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## **Promoting Sustainability through Environmental Liability**

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## I. Introduction

Mitigating rapid environmental harm, while promoting human and economic development, is an escalating contemporary challenge increasingly at the center of international environmental law. The 1992 Rio Declaration on Environment and Development embodies many related principles, urging States to enact effective environmental legislation, including national laws “regarding liability and compensation for the victims of pollution and other environmental damage.”

Principle 16 of the Rio Declaration explicitly measures this balance between environmental harm and economic growth, seeking to “internalize environmental costs” through “the use of economic instruments,” noting that the polluter should “in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.”<sup>1</sup> These provisions, particularly those related to liability for environmental harm, have often focused on pollution. However, liability is equally relevant to other types of environmental damage, such as deforestation and illegal resource extraction, and will be critical to address future sustainability challenges.

Many tropical developing countries are experiencing unsustainable resource extraction, land clearing and industrial development that are resulting in serious environmental harms.<sup>2</sup> Yet, many of these tropical countries are also at the center of global efforts to conserve tropical biodiversity and ecosystems and reduce greenhouse gas emissions.<sup>3</sup> Improved natural resource and environmental management will be essential of achieving sustainable growth objectives. Such transition relies on a number of voluntary and enforcement-based actions.

Following the 1982 adoption by the United Nations Environment Program (UNEP) of the Montevideo Programme to support development of environmental law and the 1992 Rio Declaration, many countries have drafted legislation on environmental enforcement and natural resource damages. These countries have often incorporated environmental crimes and civil penalties into their criminal and civil codes and regulations. Increasingly, countries are using a

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<sup>1</sup> United Nations Environmental Programme [UNEP], *Rio Declaration on Environment and Development*, Principles 11, 13, 16.

<sup>2</sup> Corey J.A. Bradshaw, Xingli Giam, Navjot S. Sodhi, Evaluating the Relative Environmental Impact of Countries, *PLOS One* 5, e10440 (2010).

<sup>3</sup> See e.g., Navjot, S. Sodhi, Lian Pin Koh, Barry W. Brook and Peter K.L. Ng, *Southeast Asian Biodiversity: An Impending Disaster*, 19 *Trends Ecol. Evol.* 654-60 (2004).

third enforcement element, specifically mentioned in the Rio Declaration: liability for environmental harm based on the “polluter pays” principle. Liability for environmental harm is aimed at compensating the public harmed by natural resource injuries, with a particular focus on restoring or replacing injured resources and/or providing compensation for harm. In addition, by increasing the costs for those who harm the environment through illegal activities, negligence, or engaging in inherently dangerous activity, liability provisions can also serve as an important complement to criminal and civil sanctions in deterring environmental harm.<sup>4</sup>

Long established in the United States, there is need to enquire what role environmental liability provisions are playing to remedy environmental harm and promote sustainability in tropical developing countries. This paper examines the role of environmental liability in the context of the major contemporary threats to environmental sustainability, and in relation to civil and criminal sanctions for environmental crime. It highlights the emergences of these statutes in the U.S. and the E.U., and their growing relevance to tropical developing countries. The paper then reviews the status of environmental liability authorities and their application in seven tropical developing countries (Nigeria, Indonesia, Brazil, Philippines, India, Mexico, and the Democratic Republic of Congo). These countries are globally significant for their extensive forest cover and biodiversity. However, they are also experiencing rapid environmental change, and are centers of emerging statutory provisions for liability for environmental harm. The paper concludes with a comparison of statutory provisions across countries, and recommendations for how liability provisions could be strengthened to help achieve greater environmental sustainability in the tropics.

## **II. The Costs of Environmental Harm and the Growing Demand for Accountability**

The past twenty years have seen the enactment of numerous international environmental conventions alongside many national environmental laws. However, the demand for economic growth and resource extraction continues to drive environmental degradation, and places many tropical developing countries at the center of environmental change and harm<sup>5</sup>. Many of these adverse impacts are the result of resource extraction (mining, wildlife, timber), agricultural

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<sup>4</sup> Adam D.K. Abelkop, Tort Law as an Environmental Policy Instrument, 92 Or. L. Rev. 381, 391-92 (2013).

<sup>5</sup> Corey J.A. Bradshaw, Xingli Giam, Navjot S. Sodhi, Evaluating the Relative Environmental Impact of Countries, PLOS One 5, e10440 (2010).

expansion, burning of fossil fuels, and pollution from transportation and industry – many of which involve recognized illegal activities.

Environmental loss and degradation yield cascading negative effects for ecosystem function, biodiversity, and human wellbeing,<sup>6</sup> and deprive national economies of billions of dollars in revenues to State budgets, private landholders, and communities, aggravating inequalities of resource access and impeding sustainable development. Global, direct economic losses from the five major categories of environmental crimes are estimated at U.S.\$70-213 billion per year, a startling number comparable to the scale of total global overseas development assistance (U.S.\$135 billion).<sup>7</sup> [See Table 1.]. These figures fail to account for indirect, long-term losses of environmental degradation (e.g., to health, ecosystem services, culture), the broader accounting of which totals trillions of dollars in annual losses.<sup>8</sup> Moreover, the corruption, entrenched rule-breaking, and transnational organized crime that are often associated with environmental degradation undermine institutions and contribute to social and political instability.<sup>9</sup>

Table 1. Estimated annual, direct economic losses from five major categories of environmental crime (Source: Nellemann et al. 2014)

Types of environmental damage	Estimated annual global losses (U.S.\$)
Illegal logging	30-100 billion
Illegal fisheries	11-30 billion
Illegal mining	12-48 billion
Illegal waste disposal	10-12 billion
Illegal wildlife trade	7-23 billion
<b>Total estimated annual losses</b>	<b>70-213 billion</b>

<sup>6</sup> Sandra Diaz, Joseph Gargione, F. Stuart Chapin III, David Tilman, Biodiversity Loss Threatens Human Well-Being. PLOS Bio. 8, e277 (2006)

<sup>7</sup> C. Nellemann, R. Henriksen, P. Raxter, N. Ash, E. Mrema. (Eds.) The Environmental Crime Crisis - Threats to Sustainable Development from Illegal Exploitation and Trade of Wildlife and Forest Resources. A UNEP Rapid Response Assessment. United Nations Environment Programme and GRID-Arenda, Nairobi and Arendal. www.grida.no.

<sup>8</sup> World Health Organization, Millennium Ecosystem Assessment: Ecosystems and Human Well-Being, Health Synthesis (2005), available at: <http://www.who.int/globalchange/ecosystems/ecosys.pdf>; The Economics of Ecosystems and Biodiversity, <http://www.teebweb.org/> (last visited June 29, 2015).

<sup>9</sup> Marilyne Pereira Gonclaves, Melissa Panjer, Theodore S. Greenberg, William B. Magrath. *Justice for Forests*. World Bank (2012).

### III. Realigning Incentives toward Sustainability: the Legal Tool Kit

Despite high costs to society from environmental degradation, the individual incentives to participate in many environmentally deleterious activities remain high. Policy makers are challenged to realign incentive structures to promote compliance and environmental sustainability. This relies on positive incentives and voluntary shifts towards greater sustainability, as well as on enforcement to discourage environmentally harmful activities.<sup>10</sup>

Law enforcement provides keystone instruments in the effort to realign incentives in favor of greater legality and environmental sustainability. The classic law and economics model of behavior is foundational in its evaluation of the ways in which individuals weigh the costs of compliance against the benefits of non-compliance.<sup>11</sup> While admittedly an incomplete picture of the psychology and motivations of illegal environmental behavior<sup>12</sup>, wide evidence highlights the relationships between different types of sanctions (e.g., fines, imprisonment) and changes in environmental behavior.<sup>13</sup>

#### A. A Brief Overview of the History of Environmental Rule of Law

In 1982, the Governing Council of the United Nations Environment Program (UNEP) adopted the Montevideo Programme to guide its work on the development of environmental law.<sup>14</sup>

Among its objectives was the “development of international law with respect to liability and compensation, including the improvement of remedies available to the victims of pollution.”<sup>15</sup>

The Montevideo Programme has been renewed and updated each decade since the original, and Montevideo IV includes as its first objective to “achieve effective implementation of,

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<sup>10</sup> E.g. Romain Pirard, et al., Deforestation-free Commitments: The Challenge of Implementation - An Application to Indonesia. CIFOR Working Paper 181 (2015); A.P. Kinzig, et al., Paying for Ecosystem Services-Promise and Peril 334 *Science* 603-604. (2011).

<sup>11</sup> G. Becker, Crime and Punishment: An Economic Approach, 76 *J. of Pol. Econ.*, 169-217 (1968).

<sup>12</sup> A. Keane, J.P.G. Jones, G. Edwards-Jones, E.J. Milner-Gulland. The Sleeping Policeman: Understanding issues of Enforcement and Compliance in Conservation. 11 *Animal Conservation* 75-82 (2008).

<sup>13</sup> E.g. C. Almer, G. Goeschl, Environmental Crime and Punishment: Empirical Evidence from the German Penal Code. 86 *Land Economics* 707-726. (2010); J. Borner, et al., Forest Law Enforcement in the Brazilian Amazon: Costs and Income Effects. 29 *Global Environmental Change* 294-305 (2014); J.P., Shimshack, M.B. Ward, 2005. Regulator Reputation, Enforcement and Environmental Compliance. 50 *Journal of Environmental Economics & Management* 519-540 (2005).

<sup>14</sup> Montevideo Programme for Development and Periodic Review of Environmental Law, Decision 10/21 of the Governing Council of UNEP, May 31, 1982, available at [http://www.unep.org/delc/Portals/119/publications/Montevideo\\_ProgrammeI.pdf](http://www.unep.org/delc/Portals/119/publications/Montevideo_ProgrammeI.pdf) (last visited June 16, 2015).

<sup>15</sup> *Id.* at 6.

compliance with, and enforcement of environmental law.”<sup>16</sup> The action items for implementing the programme of work include, “promot[ing] the use, where appropriate, of disincentives, including civil liability mechanisms, to encourage compliance with environmental law; and [e]valuat[ing] and, as appropriate, promot[ing] the wider use of criminal and administrative law in the enforcement of domestic and national environmental law.”<sup>17</sup> In implementing the rule of law component of its programme of work, UNEP has assisted many nations in adopting modern framework environmental laws including enforcement and liability provisions.

The growing emphasis on environmental rule of law recognizes “the role of law, justice, and good governance in achieving sustainable development.”<sup>18</sup> Recent policy fora, such as the newly instituted United Nations Environment Assembly (UNEA), the Rio+20 UN Conference on Sustainable Development, the International Union for the Conservation of Nature World Conservation Congress, and the Inter-American Congress on the Environmental Rule of Law have highlighted 'rule of law' as an under-recognized instrumental factor in promoting sustainability.<sup>19</sup> And the importance of emphasizing the “rule of law” has been recognized by the major legal systems, whether they be common, civil, Islamic, or mixed jurisdictions. Various international and multilateral organizations, including INTERPOL, UNEP, and the World Bank, have coalesced around promoting criminal justice as a complement to administrative regulations and enforcement in addressing corruption and organized crime.<sup>20</sup> These efforts are, in principle,

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<sup>16</sup> Fourth Programme for the Development and Periodic Review of Environmental Law, UNEP/GC/25/INF/15, February 16-20, 2009, <http://www.unep.org/delc/Portals/119/montevideoIV.pdf> (last accessed June 16, 2015).

<sup>17</sup> *Id.* at Annex, 3.

<sup>18</sup> Environmental Rule of Law, United Nations Environment Programme, available at <http://www.unep.org/delc/worldcongress/TheInternationalAdvisoryCouncil/tabid/105851/Default.aspx>

<sup>19</sup> *See e.g.* Rio +20 Declaration on Justice, Governance and Law for Environmental Sustainability, § 2 (“Environmental sustainability can only be achieved in the context of fair, effective and transparent national governance arrangements and the rule of law predicated on: (a) Fair, clear and implementable environmental laws; (b) Public participation in decision-making and access to justice and information...; (c) Accountability and integrity of institutions and decision makers, including through the active engagement of environmental auditing and enforcement institutions; (d) Clear and coordinated mandates and roles; (e) Accessible, fair, impartial, timely and responsive dispute resolution mechanisms, including developing specialized expertise in environmental adjudication and innovative environmental procedures and remedies; (f) Recognition of the relationship between human rights and the environment; and (g) Specific criteria for the interpretation of environmental law.”).

<sup>20</sup> Interpol Environmental Crime Programme, Project LEAF Fact Sheet (Feb. 2013) (Detailing Project Leaf, or Law Enforcement Assistance for Forests, because “Illegal logging and the international trade in illegally harvested timber is a serious, international organized crime responsible for habitat destruction, species extinction and climate change”), <http://www.interpol.int/Crime-areas/Environmental-crime/Projects/Project-Leaf> (last visited June 29, 2015); United Nations Environment Programme Rapid Response Assessment, The

strongly premised on the concept that actors who damage the environment – especially high-level responsible parties that have often gone unpunished and cases involving egregious harm – must be more effectively and fairly held responsible for their actions.

