic "gaming" and "free ridership"); starting point bias (the starting bid may influence the respondent to understate or overstate actual willingness to pay if a bidding process is used to determine willingness to pay or willingness to accept); vehicle bias (a respondent may be willing to pay more depending on the hypothetical vehicle, such as entrance fees or taxes); information bias (the way information on the hypothetical program is presented, including its sequence, can affect respondent's willingness to pay or willingness to accept); hypothetical bias (results from a hypothetical situation may not reflect the choice a respondent would make in a real situation);[19] and

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[17]Lee et al., *supra* note 6, at 310.

[18]*Id*. at 307.

[19]"Academics also have pointed to the "warm glow effect", in which respondents may overstate a willingness to pay because of the warm glow they may feel by stating that they would pay more for an environmental improvement than they actually would." Lee et al., *supra* note 6,

operational bias (the fact that the operating conditions in the hypothetical program may not approximate actual market conditions may bias results).

Proponents of contingent valuation argue that through proper survey design and implementation, contingent valuation can be a reliable means to measure the use and nonuse values of a natural resource. After two months of study, a panel convened by the U.S. National Oceanic and Atmospheric Administration (NOAA) co-chaired by two Nobel Laureates in economics concluded, "CV studies can produce estimates reliable enough to be the starting point of a judicial process of damage assessment, including lost passive use values."[20] Contingent valuation is currently the only way to measure passive uses and has become one of the most widely used methods of nonmarket valuation.[21]

Cross-Cutting Methods

Benefit transfer method uses data and results from other studies to estimate a value for the matter at issue, a "transfer" of information from one case to a similar case.[22] For example, damage to one natural resource may "transfer" the contingent valuation study conducted on a similar resource with similar damages. This method is useful when there is no data available specific to the site or when original, in-depth research is too costly or impractical. The drawback is that it may be difficult to find data that applies to the injured resource. To address this problem, the U.S. OPA regulations promulgated by NOAA set three criteria for using benefits transfer under OPA, including: the comparability of the users and of the natural resource and/or service being valued in the initial studies and the transfer context; the comparability of the change in quality or quantity of natural resources and/or service being valued in the initial studies and the transfer context; and the quality of the studies being transferred.[23]

The unit-day value method uses previously measured values of certain recreational activities to measure the lost recreational use value associated with an incident. For example, if an incident results in the loss of use of swimming opportunities on a beach, the lost use value can be estimated from the results of surveys that measure the value of a day swimming and multiplying the value by the number of people who would not be able to swim due to the

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at 316.

[20] Report of the NOAA Panel on Contingent Valuation, January 11, 1993, 43.

[21]Brian Binger, Robert Copple & Elizabeth Hoffman, *The Use of Contingent Valuation Methodology in Natural Resource Damage Assessments: Legal Fact and Economic Fiction,* 89 Nw. U.L. Rev. 1029 (1995).

[22]Lee et al., *supra* note 6, at 319.

[23]NOAA, Natural Resource Damage Assessments; Final Rule, 61 Fed. Reg. 448 (Jan. 15, 1993), 15 CFR 990 (April 1, 2003).

incident. The benefit of this method is that it is simple to use and is especially pertinent to smaller incidents. A criticism of the method is that the values relied upon may represent a biased selection of studies and may, therefore, either underestimate or overestimate the actual value of the loss.[24]

Conjoint analysis is a technique for determining what form of compensatory restoration can be used to substitute for interim lost uses. Interim lost uses are the losses incurred in the period that it takes to restore, replace or acquire the equivalent resources lost. The technique has been used extensively as a marketing technique, but only recently in economics. Conjoint analysis provides compensation for lost services by providing in-kind resource services. A survey is used to determine what services the public considers equivalent to the lost services. The survey is unlike contingent valuation method surveys, because the survey does not solicit monetary values, but rather preferences for various "bunches" of natural resource attributes. An example of how conjoint analysis can be used is in an instance where 15 acres of wetlands are damaged and restoration of the original wetlands is not feasible. If the public were to be compensated for this loss by creating wetlands in a site distant from the damaged wetlands, conjoint analysis could be used to determine how much acreage is required so the public feels compensated for the distance between the original and created wetlands.[25]

One criticism of conjoint analysis is that the survey method may incorporate the same biases as the contingent valuation method– operational, strategic, hypothetical, vehicle, starting point, and information. However, the design of the survey may produce more accurate results because the respondents make several choices and therefore learn from earlier answers.[26] Conjoint analysis may prove to be an important tool in natural resource damage because by focusing on restoration, it does not entail the contentious process of placing a monetary value on a natural resource.

Legal Frameworks– United States, Nigeria, Kenya, and International

U.S. Framework

The concept of recovering for damage to natural resources emerged in the United States in the 1970s, a period in which many environmental laws were enacted. Congress realized that penalties were not sufficient to provide compensation for environmental damages and began to incorporate natural resource damages, and the common law concept of making the plaintiff

[24]Lee et al., *supra* note 6, at 313.