### **B. Legal Tool Kit: Three Pillars of Enforcement**

Across common law, civil law, and mixed legal systems, the rule of law is generally enforced through a tripartite structure. This involves an overlapping system of administrative and civil regulations, criminal sanctions, and liability for environmental harm resulting in compensation. Environmental regulations and sanctions are generally no different than other regulations and sanctions, constituting judgments by a society and its government about what amounts to prohibited behavior and intentions, and the amount of deterrent and expressive condemnation assigned to any given prohibited act. In deciding what behaviors to prohibit, legislators can potentially draw on a broad range of sanctions, each of which involves a range of relative merits, opportunities, and challenges associated with their legislation, operationalization, and implications for deterrence and justice.<sup>21</sup>

In assessing a particular prohibited action, enforcement officials often have broad discretion to bring either criminal or civil charges or can combine both criminal and civil charges for the same action.<sup>22</sup> Criminal sanctions are generally the most stringent available, with incarceration considered to be one of the strongest deterrents to unlawful activity.<sup>23</sup> However, these sanctions are not targeted per se at stopping or repairing the environmental harm caused as a result of a violation of the law. Even fines from criminal enforcement efforts are usually earmarked to the general treasury rather than toward repairing any environmental harms. Many countries have, therefore, developed other enforcement tools to promote compliance with the law as well to

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Environmental Crime Crisis – Threats to Sustainable Development from Illegal Exploitation and Trade in Wildlife (Christian Nelleman, et al., eds. 2014); Pereira et al., *supra* note 8.

<sup>21</sup> See Mark A. Cohen, Environmental Crime and Punishment: Legal/ Economic Theory and Empirical Evidence on Enforcement of Federal Environmental Statutes, 82 J. Crim. L. & Criminology 1054, 1058-60 (1992) (noting the United States’ broad range of sanctions for environmental liability).

<sup>22</sup> See, e.g., David M. Uhlmann, Prosecutorial Discretion and Environmental Crime, 38 Harv. Envtl. L. Rev. 159, 162 (2014) (hereinafter “Prosecutorial Discretion”) (“Congress made only limited distinctions between acts that could result in criminal, civil, or administrative enforcement.”).

<sup>23</sup> See David M. Uhlmann, *After the Spill is Gone: The Gulf of Mexico, Environmental Crime, and the Criminal Law*, 109 Mich. L. Rev. 1413, 1447-53 (2011).



ensure that violations are corrected, environmental damage is repaired, and compensation for damages is paid to the affected parties.

Table 2. Three broad categories of enforcement to promote environmental sustainability.

Enforcement category	Types of sanctions
Criminal sanctions	<ul style="list-style-type: none"> <li>a. Incarceration</li> <li>b. Fines</li> <li>c. Asset forfeiture</li> </ul>
Civil sanctions	<ul style="list-style-type: none"> <li>a. Penalties</li> <li>b. Injunctive relief: stop violation/correct harm</li> <li>c. Cleanup costs</li> <li>d. Remove economic benefit of violation</li> </ul>
Liability to compensate for environmental harm	<ul style="list-style-type: none"> <li>a. Natural resource damages (Costs of restoration, or of acquiring equivalents of damaged natural resources plus interim loss in value pending restoration) (public)</li> <li>b. Reasonable costs of assessing natural resources damages (public)</li> <li>c. Lost value of real or personal property (public or private)</li> <li>d. Lost profits and earning capacity (private)</li> <li>e. Lost subsistence use (private)</li> <li>f. Reduced public revenues and increased public service costs</li> </ul>

### 1. Criminal sanctions

Environmental crimes, like other crimes, require proof that a defendant committed a prohibited act with the required intent, or mental state. Criminal law is established by legislatures as a statutory form of enforcement. Governments, in deeming behavior criminal, can specify acts and mental states worthy of “the moral and social opprobrium of criminal prosecution.”<sup>24</sup> A wide range of environmentally unsustainable actions have been designated criminal in certain countries, including those related to illegal logging, wildlife trafficking (especially of certain threatened and endangered species, such as elephants and rhinoceros), illegal fishing, and the

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<sup>24</sup> Prosecutorial Discretion, *supra* note 20 at 167-68.

illegal transport of hazardous wastes. Additionally, in many countries, other associated crimes are often swept into environmental criminal proceedings. In the United States, for instance, crimes relating to perjury, conspiracy, fraud, and obstruction of justice are also charged alongside violations of strictly environmental statutes.<sup>25</sup> Similar statutes in Indonesia mean that, where environmental crimes also involve corruption or money laundering, these can also be prosecuted as "special crimes" by the Corruption Eradication Commission.<sup>26</sup>

Criminal law sanctions often carry a higher burden of proof than civil or administrative sanctions.<sup>27</sup> In most contexts, criminal sanctions are therefore reserved for the most egregious violations. If found guilty, a person may be incarcerated or ordered to pay a fine, but incarceration is not possible when the violator is a corporation or other legal entity, leaving fines as the primary sanction when an entity is found guilty of a crime. Criminal statutes sometimes also authorize confiscation of property used to commit the crime, such as chain saws used to fell timber or vehicles used to transport illegally acquired resources, as well as the resources themselves (e.g., ivory, timber), on the theory that a criminal should not profit from the illegal act.<sup>28</sup>

## 2. Civil sanctions

Civil sanctions include injunctive relief, penalties for non-compliance, as well as requirements to correct violations by taking, or refraining from taking, particular actions. Civil sanctions can be dispensed through the judicial system, in which case they are known as civil actions, or by executive agencies, in which case they are known as administrative actions. In some jurisdictions, civil actions can also include asset recovery in lieu of bringing criminal proceedings.<sup>29</sup> In some cases the amounts paid for a criminal fine and a civil penalty may be identical, the distinction being in whether they were imposed as a result of a criminal conviction,

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<sup>25</sup> *Id.* at 184-86 (2014) (citing 18 U.S.C. §§ 371, 1001, 1341, 1501–1519, 1621, 1623 for conspiracy, false statements, fraud, obstruction of justice, and perjury, respectively).

<sup>26</sup> Indonesia Law No.30/2002 on the Corruption Eradication Commission.

<sup>27</sup> Compare *In re: Winship*, 397 U.S. 358 (1970) (requiring proof beyond a reasonable doubt for every fact necessary to complete the alleged crime) with *Miller v. Minister of Pensions* 2 All ER 372 (1947) (England) (describing “preponderance of the evidence” standard simply as “more probable than not”).

<sup>28</sup> *E.g.* An Act Regulating the Ownership, Possession, Sale, Importation and Use of Chainsaws, Penalizing Violations Thereof and for Other Purposes, Rep. Act No. 9175, § 7(4) (2002), (Philippines); Lacey Act, 16 U.S.C. § 3374 (United States, authorizing forfeiture of items involved in crimes).

<sup>29</sup> *See e.g.* Proceeds of Crime Act 2009 (England); Cal. Penal Code §490.5 (b)-(c).

with its generally higher standard of proof, or as the result of a finding of liability under the law's civil provisions.

In most countries, civil penalties are monetary and must be paid after a final determination has been made, in accordance with rules of civil procedure, that the person has violated the law. Statutes may specify a penalty schedule (e.g., penalty per unit of oil released into the environment) as well as a maximum penalty amount, though the maximum may be based on a rate per day, rather than a fixed amount. Alternatively, judges also often have discretion in assessing penalties, and statutes may establish criteria that a court may consider in assessing penalty size. These criteria can be related to the scale of the violation, the extent of the harm, whether the violation was corrected, and the mental state of the violator, among other things.<sup>30</sup>

Civil penalties can be substantial, and therefore may provide a significant economic incentive toward compliance. But in some cases, for example with major violations that are particularly profitable, civil penalties may be small compared to the benefits of noncompliance (or the avoided costs of compliance) and thus may yield a limited deterrent effect. A similar situation can also arise where collection rates for fines are too low to provide meaningful incentives.<sup>31</sup>

To assure that violators do not reap windfall benefits due to noncompliance – given penalty limits – in some countries the civil sanctions may include charging the violator the amount of any economic benefit it may have received as a result of noncompliance. The economic benefit of a violation may be calculated either as the costs avoided by not complying or as benefits gained due to the noncompliance. While acknowledging that compliance is a function of a wide range of non-economic variables, only by penalizing violators by an amount greater than the

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<sup>30</sup> See, e.g. R.S.O. §§ 181.17(a); 188.1(1) (listing mitigating and aggravating factors for courts to consider in dispensing penalties for environmental harm) (Can.)

<sup>31</sup> See, e.g. J. Borner, et al., *Forest Law Enforcement in the Brazilian Amazon: Costs and Income Effects* 29 *Global Environmental Change* 294-305 (2014). It also worth noting that the lack of correlation between penalty and benefits of noncompliance may arise due to penalties not factoring in the risk of being caught. In a simple example, if a party stands to gain \$10,000 by disregarding a permit and are fined \$20,000 if caught, it may be worthwhile to violate if there is a less than fifty percent chance of being caught.

economic advantage they would have gained by violating the law can a government be assured that the civil penalty serves as a clear economic disincentive.<sup>32</sup>

The ultimate economic sanction is to deny a violator the opportunity to operate by ordering them to cease conducting any activities connected to the violation. This sanction is typically used when a person has been granted a license or permit to engage in activities releasing pollutants or extracting natural resources and that person violates the terms or conditions of the license or permit. Then the person has abrogated the permit and forfeited the privilege of operating granted by the permit. Since this is a severe sanction, enforcement agencies may first impose a temporary denial of the right, and move to permanent termination of the right only if the entity fails to comply after the temporary sanction.

### **3. Liability and Compensation for Environmental Harm**

Civil and criminal sanctions described above – including incarceration, penalties, and injunctions (including shutting down an operation) – are generally designed to promote compliance with the rules, now and in the future. A third enforcement instrument is liability for natural resource damages, which provides compensation to victims as a remedy. Liability for damages to public (and private) natural resources, in tandem with responsibility for civil penalties and criminal fines, reflects the essence of the “polluter pays” principle, widely adopted in international environmental law as well as many national laws.<sup>33</sup>

This instrument expands beyond the traditional private tort remedy available in common law countries in which owners of privately held resources can claim for injuries to their property interest. Since a substantial share of natural resources are owned or regulated by the public sector, creating authority to collect damages for harms to resources in the public domain is critical to protecting a country’s natural patrimony.

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<sup>32</sup> Ex ante, the expected costs of violating will reflect both the penalties that will be levied as well as the probability of being caught; as a result, penalties would need to incorporate a factor for the likelihood of paying the penalty to provide effective incentives.

<sup>33</sup> See e.g. Rio Declaration, Principle 16; International Convention on Civil Liability for Oil Pollution Damage, 29 Nov. 1969, 973 U.N.T.S. 3 (Replaced by 1992 Protocol, Nov. 27 1992, 1956 U.N.T.S. 255); Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675 (1980) (United States); Oil Pollution Act, 33 U.S.C. §§ 2701-2720 et seq. (1990) (United States).

Liability to compensate for environmental harm is an important component of environmental enforcement because it can increase the financial and non-financial burdens on violators and therefore the incentives to comply. Several recent literature reviews, largely focused on water pollution in the United States, conclude that liability has important deterrence effects.<sup>34</sup> Liability provisions can also serve to cover gaps in the law, covering activities that may not be specifically identified as illegal, but still result in environmental harm.<sup>35</sup>

Several key features affect the scope and effect of liability provisions for environmental harm and will be discussed in the country studies below.

1. Scope of coverage of resources and classes of injuries.

One critical element is what public resources are covered under statutory liability provisions. Are only specific resources identified (e.g., migratory birds, endangered species, or resources in protected zones)? Are the injuries covered limited to certain types (e.g., oil/chemical spills or long-term releases)? Further, is there also a statutory liability provision for private liability suits for injuries to private resources?

2. Strict or negligence liability standard?

As a matter of public policy, a government may decide that, under certain circumstances, a strict liability standard applies: that is, legal responsibility for damages from an act, even if the actor does not possess the requisite intent or culpable mental state to be charged with a crime. Strict liability is used sparingly, as it imposes costs on individuals who did not necessarily depart from a reasonable standard of care and even, sometimes, individuals without moral culpability: a significant expansion of potential legal liabilities. It is most often applied in the context of abnormally hazardous activities, but is also applied in other contexts based upon public policy.<sup>36</sup> Strict liability is often used in tandem with joint and

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<sup>34</sup> Wayne B. Gray and Jay P. Shimshack, *The Effectiveness of Environmental Monitoring and Enforcement: A Review of the Empirical Evidence*, 5 Rev. of Env'tl Econ. and Policy 3, 12-17 (2011); Adam D.K. Abelkop, *Tort Law as an Environmental Policy Instrument*, 92 Or. L. Rev. 381, 391-92 (2013).

<sup>35</sup> Adam D.K. Abelkop, *Tort Law as an Environmental Policy Instrument*, 92 OR. L. REV. 381, 385-98 (2013).