[25]*Id*. at 319.

[26]*Id.*

whole, into various statutes.[27] One set of statutes, including CERCLA and OPA, focuses on the type of contaminant, oil and hazardous substances, and requires restoration and compensation. Another set of statutes, including the National Marine Sanctuary Act and the Park System Resource Act, focuses on the resource and includes liability for injuries to the protected resources from any source.[28]

The U.S. approach is based on full compensation, requiring both restoration or replacement of an injured resource *and* compensation for interim losses in order to make the public whole. The compensation approach is consistent with the common law principle to make the public whole and provides added incentives for prevention. Holding the responsible party liable for the full social costs of the damage provides an incentive to avoid harming the environment. Furthermore, compensation for interim losses provides incentives for the responsible party to restore the injured resources in a timely manner.

The statutes authorize federal, state, and tribal authorities to act as "trustees" for the natural resources on behalf of the public and grant them authority to pursue responsible parties for full compensation for the injuries suffered by the public. With two minor exceptions, these provisions typically do not cover injuries suffered by individuals as a result of their specific use of damaged resources.[29] After the damages have been determined, the trustees can either translate the injuries to an amount of money or set of activities that will compensate the public for the injuries to the natural resource. Generally, the statutes require that the trustee use the sums recovered for the restoration of resources.[30] In addition, the sums recovered may also be used to compensate governments for the reasonable costs of assessing damage to the injured

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[27]See Trans-Alaska Pipeline Authorization Act, Pub. L. No. 93153, tit. II, Stat. 584 (1973) (codified and amended at 43 U.S.C. §§1651-1665); Deepwater Port Act, Pub. L. No. 93-627, 88 Stat. 2126 (1975) (codified at 33 U.S.C. §§1501-1524 (2001)); 1977 Amendments to Clean Water Act, 33 U.S.C. §1321(f)(5); Outer Continental Shelf Lands Act, Pub. L. 95-372, 92 Stat. 629 (1978) (codified at 43 U.S.C. §§1811-1824) OCSLA repealed by OPA in 1990, Pub. L. No. 101-380, §2004, 104 Stat. 507 (1990).

[28]Carol A. Jones, *Restoration-Based Approaches to Compensation for Natural Resource Damages: Moving Towards Convergence in US and International Law, in* THE ENVIRONMENTAL CONSEQUENCES OF WAR: LEGAL, ECONOMIC, AND SCIENTIFIC PERSPECTIVES 477, 479 (Jay E. Austin & Carl E. Bruch eds., 2000).

[29]The Trans-Alaska Pipeline Authorization Act makes the pipeline operator strictly liable to "all damaged parties, public or private" for damages to natural resources relied upon for subsistence or economic purposes. 43 U.S.C. § 1653(a). The Deepwater Port Act imposes liability for damages "suffered by any person." 33 U.S.C. § 1517 (m)(2).

[30]33 U.S.C. §2706 (f) and 42 U.S.C. §9607 (f)(1).

resources.

Consistent with the purpose of the statutes to make the public whole, the regulations promulgated by the agencies authorized to implement natural resource damage assessments define the measure of damages to include total lost value due to the injuries, including both direct use and passive use values.[31] Direct use values arise from observable use of the resource, for example commercial and recreational uses. Passive use values, also referred to as nonuse values, include values derived from valuing protection of the resource for use by others or as a bequest to future generations, or simply the value of knowing the resource exists.

CERCLA

Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in 1980, establishing a comprehensive scheme for federal and state governments to respond quickly to releases of hazardous substances and to cast a wide net of liability, holding past and present operators of sites, vessels, and facilities liable for costs of such responses. CERCLA included a provision imposing liability upon responsible parties for natural resource damage resulting from releases of hazardous substances. Section 107 of CERCLA provides that the owner and operator of a vessel or a facility from which there was been a release or threatened release of hazardous substances shall be liable for "damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss resulting from such a release."[32] The only guidance in the statute for measuring the damages is that the damages recovered must be used "only to restore, replace, or acquire the equivalent of" the damaged resource and "shall not be limited by the sums which can be used to restore or replace such resources."[33]

CERCLA defines natural resources as "land, fish, wildlife, biota, air, water, groundwater, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States. . .[,] any State or local government, any foreign government, any Indian tribe."[34] Thus, CERCLA liability for injury to natural resources is limited to public resources and consequently the trustees may not use recovered monies to pay individuals for their losses.

An action for private cost recovery is available under CERCLA, but is limited to the

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[31] 15 CFR §990.53(d) and §990.30 and 43 CFR §11.83(c).