<sup>36</sup> See e.g. *Rylands v. Fletcher*, 3 H. & C. 744, 159 Eng. Rep. 737 (1865), *rev'd*, L.R. 1 (Ex. 265) (1866) *aff'd* L.R. 3 H.L 330 (1868) (English & Irish Appeals). In the United States, strict liability is also often applied in the context of products liability, to insure that the costs of defective products are internalized. Lynda J. Oswald, *Strict Liability of Individuals Under CERCLA: A Normative Analysis*, 20 B.C. Env'tl. Aff. L. Rev. 579, 592 n.47 (1993). See also *Greenman v. Yuba Power Prod., Inc.*, 377 P.2d 897 (Cal. 1963).

several liability, when multiple parties are held liable and the plaintiff can collect the entirety of damages from any of the responsible parties. Alternatively, a negligence standard may apply, in which liability is based upon the failure to exercise the standard of care that a reasonably prudent person would have exercised in a similar situation.<sup>37</sup>

3. Who has standing to bring suit?

In some countries, the government has standing to bring cases to hold liable parties that are responsible for harm to public resources. However, standing can be expanded to allow affected citizens, communities, NGOs and others to bring environmental liability cases. When standing is expanded, the question arises as to whether the liability provisions are different for the different parties. For example, in certain jurisdictions the government may bring suit for monetary damages, but an NGO may only sue for injunctive relief to order restoration and to recover costs directly incurred.<sup>38</sup>

4. What is the measure of natural resource damages?

When damages are measured, is the intent of the damage measure to make the public "whole"? The focus of compensation is typically on environmental restoration, but can also include compensation to public agencies and, in some cases to other affected parties. This further involves some key questions about whether compensation includes

- Costs of restoration, the costs of replacing damaged resources and ecological services (or injunctions to perform the restoration or replacement).
- Interim lost value from time of injury until the resource is restored or replaced.
- Lost value limited to financial losses only (i.e. associated with lost sales of marketable products), or if it also covers non-market and passive use values (e.g., lost recreational opportunities, or lost ecosystem services that support production or regulate ecosystems)?

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<sup>37</sup> Negligence, Black's Law Dictionary (10th ed. 2014).

<sup>38</sup> See Environmental Protection and Management Act, Law No. 32/2009 art. 92 (Indonesia) (noting that environmental organizations may also reserve the right to file a lawsuit in the interest of conserving the environmental function, but their suits "shall be limited to the implementation of certain measures without demand for compensation, except the real cost or expenditure.").

In order to make the public whole, a damage claim must take into account some sort of restoration or replacement, and account for both marketed and non-marketed services (See Box 1). It should also include the value of losses from the time of the injury until resources are fully recovered (“interim lost value”) (See Box 1). This is particularly important in cases where recovery may take a very long period, or may never occur completely, even with active intervention to restore the resources - such as releases of hazardous materials that do not readily degrade in the environment (e.g., heavy metals, radiation, acid mine runoff, or PCBs) or deforestation of old growth forests.

In both civil and common law systems, courts have a tradition of collecting damages for financial losses – measured as additional costs incurred, or loss of property values, due to a harm. For natural resources in the public domain, market losses potentially represent a small portion of lost value, particularly if the damage was not a result of commercial extraction. (See Box 2.)

5. Who receives damage recoveries?

When liability results in compensation, what happens with the recovered funds? When the government brings the claim and recovers the cost of restoration from the responsible party, does the money go to general revenues or to a resource agency with responsibility to restore the injured resources? When private individuals, community groups, or NGOs bring suit, where do the recoveries go?

6. What accountability exists to ensure that either the plaintiff or the responsible party, depending upon how the award is structured, restores the resources?

What system of oversight and accountability is established to ensure that restoration of resources occurs and is successful?

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## **Box 1: Millennium Ecosystem Assessment Framework for Ecosystem Services**

Public resources can be considered natural capital, providing a flow of many different types of services. According to the most widely recognized framework for ecosystem services, articulated in the Millennium Ecosystem Assessment, service flows include commercial products, such as minerals or timber, as well as a wide range of services not sold on the market. The challenge in determining the full value of injuries to natural resources is to capture the value of losses to non-marketed services.<sup>39</sup> The framework articulates the following sets of services:

### **Supporting services**

Ecosystem services "that are necessary for the production of all other ecosystem services". These include services such as nutrient recycling, primary production and soil formation. These services make it possible for the ecosystems to provide services such as food supply, flood regulation and water purification.

### **Provisioning services (may or may not be sold in a market)**

Products obtained from ecosystems:

- food (including seafood and game), crops, wild foods, and spices
- raw materials (including lumber, skins, fuel wood, organic matter, fodder, and fertilizer)
- genetic resources (including crop improvement genes and health care)
- water
- minerals (including coal, natural gas, diamonds)
- medicinal resources (including pharmaceuticals, chemical models, and test and assay organisms)
- energy (hydropower, biomass fuels)

### **Regulating services (not sold on a market)**

Benefits obtained from the regulation of ecosystem processes:

- carbon sequestration and climate regulation
- waste decomposition and detoxification
- purification of water and air
- pest and disease control

### **Cultural services (not sold on a market)**

Nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences:

- recreational experiences (including ecotourism, outdoor sports, and recreation)

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<sup>39</sup> World Resources Institute, Millennium Ecosystem Assessment, Ecosystems and human wellbeing: biodiversity synthesis (2005). Available at: <http://www.millenniumassessment.org/en/Synthesis.html>.

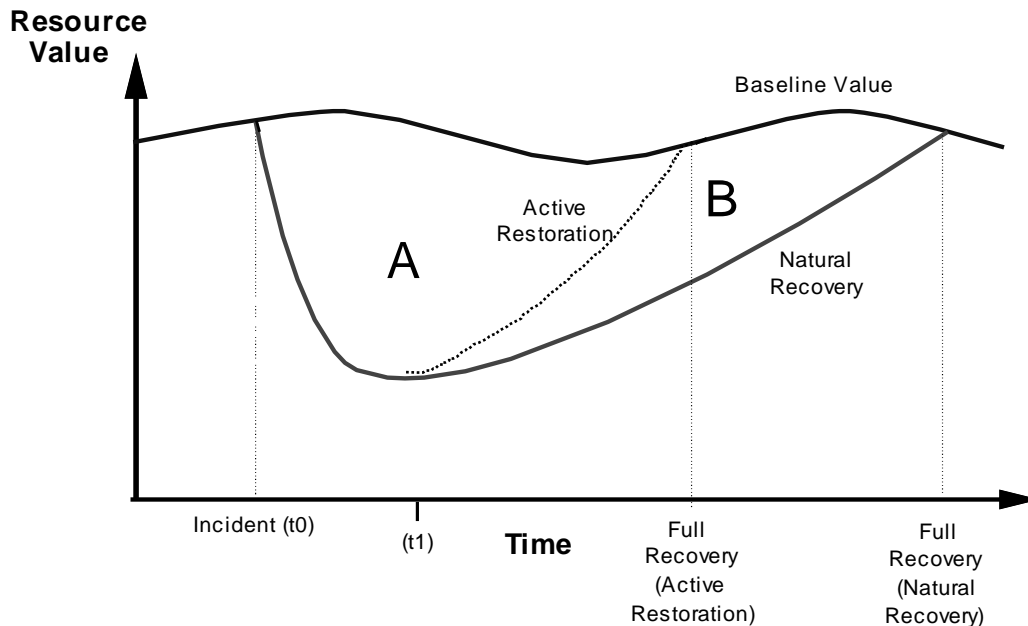


- cultural benefits (including use of nature as motif in books, film, painting, folklore, national symbols, architect, advertising, etc.)
- spiritual and historical (including use of nature for religious or heritage value or natural)
- science and education (including use of natural systems for school excursions and scientific discovery)

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## Box 2: Damage claims to make the public whole: restoration costs plus interim lost value

### RELATIONSHIP BETWEEN RESTORATION AND INTERIM LOST VALUE



The figure above illustrates the effect on resource value, relative to the resource baseline value, of a harmful environmental incident and the relationship between restoration and interim lost value of the resources. Time is represented on the horizontal axis. The vertical axis represents the value of services provided by an ecosystem affected by a particular release occurring at time t0, say a spill of fuel oil into a tidal wetland area. The oiling causes a die-back in the wetland vegetation, in addition to exposing birds, fish, and other animals to oil. On-site ecosystem services provided by the wetland that may be impaired by the oiling include faunal food and shelter, sediment stabilization, nutrient cycling, and primary productivity. Off-site services (which are supported by the on-site ecological functions) that may be impaired include storm protection and flood control for shoreline properties, bird watching along the flyway, and commercial and recreational fishing.

The loss in value (absent any restoration) is equal to the sum of the areas A+B. Restoration or replacement of injured or destroyed resources may expedite and/or increase the probability of

recovery of the resources and the associated ecosystem services. In this illustration, the losses with an active restoration program are A. In other words, the benefits of the projects accrue as reductions in the interim lost value experienced by the public due to injuries to resources (where the reduction is equal to area B in the figure).

If the damage claim is only for restoration and there is no claim for interim lost value, then the public will be worse off by the value B relative to the case where the incident did not occur.

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#### **IV. Emergence of Environmental Liability Provisions in the U.S. and E.U.**

Much contemporary discussion about environmental liability has strong roots in U.S. legislation dating to the 1970's.<sup>40</sup> Substantially drawing upon the U.S. approach to environmental liability, the E.U. established its Environmental Liability Directive<sup>41</sup> (ELD) in 2004, and by 2010 the ELD was implemented in national legislation by all member states. The U.S. and E.U. countries are among those with the most articulated and long-standing legislation and guidelines on liability provisions, and therefore their experiences can provide valuable insights for the continuing development of liability provisions in other countries – the U.S. under a common law system, and the E.U. countries under a mix of civil law and common law systems.

##### **A. United States**

The U.S. witnessed a dramatic expansion of federal environmental statutes in the 1970s, including the Clean Air Act of 1970 (CAA) and the Federal Water Pollution Control Act of 1972 (FWPCA). The focus of the initial statutes was command and control regulations directing behavior, with criminal and civil sanctions imposed for violations. For example, the CAA directed that certain emitting entities invest into alternative technologies to achieve target reductions in air pollution, and the FWPCA mandated that rivers, lakes, and other waters be made to be swimmable and fishable.<sup>42</sup>

Over several decades, the U.S. has developed a continuum of penalty schedules to address various aspects of violations, including civil penalties for violating the rules and criminal fines and imprisonment. Though Congress designed the federal environmental statutes to remedy the failings of the common law in protecting public health and the environment, the first wave of statutes did not provide liability to compensate for damages, the third pillar of environmental enforcement designed to make the injured plaintiff whole.

Statutory liability provisions for injuries to public natural resources, as a complement to civil and criminal penalties, evolved over the next few decades, with innovative provisions surmounting the historical common law restrictions that limited standing based on the types of damages

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<sup>40</sup> See Robert V. Percival, *Liability for Environmental Harm and Emerging Global Environmental Law*, 25 Md. J. Int'l L. 37, 42-43 (2010).

<sup>41</sup> Directive 2004/35/EC of the European Parliament and the Council on environmental liability with regard to the prevention and remedying of environmental damage. OJ L 143/56 (30 April 2004).

<sup>42</sup> 42 U.S.C. §§ 7401-7671 (Clean Air Act); 33 U.S.C. §§ 1251-1388 (Clean Water Act).

claimed and the ability to recover for damages to public natural resources. One set of statutes, including the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA or Superfund) and the Oil Pollution Act (OPA), establishes protocols dedicated to the prevention and response of oil spills as well as liability provisions for discharges of hazardous substances and oil. Another set, including the National Marine Sanctuary Act and the Park System Resource Protection Act, establishes protected areas for special resources and mandates the development of resource management plans complemented by liability provisions for injuries to the protected resources.<sup>43</sup> As a policy choice, Congress chose to impose strict liability for damages to natural resources against those who violated these statutes.<sup>44</sup> As the United States Supreme Court noted, “The remedy that Congress felt it needed in CERCLA is sweeping: *everyone* who is potentially responsible for hazardous-waste contamination may be forced to contribute to the costs of cleanup” (emphasis in original).<sup>45</sup> Liability under the U.S. natural resource damages statutes is thus expansive, yet simultaneously piecemeal and limited, covering certain actions, such as oil spills, hazardous substance spills, long-term discharges, and certain places, such as marine sanctuaries and national parks.

To address restrictions on standing, the provisions designate federal and state resource management agencies and tribal authorities as trustees on behalf of the public for natural resources – including the atmosphere, oceans, estuaries, rivers, and plant and animal species – and grant the public trustees the authority to recover from responsible parties for damages to the public.<sup>46</sup> Further, the statutes extend the measure of damages beyond the traditional measure of

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<sup>43</sup> 42 U.S.C. §§ 9601-9675 (CERCLA); 33 U.S.C. §§2701-2720 (1990) (OPA); 32 U.S.C. 1431-1445c (2000) (National Marine Sanctuary Act); 54 U.S.C. §§ 100701-100755 (2014) (Park System Resource Protection Act). Other federal statutes containing natural resource trustee provisions include the Federal Water Pollution Control Act (*or* Clean Water Act), 33 U.S.C. 1251-1388; Deepwater Port Act of 1974, 33 U.S.C. §§ 1501-1524 (1974); Outer Continental Shelf Lands Act Amendment of 1978, 43 U.S.C. §§ 1801-1866 (1978); and the Trans-Alaska Pipeline Authorization Act, 43 U.S.C. §§ 1651-1656 (1973). These statutes broadly define natural resources to 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 Indian tribe, or any foreign Government.

<sup>44</sup> 33 U.S.C. § 2702(b)(2) (under the OPA); 16 U.S.C. § 1443(a)(1)(A) (under the NMSA); 54 U.S.C. § 100721(1) (under the Park System Resource Preservation Act). Strict liability is not actually mentioned in CERCLA, but courts have consistently held that Congress intended to impose strict liability upon enacting CERCLA. *See e.g. United States v. Monsanto Co.*, 858 F. 2d. 160, 167, n. 11 (4th Cir. 1988) (“We agree with the overwhelming body of precedent that has interpreted [CERCLA] as establishing a strict liability scheme”); *New York v. Shore Realty Corp.*, 759 F.2d 1032, 1044 (2nd Cir. 1985).

<sup>45</sup> *Pennsylvania v. Union Gas Co.*, 491 U.S. 1, 21 (1989).

<sup>46</sup> The statutory liability provisions are based on the common law principles of the public trust doctrine and *parens patriae* whereby the sovereign has certain legal obligations to protect and preserve the trust corpus. The public

financial losses from the diminution in value of the resources as a result of that injury, which captures only a small component of the value created by natural resources in the public domain.<sup>47</sup> Recognizing that diminution in value is not always adequate to make the claimant "whole," courts began awarding restoration costs.<sup>48</sup> The U.S. public liability statutes further expand the measure of damages in recognition that the public will not be made whole with a damage measure limited to restoration costs because the recovery of injured resources to their status *but-for* the injury takes time, during which period the public continues to incur losses from the injury.

As a consequence, the measure of damages for natural resource injuries in the U.S. statutes typically covers the cost of restoring the resources to baseline conditions, *plus* the interim loss in (market and nonmarket) value from the time of the incident until full recovery.<sup>49</sup> Affirming the resource protection goals of the legislation, Congress mandated that trustees spend all recoveries on restoring injured resources or acquiring equivalent natural resources. Monies are paid to resource agencies, specifically to finance restoration activities, not to the federal Treasury where the funds are allocated according to national budget priorities. Compensation is not paid directly to the public in dollars, but rather in resources.

The Oil Pollution Act of 1990 (OPA), enacted following the Exxon Valdez oil spill, contains the most complete and explicit expression of penalties and liability for damages among statutes in the U.S. and in other countries studied in this paper. OPA provides a right to recover damages for injuries to public trust resources, and it also creates a right of recovery for purely private-party damages from oil spills.

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trust doctrine provides that the government holds property and natural resources in trust for the benefit of the public; the similar *parens patriae* doctrine provides the legal basis for a state to assert a claim on behalf of its citizens when their health or welfare is threatened. *See e.g. Sierra Club v. Dept. of the Interior*, 376 F. Supp. 9095 (N.D. Cal. 1974), *Sierra Club v. Dept. of the Interior*, 398 F. Supp. 284, 293 (N.D. Cal. 1975). For a discussion of the doctrines, *see* Kevin M. Ward & John W. Duffield, *Natural Resource Damages: Law and Economics* 11-23 (1992).

<sup>47</sup> *See* J.H. Cooper, *Measure Of Damages For Destruction Of Or Injury To Trees And Shrubbery*, 69 A.L.R.2d 1335 (1960).

<sup>48</sup> *See e.g., Heninger v. Dunn*, 101 Cal. App.3d 858, (1980).

<sup>49</sup> *See e.g.* 33 U.S.C. § 2702(b) (damages under OPA).

The implementing regulations further elaborate on the concept and measurement of natural resource damages.<sup>50</sup> Because of statutory restrictions that trustees spend recoveries *only* on enhancing or creating ("restoring, rehabilitating, replacing or acquiring the equivalent of") natural resources, the interim lost value portion of the damage claim was reframed in terms of in-kind resource compensation rather than monetary compensation. The end-product of the assessment of damages then became a Restoration Plan, comprised of primary restoration actions designed to bring the injured resources back to baseline levels (or as close as is economically feasible) *plus* compensatory restoration actions of appropriate scale to make the public whole for the interim loss in resources. The damage claim filed against the responsible party is for the costs of implementing the Restoration Plan, plus assessment costs. The regulations identify several methodological approaches for implementing the resource compensation measure of damages, and technical information on methods is further elaborated in a series of guidance documents.<sup>51</sup>

Many cases have been brought under the various natural resource damages statutes, including those involving major toxic spills. For a recent example, in 2011 BP agreed to a settlement of \$1 billion to complete the early restoration work for the Deepwater Horizon oil spill.<sup>52</sup> In the past twenty years, numerous entities have settled CERCLA claims, the largest of which being the 1995 Blackbird Mine settlement for just over \$59 million.<sup>53</sup> Other cases of less notoriety have amounted to far less in damages, but an overall survey of the field shows that the United States is not hesitant to use its natural resource damages provisions.

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<sup>50</sup> Natural Resource Damage Assessments, 15 C.F.R. § 990 (1996) (promulgated by the National Oceanic and Atmospheric Administration).

<sup>51</sup> 43 C.F.R. Part 11 (natural resource damage assessments under CERCLA for Department of Interior); 40 C.F.R. Part 300 (natural resource damage assessments under CERCLA and OPA).

<sup>52</sup> *NRDA Trustees Announce \$1 Billion Agreement To Fund Early Gulf Coast Restoration Projects*, National Oceanic and Atmospheric Administration (Apr. 21, 2011), available at [http://www.noaa.gov/stories2011/20110421\\_nrdarestitution.html](http://www.noaa.gov/stories2011/20110421_nrdarestitution.html) (last visited June 25, 2015). Early restoration is only one, preliminary step in the overall NRD assessment process – BP's final NRD liability is likely to be an exceedingly higher amount.

<sup>53</sup> *United States, Idaho Announce \$60 Million Superfund Settlement; Mining Companies Agree To Restore Chinook Salmon, Natural Resources*, National Oceanic and Atmospheric Administration (May. 1, 1995), available at <http://www.publicaffairs.noaa.gov/pr95/may95/blkbrd2.html>.

## B. European Union

The European Union Environmental Liability Directive<sup>54</sup> (ELD) was adopted in 2004 and by 2010 was implemented in national legislation by all member states.<sup>55</sup> The ELD seeks to establish a common liability framework designed to prevent and remediate environmental damage at a reasonable cost to society. Companies that cause environmental damage are to be financially responsible, in accordance with the “polluter pays” principle.

The Directive imposes liability for the prevention and remediation of certain classes of environmental harm, including damage to species and natural habitats protected under the Habitat Directive of 1992 and the Birds Directive of 1979<sup>56</sup> and, at the option of Member States, nationally-protected biodiversity, water (as defined by the Water Framework Directive), and soil/land, including any contamination of land that creates a significant risk to human health.<sup>57</sup> However, others are explicitly exempt. For example, injuries that do not meet certain threshold criteria of adverse effects are not recoverable under the ELD. Also exempt is any environmental damage that falls within the scope of a number of listed international civil liability conventions, such as the International Convention on Civil Liability of Oil Pollution Damage, provided the convention is in force in the Member State concerned.<sup>58</sup>

Strict liability only applies in certain, limited circumstances, such as those involving operators of risky, or potentially risky, activities listed in Annex III.<sup>59</sup> Other economic operators may also be

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<sup>54</sup> Council Directive 2004/35/CE, 2004 O.J. (L 143/56) (hereinafter “ELD”) (discussing environmental liability with regard to the prevention and remedying of environmental damage).

<sup>55</sup> Barbara J. Goldsmith & Edward Lockhart-Mummery, *The ELD’s National Transposition, in The EU Environmental Liability Directive: A Commentary* 140 (Lucas Bergkamp & Barbara Goldsmith eds., 2013).

<sup>56</sup> Council Directive 92/43/EEC 1992 O.J. (L 206/7) (discussing the conservation of natural habitats and of wild fauna and flora); Council Directive 2009/147/EC 2010 O.J. (L 20/7) (discussing the conservation of wild birds).

<sup>57</sup> Council Directive 92/43/EEC 1992, *supra* note 55; Council Directive 2009/147/EC 2010, *supra* note 55.; Council Directive 2000/60/EC, 2000 O.J. (L 327) (establishing a framework for community action in the field of water policy). Unlike the ELD, these directives do not contain provisions that enable Member States to order (certain) persons who are responsible for causing actual environmental damage to remediate such damage, or to recover the costs of remedial measures if the Member State took these measures itself. Resource Equivalency Methods for Assessing Env’tl Damage in the EU, Deliverable No. 5: Legal Analysis, at 13 (2006), *available at* [http://www.envliability.eu/docs/LegalAnalysis\\_D5\\_PRDF\\_071206\\_FINAL.pdf](http://www.envliability.eu/docs/LegalAnalysis_D5_PRDF_071206_FINAL.pdf).

<sup>58</sup> The International Convention on Civil Liability of Oil Pollution Damage, which is in force in most of the Member States, covers environmental damage caused by oil tankers and other oil transporting ships. International Maritime Organization Protocol of 1992 to amend the International Convention on Civil Liability for Oil Pollution Damage of 29 November 1969, 27 November 1992.

<sup>59</sup> *See* ELD Annex III (includes activities that release heavy metals into water or into the air, installations producing dangerous chemicals, landfill sites and incineration plants).



liable for the costs of preventing or remedying damage to protected species and natural habitats, but only if they are found to be at fault or negligent. Furthermore, liability is generally Member State-specific: depending on the state's implementing legislation, liability for most environmental damages can either be joint and several, several, or proportional, for example.<sup>60</sup>

Member States are each authorized to designate a “competent authority” responsible for fulfilling their duties – including enforcement – under the ELD. Individuals do not have standing to bring actions, but they are provided a voice through “request(s) for action.” In a request for action, any natural or legal persons that are (a) affected or likely to be affected by environmental damage; or (b) have a sufficient interest in environmental decision making relative to the damage or, alternatively; (c) alleging the impairment of a right, when Member State law requires this as a precondition “shall be entitled to submit to the competent authority any observations relating to instances of environmental damage or an imminent threat of such damage . . . and shall be entitled to request the competent authority to take action under this Directive.”<sup>61</sup> Individual Member States are entitled to determine what constitutes a “sufficient interest” or “impairment of a right” that triggers a request for action, though the ELD notes that “the interest of any non-governmental organization promoting environmental protection and meeting any requirements under national law” shall be deemed to have such a sufficient interest. And should the competent authority choose not to act, the persons are permitted to access “a court or other independent and impartial public body competent to review the procedural and substantive legality of the decisions, acts or failure to act” of the competent authority.<sup>62</sup>

Other key features are similar to U.S. natural resource liability statutes. First, the ELD empowers the public authorities to act in a role analogous to a trustee for the natural resources concerned. Second, the ELD measure of natural resource damages closely resembles the measure of damages of the 1990 U.S. Oil Pollution Act (OPA), highlighted above. The Directive emphasizes remediation and chooses the costs of remediation measure as the primary and preferred method to assess damages (rather than the monetary value of the natural resources impacted).<sup>63</sup> Further,

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<sup>60</sup> See The EU Environmental Liability Directive: A Commentary 212-220 (Lucas Berkamp & Barbara Goldsmith, eds. 2013).

<sup>61</sup> ELD art. 12(1).

<sup>62</sup> ELD art. 13 (1).

<sup>63</sup> See ELD art. 8(4).

the operator concerned will also be held liable for the loss or impairment of natural resources and services during the restoration period (interim losses), at least where it concerns the bodies of water, protected species and habitats covered by the ELD.<sup>64</sup> In addition, the operator concerned can be held liable for the costs of assessing the environmental damage, as well as the administrative, legal and enforcement costs, the costs of data collection and monitoring, and oversight costs.<sup>65</sup> Unlike statutes such as CERCLA, however, the ELD provides for no retrospective liability.

As in the U.S., the emphasis is on using a resource compensation measure to value the interim loss in value, as well as for the costs of restoring the injured resources. The E.U. has created guidance materials that draw extensively on the methods used in the U.S. for developing a damage claim, based on the costs of implementing primary and compensatory restoration projects.<sup>66</sup>

The ELD places no numerical limit on the size of damage claims for covered resources; on the other hand, concern is expressed that remediation costs not be disproportionate to the (monetary) value of the natural resources injured, or to the benefits of a particular remediation option. Competent authorities are required to weigh a variety of criteria when selecting the most appropriate remediation options (whereby implementation costs is only one factor to be considered); no standard or numerical ratio for disproportionality is identified.<sup>67</sup> The ELD does not apply to claims for personal injury, property damage or economic loss, but does not preclude member states from establishing a civil liability system that tracks the ELD, as for example the U.S. OPA does.<sup>68</sup>

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<sup>64</sup> See ELD arts. 2(11) & (13), Annex II, para. 1(c) & (d).. For soil pollution or land damage, the remediation measures to be taken do not take into account the interim losses

<sup>65</sup> See ELD arts. 8(2)-2(16).

<sup>66</sup> See Resource Equivalency Methods, *supra* note 56.