[32] 42 U.S.C. §9607(a)(1-4)(C)

[33] *Id*. §9604(f)(1)

[34] *Id*. §9601(16).

costs of cleaning up contamination. CERCLA section107(a)(4)(B) provides that "any other necessary costs of response incurred by any other person consistent with the national contingency plan" may be recovered from specifically defined liable parties. Liable parties include the present and past owners and operators of the site or vessel, generators of wastes that are deposited at the site, and transporters of the waste. Many landowners undertake private cost recovery actions to obtain contribution from other liable or responsible parties for cleanup or to shift the cleanup costs to the party who is directly responsible for the contamination. Private cost recovery actions commonly arise in three situations:

> 1. Where innocent current owners of contaminated property are held liable to a state or federal government for all costs of cleaning up hazardous substances and, to avoid the cost and uncertainty of litigating the issue of liability, choose instead to clean up the property themselves and then sue other responsible parties under CERCLA or state and common law theories of liability;
> 2. Where a property owner may be under no immediate threat of liability or enforcement order from any governmental entity, but finds the presence of contamination incompatible with its intended use of the property, and chooses to voluntarily clean up the contamination and sue any responsible parties to recover the full cost of cleanup; and
> 3. Where owners of adjacent property that is not itself contaminated but that is adversely affected by threatened releases of hazardous substances from nearby property attempt to clean up the threatened pollution to avoid or abate damage to their property.[35]

In CERCLA Congress required the Department of the Interior (DOI) to promulgate detailed regulations to provide guidance for natural resource damage assessments[36] identifying "the best available procedures" to determine natural resource damages, including both "direct and indirect injury, destruction or loss," and to take into account "replacement value, use value, and ability of the ecosystem to recover."[37] Congress also mandated that the regulations specify procedures for two types of assessments:

> (A) standard procedures for simplified assessments requiring minimal field observation, including establishing measures of damages based on units of discharge or release or units of affected area [Type A Assessments], and (B) alternative protocols for conducting assessments in individual cases to determine

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[35]Gerald W. Boston & M. Stuart Madden, LAW OF ENVIRONMENTAL AND TOXIC TORTS, 656-657 (2d ed. 2001).

[36]42 U.S.C. §9651(c)(1).

[37]*Id*. §9651(c)(2).

> the type and extent of short- and long-term injury, destruction, or loss [Type B Assessments].[38]

Following a delay of nearly four years after the deadline set in CERCLA to promulgate such regulations, DOI issued a final rule in August 1986. Shortly thereafter Congress amended the natural resource provisions of CERCLA when Congress adopted the Superfund Amendments and Reauthorization Act (SARA),[39] amending CERCLA's damage provisions. SARA included provisions to encourage trustees to pursue natural resource damages more actively. SARA also expanded the plaintiffs able to pursue NRDA claims by adding Indian tribes as authorized trustees.[40] A benefit of a rebuttable presumption in litigation for use of DOI regulations also was provided in SARA.[41] Additionally SARA provided a favorable statute of limitations for trustees in cases involving remedial actions.[42] In response to SARA, DOI issued revised rules in February 1988.

The DOI's rules required that recovery of natural resource damages be "the lesser of: restoration or replacement costs; or diminution of use values."[43] The rules also contained a hierarchy of methods for determining lost use and nonuse values, limiting recovery to diminution in the market price of a resource absent a finding by the government trustees that the market for the resource was not reasonably competitive.[44] Consideration of values referred to as "non-consumptive use," "passive use," or "nonuse" in the valuation calculation were prohibited in the regulations unless no active use values were available.[45]

DOI's Type B regulations were challenged as not complying with the statutory language in the U.S. Court of Appeals for the D.C. Circuit in Ohio v. Department of Interior. The most important outcomes of *Ohio* were the court's holding that restoration is the basic measure of damages under CERCLA, the court's approval of contingent valuation, and the use of nonuse

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[38] *Id*.

[39] Pub. L. No. 99-499, 100 Stat. 1613 (1986).

[40] *Id.* §207(c) (codified at 42 U.S.C. §9613(g)).

[41] *Id.* §107(d) (codified at 42 U.S.C. §§9651(c)(1), 9607(f)(2)(C)).

[42] *Id.* §113(b) (codified at 42 U.S.C. §9613(g)).

[43] 43 C.F.R. §11.35(b)(2) (1987).

[44] *Id.* 11.83(c)(1)-(2).