<sup>67</sup> See ELD, Annex II, para 1.3.1. The ELD offers, however, one other option for Member States to prevent the operator concerned being confronted with a disproportionate claim. Namely, according to paragraph 1.3.3(b) of Annex II, the competent authority is entitled to decide that no further remedial measures need to be taken if 'the cost of the remedial measures that should be taken to reach baseline condition or similar level would be disproportionate to the environmental benefits to be obtained'. No guidance is provided on how to determine when this is the case; it is up to the Member States to decide.

<sup>68</sup> ELD art. 3(3).

To date, the ELD has been applied in only a few cases of environmental damage. According to a 2013 study by the European Commission, in the majority of cases studied across seven member states, it was not possible to apply the ELD due to limitations in coverage, related notably to the high thresholds set by the ELD (particularly for water and biodiversity damage) or the fact that certain activities were not covered under the strict liability component of the regime; in other cases, the ELD was not applied for non-legal reasons, including lack of expertise or experience.<sup>69</sup> In several cases where the ELD could have been used, pre-existing legislative frameworks in the member states were used instead because they were considered more adequate or more stringent than the ELD regime.<sup>70</sup> The study concluded that the main source of obstacles and challenges for effectively implementing the ELD include:

- Various legal restrictions, including: restrictions on when strict liability applies and on coverage of resources; difficulty in demonstrating thresholds for harm; as well as misperceptions by prosecutors that the thresholds are more restrictive than they actually are;
- Lack of expertise and knowledge among public authorities;
- Lack of human resources to investigate reported cases, and lack of guidance documents; and
- Lack of data to determine environmental damage

Based on the analysis, recommendations to promote practical implementation of the ELD include:

- Drafting technical guidance and tools to support ELD
- Developing actions to improve the expertise and knowledge of all stakeholders, and
- Promoting the development of databases for the collection of data on the quality of environmental resources

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<sup>69</sup> European Comm'n – DG Env't, Implementation challenges and obstacles of the Environmental Liability Directive13 (16 May 2013).

<sup>70</sup> *Id.*

## V. Overview of Environmental Liability in Seven Tropical Developing Countries

### A. Introduction

In analyzing the growth of environmental liability for natural resource damages as an enforcement mechanism and means for redressing environmental harm, we selected six countries of global significance for their forest ecosystems, biodiversity, and forest carbon stocks. These include Brazil, the Democratic Republic of Congo, and Indonesia, which host the world's three largest remaining tropical lowland rainforests,<sup>71</sup> as well as the megabiodiversity countries, Mexico, India, and the Philippines.<sup>72</sup> Several of these countries (India, Mexico, Indonesia, Brazil) also rank as having the highest absolute global environmental impact, in terms of total resource use, emissions and species threatened.<sup>73</sup> These further represent countries that are currently exploring the use of natural resource liability provisions to help solve seemingly intractable environmental problems, such as deforestation from agricultural expansion and illegal logging, illegal mining, water pollution, and wildlife trafficking. As a contrast, we also selected Nigeria, which is also a biodiversity country facing rapid environmental change,<sup>74</sup> but does not appear to authorize any significant form of public resources liability.

Importantly, these countries also represent a diversity of legal regimes, most of which are based upon either common law or civil law. Common law is derived from customary and judicial precedent, arising out of English tradition. It thus appears most frequently in countries with a

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<sup>71</sup> Global Forest Resources Assessment 2010. Food and Agriculture Organization of the United Nations (2010), available at: <http://www.fao.org/forestry/fra/fra2010/en/>; United Nations Environment Programme, "Forest," available at <http://www.unep.org/ecosystemmanagement/UNEPsWork/TerrestrialEcosystems/Forests/tabid/3166/Default.aspx> (describing Congo basin forest as the second largest rainforest in the world); U.S.AID, Brazil – Property Rights and Resource Governance Profile 13 (2010), available at [http://usaidlandtenure.net/sites/default/files/country-profiles/full-reports/U.S.AID\\_Land\\_Tenure\\_Brazil\\_Profile.pdf](http://usaidlandtenure.net/sites/default/files/country-profiles/full-reports/U.S.AID_Land_Tenure_Brazil_Profile.pdf) (noting that Brazil holds nearly one half of the world's remaining rainforests); Global Forest Watch/Forest Watch Indonesia, *The State of the Forest: Indonesia 1* (Emily Matthews, ed. 2002) (noting that Indonesia has the third most tropical rainforests in the world, behind Brazil and Democratic Republic of Congo).

<sup>72</sup> Norman Myers, Russell A. Mittermeier, Cristina G. Mittermeier, Gustavo A. B. da Fonseca & Jennifer Kent. Biodiversity hotspots for conservation priorities. *Nature* 403, 853-858 (2000); Russell A. Mittermeier & Cristina Goettsch Mittermeier, *Megadiversity: Earth's Biologically Wealthiest Nations* (1997).

<sup>73</sup> Corey J.A. Bradshaw, Xingli Giam, Navjot S. Sodhi, *Evaluating the Relative Environmental Impact of Countries*, *PLOS One* 5, e10440 (2010).

<sup>74</sup> U.S.AID, *Nigeria Biodiversity and Tropical Forestry Assessment 1* (2008), available at: [http://pdf.usaid.gov/pdf\\_docs/PNADN536.pdf](http://pdf.usaid.gov/pdf_docs/PNADN536.pdf).

history of British – or American – colonialism. With common law’s reliance upon precedent, judges have a significant role in shaping the law in common law countries.<sup>75</sup> Civil law, in contrast, derives from continental European and Roman tradition and is based upon codified, statutory law and comprehensive, frequently updated legal codes.<sup>76</sup> Of the countries examined, Nigeria and India are common law jurisdictions, Mexico, Brazil, and the Democratic Republic of Congo are civil law, and Indonesia and the Philippines are a mixture of civil, common, and other legal systems.

Table 3 identifies which sanctions are available for violations of environmental law in each country. In addition to civil and criminal sanctions, it also identifies which elements of damages are available under an environmental liability remedy. (See section III above for a discussion of each item).

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<sup>75</sup> Joseph Dainow, “The Civil Law and the Common Law: Some Points of Comparison,” 15 Am. J. of Comparative L. 419, 424-25 (1966-67).

<sup>76</sup> *Id.*

**Table 3. Characteristics of Liability Provisions for Public Natural Resources by Country**

	Statutes	Resource coverage			Strict liability		Standing for NRD		Public recoveries	Compensatory damages							
		General coverage	Delimited resources, injuries	Special forest coverage	Generally applies	Primarily applies only in inherently dangerous uses	Public agencies	Plus other entities		Where do they go?	Financial losses			Beyond financial losses:			
											(Private) Loss of profits or earning capacity	(Public or private): Damages to real and personal property	(Public) Loss of tax and other government revenues, increased costs of public services	Loss of subsistence uses	Natural resource damages		
										Costs of restoring, or acquiring the equivalent of, the injured natural resources	Interim loss in value of injured natural resources pending restoration	Reasonable costs of assessing those damages					
<b>US</b>	OPA, CERCLA, CWA; NMSA		X		X		X		Resource agency trust fund	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
<b>EU</b>	European Directive on Liability																
<b>Brazil</b>	National Environmental Policy Act	X		X	X		X	X	uncertain	Yes	Yes	Uncertain	Uncertain	Uncertain	Uncertain	Uncertain	
<b>DRC</b>	Environmental Protection Act	X		X	uncertain		uncertain	uncertain	uncertain	Uncertain	Likely yes	uncertain	uncertain	Likely yes	uncertain	uncertain	
<b>India</b>	Indian Forests Act, Environment (Protection) Act	X		uncertain	uncertain		X	uncertain	Environmental relief fund*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
<b>Indonesia</b>	Environmental Protection and Management Act, The Forestry Law	X		X		X	X	X	National Treasury	Yes (for hydrological services only)	Yes	Yes, with corruption/ money laundering	Uncertain	Yes	Yes (for hydrological goods/services only)	Yes	
<b>Mexico</b>	LGEEPA, Federal Environmental Liability Act	X		X		X	X	X	Federal Environmental Liability Fund	Uncertain	Yes	Uncertain	Uncertain	Yes	Only if restoration is not feasible	Uncertain	
<b>Nigeria</b>	NESREA									Yes	Yes (for private)			No	No	No	
<b>Philippines</b>	Revised Forestry Code; Others (uncertain)	X		X	uncertain		X	X	uncertain	Yes	Yes			Yes			

\* Subject to judicial discretion.

## B. Nigeria

Nigeria's system of governance is rooted in common law and includes a constitutional prohibition against the exploitation of natural resources and a mandate that the state "shall protect and improve the Environment and safeguard the water, air and land, forest and wild life of Nigeria."<sup>77</sup> It also includes the right to life and the right to respect and dignity of one's person,<sup>78</sup> which the Federal High Court of Nigeria has held includes the right to a clean, poison-free, pollution-free, and healthy environment.<sup>79</sup>

The Nigerian Federal Environmental Protection Agency Act (FEPA) of 1988 has been replaced by the National Environmental Standards and Regulation Enforcement Agency Act (NESREA) of 2007.<sup>80</sup> NESREA provides the government authority to ensure compliance with environmental laws through monitoring and regulatory measures.<sup>81</sup> It also prohibits, without lawful authority, the discharge of hazardous substances into the environment and sets out fines and imprisonment for, among other things, polluting air resources, violating water quality standards, and discharging hazardous substances.<sup>82</sup> It does not contain any provisions regarding natural resource damages, or any causes of action for liability for harm to public resources. Several Nigerian statutes and regulations provide statutory causes of action for the private victims of oil pollution and environmental harms to private resources. For example, the Oil Pipelines Act of 1956 provides for compensation to those who suffer damage: "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."<sup>83</sup> Courts are to consider factors including any damage done to buildings, crops, or profitable trees, disturbances caused by the holder, and the loss (if any) in value of the land or interests in land, and individuals and

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<sup>77</sup> Constitution of the Federal Republic of Nigeria (1999), §§ 17(2)(d), 20.

<sup>78</sup> *Id.* at §§ 33(1), 34(1).

<sup>79</sup> *Gbemre v. Shell Petroleum Co. Development Nigeria Ltd* (2005) AHRLR 151 (NgHC 2005).

<sup>80</sup> National Environmental Standards and Regulation Enforcement Agency Act No. 25 (2007) (hereinafter "NESRAE") (Nigeria).

<sup>81</sup> NESRAE § 7.

<sup>82</sup> NESRAE §§ 20, 23-24, 27.

<sup>83</sup> Oil Pipelines Act (1956) Cap. (226) § 11(5) (Nigeria). *See also* Nigerian Minerals & Mining Act § 125 (2007); Petroleum Act (1969) (Cap. 350) § 37 sch. 1 (Nigeria) (obligating operators to pay "adequate compensation" to any person whose fishing rights are interfered with by the unreasonable exercise of the operator's rights).

communities have successfully used this law to seek compensation for damages to their property.<sup>84</sup>

Courts have also extended the private cause of action to include damages on behalf of entire communities. For example, in *Agbara v. Shell Petroleum*, the Federal High Court of Nigeria awarded the Ejama-Ebubu community 14.5 billion Naira (approximately U.S.\$ 72,500,000) in damages arising from an oil spill, including: N4.5 billion (U.S.\$ 22,500,000) for special damages such as agricultural damage, forestry, fishing and hunting losses, and health hazards; N10 billion in punitive damages; and required remediation and clean-up of the affected area to rehabilitate it to pre-impact, baseline status.<sup>85</sup>

Despite this statutory liability, many claims in Nigeria are brought as common law tort claims under the theories of negligence, nuisance, and strict liability.<sup>86</sup> Courts have used Nigerian common law to hold defendants liable for damage to plaintiffs' ponds, lakes, and farmlands. These claims have been brought by parties who have suffered an injury; otherwise there is no recognition of environmental injury separate from the injuries suffered by plaintiffs as a result of ownership of property.<sup>87</sup>

In practice, the primary determinant of compensation for oil spills in Nigeria is the rate schedule established by the Oil Producers Trade Sector in 1997 for the market value for certain traded resources, including certain species of trees and crops. Injured parties often complain that court delays, the lack of public information regarding settlement sizes, and the relative imbalance of

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<sup>84</sup> Oil Pipelines Act § 20(2). See *The Bodo Community v. Shell Petroleum Dev. Co. of Nigeria Ltd.*, 2014, EWHC 1973 (TCC), at para. 7. In *Bodo*, the High Court of London, applying Nigerian law, found that that the statutory remedies under the Oil and Pipeline Act superseded any common law causes of action and therefore limited the plaintiffs to statutory damages.

<sup>85</sup> *Agbara v. Shell Petroleum Dev. Co. of Nigeria, Ltd.*, No. FHC/ASB/CS/231/2001 (June 14, 2010).

<sup>86</sup> Danielle Schopp & John Pendergrass, ENVIRONMENTAL LAW INSTITUTE, *Natural Resource Valuation and Damage Assessment in Nigeria: A Comparative Analysis* 20 (Aug. 2003).