[45] Lee et al., *supra* note 6, at 214.

values in value calculations.[46] The court struck down the "lesser of" rule and the hierarchy of valuation methodologies. The court held that the cost of restoration was the basic measure of damages under CERCLA, not common law theories of damages or principles of economic efficiency that relied on market valuation. In addition, the court found that the regulation's prohibition of nonuse values was inconsistent with the statute and trustees could use such values to calculate damages.[47] Finally, the court upheld the listing of contingent valuation as an approved methodology as consistent with CERCLA.[48]

DOI published a final rule in 1994 to reflect the holdings in *Ohio*.[49] The final rule assumes that damages are based on the cost of an appropriate remedy that is chosen after considering alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. The rule is silent about preferences for any remedies, leaving the choice to the trustee.[50]

OPA

Congress passed the Oil Pollution Act (OPA) in 1990, following the Exxon Valdez oil spill. OPA provides for recovery of "[d]amages for injury to, destruction of, loss of, or loss of use of, natural resources, including the reasonable costs of assessing the damage, which shall be recoverable by a United States trustee, a State trustee, an Indian tribe trustee, or a foreign trustee."[51] Natural resources include "land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States. . .any state or local government or Indian tribe, or any foreign government."[52]

OPA also provides an individual a private right of action for that person's loss as a result of an oil spill. Private parties may recover for injuries to real or personal property, economic

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[46]*Ohio v. Department of the Interior*, 880 F.2d 432 (D.C. Cir. 1989).

[47]*Id*. at 463-464.

[48]*Id.* at 478-81.

[49]*See* Natural Resource Damage Assessments, 59 Fed. Reg. 14262 (Mar. 25, 1994). 43 C.F.R. Part 11.

[50]43 C.F.R. §11.82

[51]33 U.S.C. §2702 (b)(2)(A).

[52]33 U.S.C. §2701(20).

losses resulting from destruction of real or personal property, loss of profits or earning capacity due to injury, destruction, or loss of real property, personal property, or natural resources, and loss of subsistence use of natural resources regardless of whether they own or manage the resources.[53]

OPA specifies that for trustees the measure for damages to natural resources is: "(A) the cost of restoring, rehabilitating, replacing, or acquiring the equivalent of, the damaged natural resources ('primary restoration'); (B) the diminution in value of those natural resources pending restoration [of the resource to baseline, but for the injury] ('interim lost value'); and (C) the reasonable cost of assessing those damages."[54] The National Oceanic and Atmospheric Administration (NOAA) was required to promulgate regulations for the assessment of damages resulting from a discharge of oil. Four years after the statutory deadline NOAA published its final rules on natural resource damage assessments on January 5, 1996.

NOAA's rules were challenged in the U.S. Court of Appeals for the D.C. Circuit in General Electric Co. v. Department of Commerce.[55] The use of contingent valuation was once again challenged, and once again upheld as an appropriate technique to estimate losses/damages.[56] The court also upheld the inclusion of passive uses in damages.[57] The court vacated two aspects of the regulations, holding that attorneys fees associated with litigation could not be included in assessment costs to be recovered from a liable party and that NOAA had exceeded its authority by authorizing trustees to "remove conditions that would limit the effectiveness of any restoration action (e.g., residual sources of contamination)."[58] NOAA issued revised final regulations on October 1, 2002, to comply with the court's holdings in General Electric.[59]

Other Statutes

In addition to CERCLA and OPA, natural resource damage provisions are included in the

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[53]33 U.S.C. §2702(b)(2)(B), (C), & (E).

[54]33 U.S.C. §2706 (d)(1).

[55] *General Electric Co. v. Department of Commerce*, 128 F.3d 767 (D.C. Cir. 1997).

[56]*Id*. at 773.

[57]*Id*. at 772-74.

[58]*Id*. at 774.

[59]*See* Federal Register, Vol. 67, No. 190.

Marine Protection, Research, and Sanctuaries Act (MPRSA) and the National Park System Resources Protection Act (NPSRA). MPRSA was passed by Congress in 1972 to protect marine habitats and has made it "unlawful for any person to . . . destroy, cause the loss of, or injure any sanctuary resource managed under law or regulations for that sanctuary."[60] The statute directs that amounts recovered for damage to natural resources be used to "restore, replace, or acquire the equivalent of the [injured] sanctuary resources."[61] Therefore the measure of damages is the cost of restoration, replacement, or acquisition of the resource and the value of the interim lost use.[62] Unlike CERCLA and OPA, MPRSA is not limited to injury caused by particular types of substances, rather MPRSA is triggered by causation of injury regardless of means.

The NPSRA is similar to the MPRSA in that a person who causes injury to a natural resource within a national park, regardless of means, is liable. Under NPSRA, any person who destroys, causes the loss of, or injures any park system resource is liable to the United States for response costs and damages.[63] Damages include the cost of replacing, restoring or acquiring the equivalent of a park system resource, the value of any significant loss of use of a park system resource pending its restoration or replacement or the acquisition of an equivalent resource (interim lost use), and costs of assessment.[64] Private losses are not recoverable under the NPSRA.[65]

Private Rights Under Common Law

Commercial fishermen and landowners have causes of action for damages to natural resources under common law tort doctrines of negligence, nuisance, trespass, or strict liability for abnormally dangerous activities.[66] These causes of action require the private party to have incurred a personal injury that is separate and distinct from that suffered by the public.[67]

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[60]16 U.S.C. § 1436.