<sup>87</sup> See *Umudje v. Shell BP Petroleum Development Company of Nigeria Ltd.* (1975) 9-11 S.C. 155 (Nigeria S. Ct.); *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 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, 93 (1995).



bargaining positions between claimants and oil producers results in a lack of fair and adequate compensation for environmental harms.<sup>88</sup>

### C. Indonesia

Indonesia is governed by a largely decentralized civil law system intermixed with Islamic and customary law, with remnants of Roman/Dutch law. Its constitution expressly incorporates environmental rights, including the human right to “a proper and healthy environment” for every Indonesian citizen.<sup>89</sup> Indonesia’s environmental laws were enacted in 1982, revised in 2009 by Law No. 32, Environmental Protection and Management (“the Act”),<sup>90</sup> and implemented in part through supporting regulations concerning “Environmental Loss due to Pollution and/or Environmental Damage.”<sup>91</sup> The Act identifies how the state shall safeguard the constitutional right to a healthy environment and includes the “polluter pays” principle, defined in a statutory annotation to mean that “every personnel in charge of business and/or activities polluting and/or damaging the environment is obliged to bear the cost of environmental restoration.”<sup>92</sup> The Act reiterates the human right to a proper and healthy environment, and notes that consequently “[e]verybody shall be obliged to preserve the environmental functions as well as control environmental pollution and/or damage,” and is thus prohibited from, among other things, “committing action causing environmental pollution and/or damage.”<sup>93</sup> Entities seeking to dispose pollutants into the environment are required to acquire permits, limiting themselves to an amount of emissions that complies with quality standards established by the government for water quality, air emissions, and waste water, and other environmental quality standards.<sup>94</sup> The prohibitions against pollution and other environmental harm are enforced in multiple ways. As

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<sup>88</sup> Schopp & Pendergrass, *supra* note 85 at 23.

<sup>89</sup> Undang-Undang Dasar Republik Indonesia 1945, UUD '45 [Constitution] art. 28 (1945) (Indon.)

<sup>90</sup> Environmental Protection and Management Act, Law No. 32/2009 (hereinafter “EPM Act”).

<sup>91</sup> Ministry of Environment Regulation No. 7 of 2014 on Environmental Loss due to Pollution and/or Environmental Damage. This regulation provides a schedule for calculating damages to the following environmental goods and services: timber stocks, hydrological services, carbon stocks, biodiversity, and genetic resources.

<sup>92</sup> EPM Act, art. 2; EPM Act Annotation, art. 2(j).

<sup>93</sup> EPM Act, arts. 65, 67, 69.

<sup>94</sup> EPM Act art. 1 (14)-(17). Quality standards include quality of: water standards, waste water, sea water, ambient air, emission, nuisance, and “other quality standards in accordance with the quality standard of the environment.” art. 20(2).

in the United States, enforcement can include administrative sanctions, civil enforcement, or criminal charges.<sup>95</sup>

The Act also establishes liability for harm to natural resources, which is not delimited to specific resources or specific types of injuries. Actionable pollution and environmental damages are defined as human actions that “directly or indirectly” change the “physical, chemical and/or biological characteristics of the environment so as to exceed the standard criteria for [pollution and/or] environmental destruction.”<sup>96</sup> Any entity found to be polluting or otherwise damaging the environment has duties to mitigate damages and restore the environment. Under article 53, parties shall mitigate by (1) providing warnings and information about the environmental damage to affected communities; (2) isolating the pollution/damage; (3) discontinuing the source of pollution/damage; or (4) other methods in accordance with scientific and technological advances. Under article 54, parties are obliged to restore “the environmental function” by phases: discontinuation of the source of pollution and cleaning of the pollutant; remedy; rehabilitation; restoration; and other methods in accordance with scientific and technological advances.<sup>97</sup> Several provisions govern this liability. Article 82 provides the government the authority to force polluters to restore the environment, or to appoint a third party to “restore the environment attributed to environmental pollution and/or destruction” at the expense of the polluters. Article 87, the “Compensation for Loss and Environmental Restoration,” embodies the polluter pays principle, providing that: “[e]very personnel in charge of businesses and/or activities committing legal violation in the form of environmental pollution and/or destruction incurring losses on other people or the environment shall be obliged to pay compensation for the losses and/or take certain measures.” Aside from paying compensation, a polluter may also be required to undertake other measures, with the statutory annotation providing examples of: (1) installing or improving waste treatment units; (2) restoring environmental functions; and/or (3) eliminating the causes of environmental pollution and/or destruction.<sup>98</sup> Accompanying regulation from the Ministry of Environment further specifies categories of environmental goods

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<sup>95</sup> EPM ACT, art. 76 (administrative sanctions “on personnel in charge of businesses and/or activities in the case of environmental permit being violated”), arts. 97-120 (criminal sanctions, spanning from intentional acts to negligence), cite for civil law.

<sup>96</sup> EPM Act art. 1 (14)-(17).

<sup>97</sup> EPM Act, arts. 53-54.

<sup>98</sup> EPM Act, Annotation art. 82.

and services, including biodiversity, genetic resources, timber stocks, carbon stocks, hydrological services.<sup>99</sup> The regulation further provides basic guidelines for calculating damages, including default values per hectare for losses to biodiversity, genetic resources and carbon stocks. For lost timber stocks, compensation is for the cost of restoration and maintenance; for lost hydrological services, compensation has more components, including costs of good waste management, costs of evaluating environmental impact and monitoring environmental recovery, as well as interim losses from environmental harms.

Strict liability is only imposed in select cases, including for entities handling hazardous and toxic materials “and/or causing serious threat to the environment.”<sup>100</sup> The Act includes a tax of “guarantee funds for the restoration of environmental function” on those holding the permits to emit. The government holds these funds and can dispense them to third parties to restore environmental function. These funds do not affect an entity’s liability, but may be used in situations where a liable party is insolvent or unable to act quickly in the case of environmental damage affecting human health.<sup>101</sup>

Many different actors are permitted to bring suit or seek settlement/mediation to resolve environmental disputes.<sup>102</sup> The government – both the federal government and “regional governments in charge of environmental affairs” – may file litigation. Additionally, communities may file class action lawsuits in their own interest and/or the public interest in the event that they suffer losses from environmental pollution and/or damage. Environmental organizations may also reserve the right to file a lawsuit in the interest of conserving the environmental function, but their suits “shall be limited to the implementation of certain measures without demand for compensation, except the real cost or expenditure.”<sup>103</sup>

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<sup>99</sup> Ministry of Environment Regulation no. 13 of 2011 on the Compensation on pollution and/or environmental damages.

<sup>100</sup> EPM Act, art. 88. Hazardous and toxic materials are defined broadly as “substances, energies, and/or other components which may pollute and/or destroy directly or indirectly the environment and/or endanger the environment, health as well as continuation of life of human and other creatures because of their characteristics, concentration and/or quantity.” *Id.* at art. 1(21).

<sup>101</sup> EPM Act, art. 55.

<sup>102</sup> EPM Act, arts. 90-93.

<sup>103</sup> EPM Act, art. 92 Additionally environmental organizations must be in the form of a legal entity, be “established in the interest of environmental function conservation,” and have existed for two years prior to bringing suit. *Id.* Environmental organizations are defined as “a group of organized people and established on the basis of their own will, having goal and activity related to the environment.” *Id.* at art. 1 (27).

“Everybody” is permitted to file lawsuits against the state on the grounds that an administrative decision did not comply with certain procedural duties, such as the failure to conduct a proper environmental impact assessment.<sup>104</sup> These multiple provisions allow for suits by government and private citizens (via the community provision) to recover for losses and damages to natural resources, in terms of compensation and mandating cleanup.

In addition to Law No. 32, liability provisions are also included in The Forestry Law enacted in 1999 to replace a prior version that focused more upon timber management than conservation.<sup>105</sup> All Indonesian land is designated as either “forest” or “non-forest,” and the Forestry Law applies to all land within the forest designation. Forests in Indonesia are largely considered a “state controlled asset,” to be managed for “the maximum prosperity of the people”<sup>106</sup> with the important, recent exception of indigenous customary forest lands which, in some cases, are starting to be reconsidered in light of community land claims.<sup>107</sup> In the context of state controlled lands, third parties are allowed to apply for forestry or non-forest related licenses,<sup>108</sup> with those receiving such licenses subject to various fees, including reforestation funds and other investment funds earmarked for forest conservation efforts.<sup>109</sup> Parties with non-forest-related licenses are required to reclaim or rehabilitate any altered forest lands that have been changed pursuant to their non-forest-related activities.<sup>110</sup> In Article 50, the Forestry law states that no one may “destroy the infrastructure and facilities of forest protection,” and anyone using forests “is not allowed to undertake any activities leading to forest damage.” No one is allowed to cultivate forest areas, encroach upon forest areas, or cut trees within certain distances of, among other things, water sources and ridgelines. Prohibitions of Article 50 may lead to criminal punishment, including imprisonment, significant fines, and confiscation of goods.<sup>111</sup>

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<sup>104</sup> EPM Act. art. 93.

<sup>105</sup> Forest Law, Law No. 41/1999.

<sup>106</sup> Forest Law art. 4. Over 95% of Indonesian forestry lands are public lands administered by the government, and less than 2% are private lands. See Global Forest Watch, *Indonesia*, available at <http://www.globalforestwatch.org/country/IDN>.

<sup>107</sup> See Case No.35/PUU-X/20 (May 16, 2013), Mahkamah Konstitusi Republik Indonesia [Constitutional Court of the Republic of Indonesia] (granting indigenous people the right to manage the forests in which they live. It has been reported that this decision will block the government from selling such lands to private businesses.)

<sup>108</sup> The statute mentions mining permit holders as a non-forest related permit holder.

<sup>109</sup> Forest Law art. 35

<sup>110</sup> Forest Law, Art. 45

<sup>111</sup> Forest Law Art. 78

The Forestry Law permits civil, criminal, and administrative enforcement by the state, by citizens within a community, and by forest management organizations.<sup>112</sup> The “community” may bring class actions for “forest damage which inflicts a loss of livelihood of community” so long as the damaging actions are against prevailing laws or regulations.<sup>113</sup> The state can bring suit – either through central or local government institutions – to protect community interests if a community is faced with pollution or forest damage.<sup>114</sup> If an action is brought in court, the court may impose a daily fine against losing parties who fail to pay.<sup>115</sup> Compensation against those deemed responsible for illegal acts requires the responsible party to “pay compensation according to the severity of damage or consequence resulting therefrom to the State, for rehabilitation and recovery of forest condition or other necessary actions.”<sup>116</sup> These penalties may be imposed against any permit holder who violates their permit. These funds go directly to the state Treasury.

In practice, Indonesia is increasingly employing the full range of legal tools to address environmental problems, domestically often referred to as the "multi-door approach" to environmental enforcement that draws not only the Forestry Law and Law No. 32, but also anti-corruption and agricultural sector legislation. This also includes liability for natural resource damages, as a complement to civil and criminal enforcement. Indonesia also hosts a "Green Bench" via a national certification scheme to help prepare judges and prosecutors to deal with environmental legislation.<sup>117</sup>

In a precedent-setting case, PT Kallista Alam, a palm oil company holding a disputed concession permit to operate a 1605 hectare plot in Leuser National Park, was found liable in 2014 for more than U.S.D \$9.5M in fines<sup>118</sup>, and approximately U.S.D \$21M in cleanup, restoration and

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<sup>112</sup> Forest Law arts. 71-73. Forest Management Organizations must assume responsibility for forest management and fulfill the following requirements: be a corporate body, with articles of association expressly stating that it is established to conserve forest function, and have implemented activities according to their articles of association. The statute grants rights to the “community in and around the forest.”

<sup>113</sup> Forest Law art. 71

<sup>114</sup> Forest Law art. 72

<sup>115</sup> Forest Law art. 76

<sup>116</sup> Forestry Act, art. 80.

<sup>117</sup> ASIAN JUDGES NETWORK ON THE ENVIRONMENT, *The Indonesian Judicial Certification Program on the Environment*, available at <http://www.asianjudges.org/wp-content/uploads/2014/04/Environmental-Law-Certification-for-Indonesian-Judges.pdf>.

<sup>118</sup> The calculations are based on the Ministry of Environment Regulation number 13 year 2011 on the Compensation from Pollution and/or Environmental damages, where the fines are based on the schedules for

rehabilitation costs for illegally destroying over 1,000 hectares of protected peat forest that is critical habitat for endangered orangutan.<sup>119</sup> The International Union for Conservation of Nature has identified the Leuser Ecosystem as one of the world's "irreplaceable areas," hosting the highest densities of orangutans anywhere in the world.<sup>120</sup> In addition, in a criminal suit, several members of the company's leadership were found criminally liable and face individual fines and prison time and 5,769 hectares of land managed by Kallista Alam were ordered confiscated.

Kallista Alam was found to have violated Law No. 32 on Environmental Protection and Management, and numerous of its implementing regulations. Damages included (1) soil damages to peatland, (2) greenhouse gas emissions, and (3) environmental damages to the land, including: ecological losses (loss of water storage function from peatland, compensated by building a reservoir); biodiversity and genetic resources losses; losses from carbon sequestration and reduction; economic losses (loss of service life, replanting and maintenance for fifteen years); and other expenses (compost, transportation and rehabilitation costs). Though an appellate court has affirmed the decision, PT Kallista Alam is expected to appeal the case to the Supreme Court.

Some question remains whether the Kallista Alam case is a one-off case, or represents the emergence of a broader trend of effective environmental law enforcement. Two recent cases in Riau Province, Sumatra, closely mirrored the charges and situation of the Kallista Alam case. In 2014, a case was made against Malaysian-owned PT Adei Plantation Industry for operating a palm plantation without a license and illegally clearing peatlands for a palm oil plantation.<sup>121</sup> Though the company was originally acquitted, ostensibly based on a technicality, on appeal the Riau District Court found the company representatives guilty of negligence, sentencing the General Manager to 1 year imprisonment and a fine of approximately U.S.\$150,000 (or 2 months

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losses of carbon stock, biodiversity, and genetic resources per hectare of peat land and a calculation of lost timber production value.

<sup>119</sup> See Loren Ball, *High Court Denies Appeal by Palm Oil Company That Cleared Protected Peat Forest*, Mongabay.com (Sept. 30, 2014) <http://news.mongabay.com/2014/0930-kallista-alam-appeal-denied.html> (last visited June 26, 2015).

<sup>120</sup> See Soizic Le Saout, et al., *Protected Areas and Effective Biodiversity Conservation*, 342 *Science* 803-05 (Nov. 2013).

<sup>121</sup> Made Ali, *Kisah hakim bebaskan terdakwa kasus perkebunan ilegal PT Adei Pelalawan Riau*, Mongabay.co.id (July 24, 2014) available at <http://www.mongabay.co.id/2014/07/24/kisah-hakim-bebaskan-terdakwa-kasus-perkebunan-ilegal-pt-adei-pelalawan-riau-bagian-1-dari-2-tulisan/>; Made Ali, *Jaksa ajukan kasasi atas vonis bebas PT Adei Plantation*, Mongabay.co.id (Aug. 25, 2014) available at <http://www.mongabay.co.id/2014/08/25/jaksa-ajukan-kasasi-atas-vonis-bebas-pt-adei-plantation-bagian-2-dari-2-tulisan/>.

additional imprisonment), and fined the company U.S.\$113,000, in addition to U.S.\$1.1 million in restoration costs for 40 hectares.<sup>122</sup> However, this sentence has been criticized as inadequate, and the prosecutor is reportedly seeking an appeal.

In the case of PT National Sago Prima, also charged with peatland fire damage related to oil palm development, a lower Riau Province Court found two managers guilty of negligence in responding to a fire risk on their plantation. Notably, while the managers were sentenced to prison and levied comparatively small fines, and the company was required to prepare firefighting equipment to mitigate future risks, the company was not found liable for environmental restoration. Moreover, the two managers were later acquitted on appeal by Riau's Higher Court, although the presiding judges are now under investigation for corruption.<sup>123</sup>

These cases indicate the strong potential for natural resource liability in Indonesia, and potentially a trend towards related prosecutions and verdicts. However, they also indicate considerable variation in how the law is applied, which is often a function of judicial and prosecutorial discretion and capacity, as well as of the broader governance challenges of due process and corruption. Experts also note that Indonesian courts have previously levied tens of billions of dollars in fines against logging, pulp and paper, mining, and palm oil companies in Sumatra in recent years, but only a tiny fraction of the penalties have ever been paid.<sup>124</sup>

#### **D. Mexico**

Mexico is also a civil law system with a constitution that has expanded to guarantee various environmental rights. The original version of the Mexican Federal constitution (1917) established federal ownership of all land and natural resources, including the right to regulate the use of natural resources to, among other things, guarantee the conservation of natural elements

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<sup>122</sup> See Riau Corruption Trial (16 June, 2014) (Agar JPU menuntut PT. Adei Plantation Industry 10 tahun penjara, denda Rp 10 miliar dan penutupan sebagian tempat usaha serta perbaikan kerusakan lingkungan hidup) available at <http://rct.or.id/index.php/berita/194-jelang-tuntutan-terdakwa-pt-adei-plantation-industry>

<sup>123</sup> See Pn Bengkalis vonis bos PT.NSP "bebas" PT.NSP divonis denda Pr.2Milyar, ZonaRiau.com News (Jan. 22, 2015), available at <http://zonariau.com/m/read-1161-2015-01-22-ptnsp-divonis-denda-rp2-milyar.html> (last visited June 26, 2015); Tim Redaksi, *Kebun sagu masyarakat jadi korban kebakaran PT. National Sago Prima Gurindam 12.Co* (Feb. 7, 2014), available at <http://gurindam12.co/2014/02/07/kebun-sagu-masyarakat-jadi-korban-kebakaran-pt-national-sago-prima/>.

<sup>124</sup> See e.g. Rhett A. Butler, *In Precedent-Setting Case, Palm Oil Company Fined \$30M For Destroying Orangutan Forest*, Mongabay.com (Jan. 09, 2014), available at <http://news.mongabay.com/2014/0109-aceh-tripa-court-decision.html> (last visited June 26, 2015).

and social wellness. The same provision also states that national authorities must establish adequate provisions to protect lands, waters and forests, and avoid the destruction of natural resources.<sup>125</sup> In 1987, the Mexican constitution was amended to introduce a concurrent state/federal jurisdictional system to legislate environmental issues, and added to Article 27 that adequate provisions must be established to manage lands, waters and forests and preserve and restore ecological balance.<sup>126</sup> In 1999, the constitution was amended to include the concept of sustainable development and a right to an adequate environment, which in Mexico is now considered a fundamental human right.<sup>127</sup> In 2012, the constitution was again amended to substitute “healthy” for “adequate” and expressly include environmental liability as a legal tool to effectuate the human right to a healthy environment: “Any person has the right to a healthy environment for his/her own development and wellbeing. The State will guarantee the respect to such right. Environmental damage and deterioration will generate a liability for whoever provokes them in terms of the provisions by the law.”<sup>128</sup> Almost all current environmental laws are based upon Articles 4 and 27 of the Mexican constitution.

In 1988, Mexico passed its principal environmental law, the General Act for Ecological Balance and Environmental Protection (LGEEPA).<sup>129</sup> Under LGEEPA, as amended in 1996, the federal government is given the authority to enforce environmental law, with corresponding mandates to preserve biodiversity, establish national environmental policies, and introduce the concept of sustainable preservation of natural resources, be they public or privately owned. The law includes provisions authorizing the government to bring suit for criminal and civil environmental violations.<sup>130</sup>

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<sup>125</sup> Constitución Política de los Estados Unidos Mexicanos [C.P.], art. 27.

<sup>126</sup> C.P. art. 73, § XXIX-G.

<sup>127</sup> C.P. art. 4

<sup>128</sup> C.P. arts. 25, 4. This constitutional amendment dovetails with Mexico’s obligations arising out of the 1992 Rio Declaration, in which signatories agreed to abide by the principle that “states shall develop national legislation regarding liability and compensation in respect to victims of pollution and other environmental damages.” UNEP Rio Declaration, *supra* note 1, at Principle 13.

<sup>129</sup> Ley General de Equilibrio Ecológico y Protección al Ambiente [LGEEPA], as amended, Diario Oficial de la Federación, 28 de enero de 1988 (Mex.).

<sup>130</sup> LGEEPA, §§ 182, 203 (establishing criminal and civil liability, respectively). The criminal liability provision allows for suit to be brought by the federal government, or any person may bring a suit before the federal prosecutor general. See also Código Penal Federal arts. 414-423 (title XXV, “Environmental Crimes and Crimes against Environmental Management”).



More recently, in 2013 Mexico passed the Federal Environmental Liability Act to govern environmental liability for public and privately owned resources.<sup>131</sup> The law requires those causing environmental harm to (1) restore damaged environments to their prior baseline; or (2) pay for damages when restoration is impossible. Restoration includes rehabilitating habitats, ecosystems, natural elements and resources to their baseline chemical, physical, or biological conditions. Environmental damages are defined as the “measurable adverse loss, deterioration, harm, affectation or modification of the chemical, physical and biological conditions of habitats, ecosystems, natural elements and resources as well as of their interaction relationships and the environmental services provided by the same.” The law evinces a strong preference for restoration: the first preference being to restore the damaged ecosystem to its baseline. If that is infeasible, the second option would be to restore the same region with equivalent natural resources, and if that is infeasible, then in an alternative location linked to the affected area and sharing benefits with the affected communities. If each of these modes of restoration proves to be inadequate, then parties may seek monetary compensation, which can only be ordered “exceptionally.”<sup>132</sup> The statute’s main objective, then, is to avoid monetary compensation in favor of environmental restoration. The statute also includes oversight, in which PROFEPA, the Mexican environmental protection agency, is required to assist judicial authorities in ensuring compliance by the responsible parties. This includes an obligation to inform the judge every two months about the progress on compliance with judicial mandates.<sup>133</sup>

Beyond restoration costs or damages for environmental harm, judges may also impose penalties for intentional violations of up to (1) 300 to 50,000 times the minimum wage in Mexico City against individuals; or (2) 1,000 to 600,000 times the minimum wage against entities.<sup>134</sup> Monetary awards, be they from economic sanctions or punitive damages, are directed to the Environmental Liability Fund, and funds are administered by SEMARNAT, the Secretariat of the Environment and Natural Resources. These funds must be used for actions that

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<sup>131</sup> Ley Federal de Responsabilidad Ambiental [Environmental Liability Act], Diario Oficio de la Federacion, 7 de junio 2013 (Mex.).

<sup>132</sup> Environmental Liability Act, Sections 14-17.

<sup>133</sup> Environmental Liability Act, Section 42.

<sup>134</sup> Environmental Liability Act, Section 19

SEMARNAT considers to be “urgent or important,” and can be used to develop technical documents required by judges.<sup>135</sup>

The Environmental Liability Act differentiates environmental damage to public resources from civil damages to the private property interests of owners of natural resources, with the latter remaining under Mexico’s civil codes. However, the law does provide procedural innovations that help guide civil actions for damages to private property interests. It also differentiates environmental liability from administrative or criminal responsibility and sanctions, which can be pursued alongside environmental liability actions.<sup>136</sup>

The government is not the only party that can bring suit and class action claims against those who degrade the environment. The new law also grants standing to sue for environmental damages to (1) individuals inhabiting communities adjacent to the corresponding environmental damage; (2) Mexican environmental nonprofits, with some restrictions; along with (3) federal and state agencies.<sup>137</sup> Additionally, the Environmental Liability Act mandates the creation of district courts with specialized environmental jurisdiction that will be tasked with resolving environmental-liability-related controversies.<sup>138</sup>

Generally, strict liability for environmental damages applies in selected contexts, including: if the damage is related to hazardous materials/wastes, involves ships in coral reefs, the undertaking of hazardous activities, or the use of inherently dangerous machinery. Liability also can attach for negligent actions and intentional acts.

The Law on Environmental Liability was drafted to complement Mexico’s 2002 Law of Sustainable Forestry,<sup>139</sup> which is intended to “promote conservation, protection, restoration, harvest, management and the use of forest ecosystems and their resources in a sustainable

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<sup>135</sup> Environmental Liability Act, Sections 45-46.

<sup>136</sup> Código Penal Federal [Federal Penal Code], as amended, Diario Oficial de la Federación, 14 de agosto de 1931 Art. 420, 421 (concerning Crimes against the environment).

<sup>137</sup> Environmental Liability Act, Section 28.

<sup>138</sup> Environmental Liability Act, Section 30.

<sup>139</sup> Ley General de Desarrollo Forestal Sustentable [Law of Sustainable Forestry], as amended, Diario Oficial de la Federación, 25 de febrero de 2003.

manner in order to improve the wellbeing of rural communities.” The Law of Sustainable Forestry was amended with the enactment of the Federal Environmental Liability Act to include the following: “[a]ny person or entity that directly or indirectly causes damage to forest resources, the ecosystem and its components, is obliged to repair or compensate, in accordance with the Federal Law on Environmental Liability.”<sup>140</sup> Given its recent enactment, the Environmental Liability Act has engendered little to no case law regarding its implementation.

### E. Brazil

Brazil’s civil law system embraces environmental rights, including “[t]he [constitutional] right to enjoy an ecologically balanced environment.”<sup>141</sup> The constitution includes a “duty of the Government and of the community to defend and preserve [the environment] for present and future generations.”<sup>142</sup> It also includes sanctions for environmental wrongdoers as well as the polluter pays principle: “[c]onduct and activities considered harmful to the environment subject the individual or corporate wrongdoers to penal and administrative sanctions, in addition to the obligation to repair the damages caused.”<sup>143</sup> Environmental enforcement is also written into the constitution, with a prosecutor’s functions defined to include bringing civil actions “to protect public and social property, the environment and other diffuse and collective interests.”<sup>144</sup> Resources covered by these constitutional guarantees thus include those in the private as well as the public domain.

Brazil’s statutory code provides several means for enforcing these constitutional rights and mandates, including broad criminal and administrative sanctions for damage to the environment. Environmental damage is broadly defined to include, among other things, the destruction of or harming of certain types of forests and pollution that results or may result in damage to human

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<sup>140</sup> Law of Sustainable Forestry art. 1. *See also* Environmental Liability Act, art. 14 (“The compensation for land use change on forest land, will take place in terms of the provisions of the General Law for Sustainable Forest Development”).

<sup>141</sup> Constituição Federal [C.F.] art 225 (Braz.).