[61]16 U.S.C. § 1443(d).

[62]16 U.S.C. § 1432(6) (damages also include costs of assessment, reasonable monitoring costs, and enforcement costs).

[63]16 U.S.C. § 19jj-1.

[64] 16 U.S.C. §19jj.

[65]*See* Austral Oil Co. v. National Park Serv., 982 F.Supp. 1238 (N.D. Tex. 1997).

[66]Peck, *supra* note 7, at 290.

[67]*Id*, at 291.

Generally, a private right of action is recognized for injuries to property-based interests, including the right to recover for economic losses resulting from those injuries.[68]

Environmental Resource Valuation in Nigeria

Legal Framework

Nigeria does not explicitly recognize natural resource damage as a category for legal claims. Recovery for damage to property in Nigeria may be obtained through common law, Nigerian statutes or international law.

A majority of the statutes and regulations in Nigeria do not confer any right of private action for the victims of oil pollution.[69] Therefore, claims have generally been brought as common law tort claims under the theories of negligence, nuisance, and strict liability.[70] The rule in *Rylands v. Fletcher* is one of strict liability where the plaintiff need only prove: "1) that there was an "escape" from defendant's land of anything likely to do mischief, 2) that there was a "non-natural user" of the land, and 3) that the plaintiff suffered damages as a result of the 'escape.'"[71] Courts have used the rule in *Rylands v. Fletcher* to hold defendants liable for damage to plaintiffs' ponds, lakes, and farmlands.[72] Claims brought under common law are brought by parties who have suffered an injury, and there is no recognition of environmental injury separate from the injuries suffered by the plaintiffs as a result of their ownership of property.

The most significant and farthest reaching Nigerian environmental statute is the Federal

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[68]Carol A. Jones et al., *Public and Private Claims in Natural Resource Damage Assessments,* 20 HARV. ENVTL. L. REV. 111, 119 (1996).

[69]Ambrose O. O. Ekpu, *Environmental Impact of Oil on Water: A Comparative Overview of the Law and Policy in the United States and Nigeria,* 24 DENV. J. INT'L L. & POLICY 55, 90 (1995).

[70]*Rylands v. Fletcher*, (1866) L.R. 1 Exch 265, 277-280, *aff'd* by the House of Lords, (1868) L.R. 3 H.L. 330, 338-340.

[71]Ekpu, *supra* note 69 at 92.

[72]*See Umudje v. Shell BP Petroleum Development Company of Nigeria Ltd.* (1975) 9-11 S.C. 155 (Nigeria S. Ct.) and Edhemowe v. Shell BP Petroleum Development Company of Nigeria Ltd Suit No. UHC/12/70, judgment of the Ughelli High Court (Jan. 29, 1971)(unreported) (discussed in Ekpu, *supra* note 69 at 93).

Environmental Protection Agency Act (FEPAA),[73] which was passed in 1988 following outrage over the dumping of toxic waste in Nigeria by an Italian firm.[74] Section 21 of FEPAA holds the owner or operator of a vessel or facility from which a discharge of a hazardous substance occurred liable for the costs of removal, restoration, or replacement of natural resources destroyed as a result of the discharge and "costs of third parties in the form of reparation, restoration, restitution, or compensation as may be determined by FEPA from time to time."[75] Some serious restrictions on FEPAA are that oil is not explicitly included in the definition of hazardous substances, that it must be shown that the discharge was in harmful quantities, and that sabotage is a defense.[76] Furthermore, it does not appear to apply to small interstate rivers, streams, and creeks.[77] Finally, the statute does not provide a measurement for compensation and requires that compensation first be determined by the Federal Environmental Protection Agency. FEPAA has not led to a significant amount of compensation for damages.[78] "In practice, the oil companies undertake these measures and bear the attendant costs because it is obviously good public relations and because it may minimize their final outlay on civil liability to government bodies or agencies or third parties."[79]

Additional Nigerian statutes that are relevant to damages caused by oil are the Oil Pipelines Act of 1956 and The Petroleum Act of 1969. The Oil Pipelines Act provides in Section 11(5): "The holder of a license shall pay compensation. . .; (c) to any person suffering damage (other than on account of his own fault or on account of the malicious act of a third person) as a consequence of any breakage of or leakage from the pipeline or an ancillary installation."[80] If the compensation can not be agreed upon between the parties, the court awards compensation after consideration of these factors: any damage done to any buildings, crops, or

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[73]Cap 131. Laws of the Federation of Nigeria (1990).

[74]Ekpu, *supra* note 69 at 85.

[75]FEPAA § 21 (1).

[76]*Id*. and FEPA, Guidelines and Standards for Environmental Pollution Control in Nigeria 214 (1991) *quoted in* Ekpu, *supra* note 69 at note 200 and accompanying text.

[77]Ekpu, *supra* note 69, at 87.

[78]*Id*. at 87-88.

[79]Dr. Bola Fajemirokun, *Review of Compensation Litigation in the Niger Delta*, a Report for the Environment & Community Development Unit of the Ford Foundation (West Africa Regional Office) Lagos, 19, (1999).

[80]Cap 226 Laws of the Federation of Nigeria

profitable trees by the holder of the licence; any disturbance caused by the holder in exercise of rights under the license; and loss (if any) in value of the land or interests in land.[81] The Petroleum Act, Regulation 25 obligates an operator to pay "adequate compensation" to any person whose fishing rights are interfered with by the unreasonable exercise of the operator's rights.[82] This is restrictive in requiring that the operator's actions be "unreasonable,"does not clearly give the victim a right of action, is limited to damage to fishing rights, and allows for broad interpretation of what constitutes "adequate compensation."[83] Finally, none of these statutes allows compensation for losses such as existence value and option value.

Practice

Nigerian law generally provides for fair and adequate compensation for compulsory acquisition of land use rights and for damage to resources. In practice, however, injured plaintiffs rarely receive fair and adequate compensation.[84] Among the factors that contribute to this failure to meet the general legal standards are the relative imbalance in bargaining positions of claimants and oil producers, court delays that make litigation a poor alternative to negotiated settlement, lack of information about the amount of compensation paid in settled cases, the relatively large amounts paid to lawyers and other compensation agents in payment for services rendered with respect to claims, the use by oil producers of out-dated rate schedules for timber and crops, and the failure to consider the value of non-timber forest products (NTFPs) or other non-commercial products and uses of resources.[85]

Many claimants are poor and cannot afford to wait for years for a court decision on a disputed claim.[86] A paucity of jobs in the Niger delta means that subsistence users of natural resources have few alternatives when the resources they depend on are destroyed or damaged. This means they are not in a position to be able to bargain effectively with multinational oil

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[81]Oil Pipelines Act §20 (2).

[82]Enacted in Legal Notice 69 of 1969 at Reg. 25, pursuant to Cap 350 of Laws of the Federation of Nigeria.

[83]*See* Ekpu *supra* note 69 at 81.

[84]Austin C. Otegbulu, Methodology for Improved Natural Resource (Environmental) Valuation Practice in Nigeria, at 8 (June 30, 2003), His Majesty The Amayanabor of Kalabari Professor T.J.T. Princewill, Interview July 1, 2003.

[85]Austin C. Otegbulu, Interview June 27, 2003; Dr. Bola Fajemirokun, Interview June 27, 2003.

[86]Fajemirokun, *id*.

companies and leaves them little option but to accept an oil company's offer of compensation.

In practice, the primary determinant of compensation is the rate schedule established by the Oil Producers Trade Sector (OPTS) in 1997 for certain resources that are traded in markets, particularly certain species of trees and crops. Oil producers pay compensation based on this rate schedule, but such compensation typically undervalues the injuries suffered for several reasons. First, the compensation covers only this limited subset of the resources that people were using, notably excluding NTFPs. Second, the schedule has not been revised to account for increases in the value of trees over time or for inflation. Third, the rates do not cover non-consumptive uses, such as sacred groves of trees. In addition to the existence value of such sacred groves, users incur out-of-pocket expenses when they are destroyed.[87] Finally, the rates are simply much lower than the real value of the resource, in particular for fruit trees.[88]

An additional difficulty in measuring damages is that the amount of compensation that oil companies pay, either voluntarily or through a court order, is not readily available to the public or to the lawyers that bring claims. Nigeria does not keep court records in an electronic database, and there is no central collection agency for compensation claims.[89]

Kenya

Kenya adopted the Environmental Management and Coordination Act No. 8 in 1999, and the statute came into force in January 2000. The Act "provides for a legal regime to regulate, manage, protect and conserve biological diversity resources and access to genetic resources, wetlands, forests, marine and freshwater resources and the ozone layer."[90] It is an umbrella act that establishes the framework for Kenya's environmental law and incorporates general principles including the precautionary principle, polluter pays principle, and entitlement to a clean and healthy environment.

The Act establishes the National Environmental Management Authority (NEMA) to implement policies related to the environment. NEMA may "issue and serve any person in respect of any matter relating to the management of the environment a restoration order to

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[87]Otegbulu, *supra* note 84 at 14.

[88]Otegbulu, *supra* note 84 at 12-14.

[89]*See* Ekpu, *supra* note 69, at 87 and Fajemirokun, *supra* note 79, at 13.

[90]*Liability & Compensation Regimes Related to Environmental Damage: Review by UNEP Secretariat*, Expert Meeting, Geneva, 13th-15th May 2002 at 59.

require the person to restore the environment as near as possible to its original state."[91]

Neither "natural resource damage" nor "environmental damage" is defined within the act. However, the Act does state that "any person may apply to the High Court to compel persons responsible for environmental degradation to restore the environment as far as practicable to its immediate condition prior to the damage."[92] Furthermore, the Act provides compensation for any victim of pollution and the loss of any beneficial use as a result of pollution, including incidental losses. The Act also establishes a National Environmental Restoration Fund to provide compensation in instances where the responsible party is not identifiable or extreme circumstances require intervention. While the Act does not create a civil cause of action for damages, the court may direct the polluter to pay the cost of the pollution to any third party through adequate compensation, restoration or restitution under the pollution offenses.

While the Act does not establish a civil liability scheme, such as under CERCLA in the United States, the Act does incorporate the principle that the remedy for injury to the environment should be restoration. Furthermore, the Act provides standing for anyone to bring suit in environmental matters to enforce their entitlement to a clean and healthy environment, although there is no cause of action for damages.

International Agreements

Only a few international instruments recognize environmental damage and set up a liability scheme for natural resource damage.[93] While many international instruments consider damages in terms of property and health, they did not begin to recognize environmental damage until after the 1992 United Nations Conference on Environment and Development (UNCED), after which conventions and laws did contain provisions for environmental damages.[94] There is some indication that the natural resource damage provisions are converging with restoration-based measures of damages as in OPA and CERCLA.[95] However, the range of allowable

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[91] *Id.* at 60.

[92] *Id.*

[93] The United Nation's Environment Programme conducted a review of liability and compensation regimes related to environmental damage and reviewed approximately twenty-seven multilateral agreements, two draft multilateral environmental agreements, twenty-six regional environmental agreements, and twenty-six national environmental laws. *See supra* note 88, at 5.

[94] *Id*. at 6.

[95] *See* Jones, *supra* note 28.

restoration-based damages varies substantially across the different international conventions.[96]

Nigeria is a party to the two major international conventions addressing oil spills -- the 1969 International Convention on Civil Liability for Oil Pollution Damage (CLC) and the 1971 Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND). CLC was adopted to guarantee the payment of compensation by shipowners for oil pollution damage and FUND was adopted to provide a fund to ensure adequate compensation is available to persons suffering damage caused by oil pollution discharged from ships where compensation under CLC was inadequate or could not be obtained. CLC and FUND are limited in scope because they apply solely to discharge of oil from ships. The CLC makes the owner of a ship from which there is a discharge liable for the resulting damage up to certain limits.

There was some doubt among delegates as to whether CLC's definition of pollution, "loss or damage. . . by contamination,"[97] allowed for compensation for environmental damage that was not quantifiable. The Italian delegation argued that the state "had the legal right to compensation for damage to the environment which had irreversible consequences or where the environment could not be reinstated."[98] The Court of Appeal of Italy supported this position, concluding that the definition of pollution damage was broad enough to include damages to the environment "which prejudices immaterial values and which cannot be assessed in monetary terms according to market prices."[99] The Court stated that "the environment must be considered as a unitary asset, separate from those of which the environment is composed (territory, territorial waters, beaches, fish, etc.) and it includes natural resources, health and landscape. The right to the environment belongs to the State, in its capacity as representative of the collectivities."[100]

The 1992 Protocols for these conventions resolved this controversy by extending the definition of pollution damage to include the "costs of reasonable measures of reinstatement

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[96]*Id.* at 484.

[97]1969 Civil Liability Convention, Art. I, para. 6.

[98]Study by the Director of the IOPC Fund, Doc. FUND/EXC.30/2, summarized in Annual Report of the IOPC Fund 68-69 (1991).

[99]*Id.*

[100]*Id.*

actually undertaken or to be undertaken."[101] The amendment clarifies that compensation for payable measures is designed to restore the damaged environment to its baseline condition, however, compensation will not be payable for damages that cannot be "quantified." For example, the reduced possibility of using the natural resource will not be compensated. There is no agreement on the nature and extent of the measures that may be considered "reasonable."[102] The guidance documents for the 1969 and 1996 civil liability conventions do not address this specifically, nor is there definitive guidance from general international law.[103]

Nigeria is also a party to The Law of the Sea Convention, which establishes "a legal regime for protection and preservation of the marine environment from pollution and other forms of degradation arising from all possible sources."[104] The Law of the Sea Convention does not establish conditions and criteria for the assessment of and recovery of compensation for damages to the environment. The convention envisaged using the procedures and criteria for assessment and recovery of compensation developed in international civil liability conventions such as the CLC (as revised in its 1992 Protocol) and the FUND (as revised by its 1992 Protocol).[105] However, the civil liability conventions of 1969 and 1996 provide little guidance on these issues.

Although Nigeria is not a party to the 1993 Lugano Convention,[106] this agreement among European countries is noteworthy because it has provisions for natural resource damage that may indicate that environmental damage in international law is moving closer to the approach found in U.S. statutes. The Lugano Convention "aims at ensuring adequate compensation for damage resulting from activities dangerous to the environment and also provides for means of prevention and reinstatement."[107] The Convention specifically recognizes damages to wildlife, plants, and

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[101] 1992 Protocol to the 1969 International Convention on Civil Liability for Oil Pollution Damage, Art. 2(3).

[102] Thomas A. Mensah, *Environmental Damages Under the Law of the Sea Convention, in* THE ENVIRONMENTAL CONSEQUENCES OF WAR: LEGAL, ECONOMIC, AND SCIENTIFIC PERSPECTIVES 226, 246 (Jay E. Austin & Carl E. Bruch eds., 2000).

[103] *Id.*

[104] *Id.* at 227.

[105] *Id.* at 228.

[106] 1993 Lugano Convention (Convention on Civil Liability for Damage Resulting From Activities Dangerous to the Environment (Lugano)), adopted June 21, 1993, but not yet in force.

[107] UNEP, *supra* note 71, at 44.

nature resulting from dangerous activities. Many Member States criticize the Convention because of its vague definition of environmental damage and measurement of appropriate compensation. The Convention does not require restoration or give criteria for restoration or economic valuation of such damage.[108] Therefore, a European Commission (EC) act would be required to clarify liability for environmental damage if accession to the Convention was envisaged.[109] The European Commission's (EC) 1999 White Paper on Environmental Liability compared the Lugano Convention with the environmental liability regimes of Member States and determined that the Convention goes farther than most national regimes in explicitly including environmental damages.[110]

International agreements do not provide precise guidance regarding natural resource damages and valuation. However, "the prevailing rule in existing environmental civil liability regimes is that compensation is payable for the expenses of restoring the impaired environment, if this can be done."[111] The issue of whether the restoration costs are "reasonable" is determined by the court or tribunal based on the circumstances of each particular case. While there is some international support to require that compensation recovered be used for restoration of the damaged resources or the acquisition of equivalent resources, there are no agreements in place that are specific as to the economic valuation methods to ensure appropriate compensation.

As discussed above, international law provides for restoration of the environment, where possible, but there is no guidance as to valuation methods and whether nonuse or passive use losses are recoverable.

Recommendations

Nigerian statutes, including FEPAA, the Oil Pipelines Act, and the Petroleum Act, authorize compensation for damage to natural resources, but these laws could be improved in several aspects. Amendments to these statutes as suggested below would bring Nigerian law into accord with the norms of developed countries and international law. Nevertheless, even without such improvements the existing statutes provide a basis for improving the practice of compensating individuals and communities that suffer harm as a result of injury to natural resources from pollution. A general recommendation is to reduce the inequality in bargaining positions of individual claimants and the oil companies by reducing some of the burdens on

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[108] *Id.* at 45.

[109] *Id.*

[110] *See* 1999 White Paper on Environmental Liability, adopted by European Commission in February 1999.

[111] Mensah, *supra* note 82, at 248.

claimants and allowing them to receive some compensation early in the process. More specific recommendations include:

- Eliminate the FEPAA provision that requires discharge of harmful quantities. The term "harmful" is subjective and it should be sufficient that the claimant shows damage to natural resources caused by the defendant. Requiring a determination that the discharge is harmful expands the evidence the plaintiff must provide and lengthens litigation. Currently, the determination of whether a discharge is harmful is made in a case by case comparison.
- Change the standard to strict liability, as in *Rylands v. Fletcher*, allowing the focus to be on removing the discharge and restoring or replacing any injury to natural resources. A strict liability scheme would reduce the claimant's burden of producing evidence, shorten litigation, and make litigation less expensive. Furthermore, a strict liability scheme would encourage prevention of oil discharges and pollution and provide incentives for good oil field practices.
- Eliminate any restrictions on what resources FEPAA applies to, including small rivers, streams, and creeks. Also clarify that compensation is allowed for all economic losses, particularly for loss of subsistence resources, NTFPs, other direct uses of resources, and for nonuse values.
- Consider explicitly allowing compensation for environmental damage and requiring restoration or replacement of injured natural resources.
- Establish a uniform system, applicable to oil producers, other developers, and government projects, that defines and provides measures for environmental and economic damage.
- Consider adding a citizen suit provision, explicitly allowing an individual to bring suit under FEPAA. FEPAA does not create a right for the victim that can be enforced directly against the polluter, unless FEPA has determined the amount of compensation, if any, the victim is entitled to receive.
- Consider creating a trust fund out of which FEPA could pay claims once it determined the amount. Claimants could be allowed to pursue claims against the defendant if they thought the amount was insufficient, but could be required to repay the difference if the final judgment was less than the amount paid from the trust fund.
- Require compensation schedules to be adjusted for inflation at regular intervals.

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