<sup>142</sup> C.F. art. 225.

<sup>143</sup> C.F. art. 225 para. 3.

<sup>144</sup> C.F. art. 129. The idea of “social property,” as incorporated into Brazilian law, holds that property rights must be “subject to ‘restrictions determined by considerations of social order.’” *Alexandre dos Santos Cunha, The Social Function of Property in Brazilian Law*, 80 *Fordham L. Rev.* 1171, 1174 (2011) (quoting 1 Clovis Bevilacqua, *Direito Das Coisas* 134 (1941)).

health or the environment.<sup>145</sup> The National Environmental Policy Act of 1981 establishes civil liability for environmental damages.<sup>146</sup> It also institutes strict liability for environmental harms – a plaintiff need only demonstrate the existence of environmental damage and a causal link connecting the defendant’s conduct to that damage: “[w]ithout impeding the application of penalties described in this article, the polluter is obligated, regardless of the existence of fault, to compensate or provide reparations for damage caused to the environment or to third parties, affected by his or her activity. The Federal and State Public Prosecutors shall have authority to bring an action of civil or criminal liability for damage caused to the environment.”<sup>147</sup> “Polluter” is broadly defined to include direct and indirect actions that cause environmental degradation, and pollution/environmental damage is defined as environmental degradation causing “harm [to] the health, safety and welfare of the population; creat[ion of] adverse conditions for social and economic activities; adverse[...] effect[s to] the biota; effect[s to] the aesthetic or sanitary conditions of the environment; [and] the introduction of materials or energy at odds with established environmental standards.”<sup>148</sup> Courts acknowledge this strict liability for environmental damages, broadly interpreting causation, applying joint and several liability, and even finding that mere ownership of polluted land and natural resources can be sufficient to open an individual to civil liability.<sup>149</sup>

In addition, the Brazilian Forestry Code, as updated in 2012, regulates land use and management of public forest lands, but also of private, forested properties, which hold over half of Brazil’s

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<sup>145</sup> Lei No.9,605, de 12 de fevereiro 1998, *Diario Oficial da Uniao* [D.O.U.], de 2.13.1998 (Braz.) (providing for criminal and administrative sanctions derived from conduct and activities harmful to the environment, including naming and providing sanctions for over 60 unique environmental crimes); Decreto No. 6514, de 22 de Julho 2008, *Diario Oficial da Uniao* [D.O.U.] de 7.2.2008 (Braz.) (providing further detailed legal rules on criminal/civil damages and administrative violations).

<sup>146</sup> Lei No. 6938, de 2 de Setembro 1981, *Diario Oficial da Uniao* [D.O.U.] de 2.9.1981 (Braz.)

<sup>147</sup> Lei No. 6938 art. 14, para. 1. See also Lei No. 10406, art. 927, de 1 de Janeiro 2002, *Diario Oficial da Uniao* [D.O.U.] de 1.11.2008 (Braz.) (Establishing Brazil’s civil code and allowing for liability, “regardless of fault,” in cases as specified by law).

<sup>148</sup> Lei No. 6938, art. 3, clauses III, IV.

<sup>149</sup> See e.g. S.T.J. REsp No. 222,349 (under Forest Code, “causing” environmental harm can include acquiring land not in compliance with Forest Code); S.T.J. Resp N. 1,071,741 (joint and several liability is “one of the most traditional and undisputed hallmarks of the Brazilian environmental civil liability regime”); Special Appeal No. 1056540 (2009) (“if the person responsible for an environmental disaster can be identified, it has the responsibility to repair the damage, even if jointly with the current owner of the property damaged.”). See also Nicholas S. Bryner, *Brazil’s Green Court: Environmental Law in the Superior Tribunal de Justica (High Court of Brazil)*, 29 *Pace Env’tl. L. Rev.* 470 (2012) (describing court’s expansive role in applying statutory law).

existing forests.<sup>150</sup> It severely restricts land use decisions, including the amount of permissible logging, on private properties, and includes civil and criminal liability provisions to enforce these restrictions.<sup>151</sup>

In addition to government-filed suits, Brazil allows for public class actions for environmental damages, providing that any citizen can file to recover for environmental damage.<sup>152</sup> In doing so, individuals or, in more limited circumstances, non-profit associations may seek monetary damages and injunctive relief mandating performance or refraining from performing an act. A party bringing a public class action need not choose between the two remedies, but can sue for injunctive and monetary relief in the same suit.<sup>153</sup> In the case of collective class actions, non-pecuniary pain and suffering damages may be awarded for moral injuries, including those involving environmental injuries.<sup>154</sup>

Courts have reaffirmed the polluter pays principle to hold polluting parties responsible for natural resource damages. For example, Justice Eliana Calmon stated that “if the person responsible for an environmental disaster can be identified, it has the responsibility to repair the damage, even if jointly with the current owner of the property damaged.”<sup>155</sup>

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<sup>150</sup> Global Forest Watch Country Profiles, *Brazil*, available at <http://www.globalforestwatch.org/country/BRA> (last visited June 26, 2015).

<sup>151</sup> Lei No. 12651, de 25 de Maio 2012, *Diario Oficial da Uniao* [D.O.U.] de 5.25.2012 (Braz.). NOTE: somewhat uncertain how much liability is incorporated into the Forest Code.

<sup>152</sup> Lei No. 7,347, de 24 de julho de 1985, *Diario Oficial da Uniao* [D.O.U.] de 25.07.1985 (Braz.) (Public Civil Action Act, regulating “the civil action for liability” for environmental damages, among other things, and allowing public class actions for environmental damages). Prior to introducing the Public Civil Action Act, Brazil had permitted the “popular action,” which could be brought by any citizen seeking judicial invalidation of administrative acts harmful to, among other things, the environment. Lei da Acao Popular, Lei No. 4717, de 29 de junho 1965, *Diario Oficial da Uniao* [D.O.U.] de 8.4.1974 (Braz.) (regulating “popular action[s]”). The scope of the Lei da Acao Popular, however, was limited to the invalidation of administrative acts, and did not permit injunctions or suits for damages. See Antonio Gidi, *Class Actions in Brazil – A Model for Civil Law Countries*, 51 *Am. J. Comp. L.* 312, 326 n.26 (2003).

<sup>153</sup> See S.T.J., REsp No 605. 323/MG (2005) (involving public civil actions).

<sup>154</sup> Courts have not interpreted the applicability of this provision broadly. See e.g. S.T.J, RE sp No 598. 281/MG (2003) (moral damages for environmental harm permitted only when the harm affected the dignity of specific individuals, not a collective class, with example of person emotionally harmed by cutting down tree planted by ancestor); but see S.T.J. Resp No 1,120,117 (2009) (court upheld collective moral damages for illegally cutting trees on land traditionally occupied by indigenous people).

<sup>155</sup> S.T.J. Special Appeal No. 1056540 (2009)

Brazil has at least a 25-year history of bringing environmental liability cases.<sup>156</sup> During this time, the courts have grappled with how to measure the two components of damage claims – the repair of harm to the environment and monetary compensation for environmental harm. For example, in a 2011 case against a company that illegally removed fifteen types of native and exotic trees from a national park, the court calculated the monetary value of environmental harm using a methodology that transfers literature estimates for the value of annual global ecosystem services per unit of land (differentiated by 16 global biomes) to the injured areas.<sup>157</sup> Lacking estimates of restoration costs, the court calculated the cost of removal and transport of the trees. Combining the estimates for transport and removal costs and one year of lost ecosystem services supported by the trees, it determined the responsible party owed U.S. \$13, 948.<sup>158</sup>

In the past few years, various government efforts have been mounted to clarify how damages are calculated and to create standardized methodologies to value environmental harm. The Attorney General of the State of São Paulo, for instance, created a working group on the Valuation of Environmental Harm in September 2012 to outline methodologies for various sources of harm, including oil spills, waste in waterways, and deforestation. Groups presented their findings in September 2014, with each group approaching damages according to its own metrics. For example, the waste in waterways group recommended assessing damages based upon two elements: the first, the cost of various water quality improvements in the affected waterways, is a measure of the costs of repairing the harm; the second, the waste collection and treatment costs the party would have incurred had it taken proper mitigation measures (avoidance costs) can be interpreted as a proxy for the lost value to the public attributable to the environmental harm. In the forestry context, the working group found that valuation should be based upon the value of

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<sup>156</sup> See e.g., Civil Appeal 2.12.325.2/1 (1993) (fining entity for dumping liquid waste into a stream, thereby altering its biochemical oxygen demand); Civil Appeal 12.739/7 (ordering entity to repopulate a river with fish after the court found that the entity had polluted the river); Civil Inquiry no. 011/2009 (Doc – 1959 – 2010 AREAS PROTEGIDAS) (concerning deforestation of a land parcel in an area of permanent preservation).

<sup>157</sup> In arriving at this assessment, the court used Sonia L. Peixoto & Ofélia Gil Willmersdorf (Coords.). *Modelo de valoração econômica dos impactos ambientais em unidades de conservação: empreendimentos de comunicação, rede elétrica e dutos - estudo preliminar*. (2002). The underlying studies supporting the Peixoto and Willmersdorf approach – primarily Costanza, R. et al., (1997) *The value of the world's ecosystem services and natural capital*. *Nature* Vol. 387, 15 May - covers the following ecosystem services: atmospheric regulation, climate regulation, regulation of disturbances, water storage, erosion control, soil structure, recycling of nutrients, treatment of wastes, pollinating, biological control, habitat, recreation, cultural, option value, and existence values.

<sup>158</sup> Civil Inquiry no. 007/2011 (DOC – 0145 – 2012 – FLORA)

the lost above-ground biomass and carbon, taking into account not only the quantity of the resources destroyed but also what would have grown had the deforestation not occurred. In making such assessments, the group recommended considering the size of the land deforested, the classification of the forest destroyed, the time elapsed since the deforestation event, and the accumulation rate of the forest had it not been destroyed.<sup>159</sup> The State of Minas Gerais has also been attempting to systematize the levy of fines for environmental infractions, with a focus on the unauthorized clearing of protected lands and removal of native vegetation.<sup>160</sup>

## F. Philippines

Due to its various colonial influences, the Philippine governance is a mixture of common law, civil law, Islamic law and other, native traditions. The strong environmental protections embedded within Philippines' constitution have been broadly interpreted by the country's judicial system. The Philippine Constitution of 1987 provides that "[t]he State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature."<sup>161</sup> The Philippine Supreme Court interprets this provision to allow individuals standing based on harm to a "balanced and healthful ecology," characterizing the right as so basic that it "need not even be written in the Constitution for [it is] assumed to exist from the inception of mankind."<sup>162</sup> It interprets this right to be self-executing, meaning that "a Filipino citizen can assert his/her right to ecological security and health when certain policies, projects and activities threaten watersheds, forest reserves and protected areas, and can hold government officials accountable for negligence or for allowing such threats to take place."<sup>163</sup>

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<sup>159</sup> MPSP Centro de Apoio Operacional Cível E De Tutela Coletiva, Relatório Final do Grupo de Trabalho de Valorização do Dano Ambiental (Sept. 27, 2012), *available at* [http://www.mpsp.mp.br/portal/page/portal/cao\\_urbanismo\\_e\\_meio\\_ambiente/relat%C3%B3rio%20final%20-%20retificado\\_0.pdf](http://www.mpsp.mp.br/portal/page/portal/cao_urbanismo_e_meio_ambiente/relat%C3%B3rio%20final%20-%20retificado_0.pdf).

<sup>160</sup> Memorandum from Advocacia-Geral Do Estado de Minas Gerais to Coordenador do Núcleo do Direito Ambiental do SISEMA, Presidente de Função Estadual do Meio Ambiente (Dec. 4, 2014), *available at* <http://www.age.mg.gov.br/images/stories/downloads/advogado/pareceres2014/parecer-15.407.pdf>.

<sup>161</sup> The 1987 Constitution of the Republic of the Philippines, art. II, sec. 16.

<sup>162</sup> *Minors Oposa v. Factoran*, G.R. No. 101083, 224 SCRA 792 (July 30, 1993). *See also* Elizabeth Barret Ristorph, *The Role of Philippine Courts in Establishing the Environmental Rule of Law*, 42 ELR 10866 (2012).

<sup>163</sup> Deutsche Gesellschaft für Internationale Zusammenarbeit, *Pursuing an Enabling Policy Climate for REDD-Plus Implementation in the Philippines: Review and Analysis of Forest Policy Relating to REDD-Plus* 10 (2013), *available at* <https://www.giz.de/en/downloads/giz2013-en-redd-plus-review-analysis-forest-policy-philippines.pdf>. *See also* *Minors Oposa v. Factoran*, G.R. No. 101083, 224 SCRA 792 (July 30, 1993) (finding right to be self-executing).

National laws in the Philippines consist of legislative acts and presidential decrees.<sup>164</sup> Philippine forestry governance is “a combination of antiquated and new laws” – Presidential Decree No. 705, the Revised Forestry Code of 1975, remains the major forestry law, but is supplemented with additional laws aimed at decentralization and comprehensive resource management.<sup>165</sup> The Revised Forestry Code gives the Bureau of Forestry jurisdiction and authority over all forest land, grazing lands, and forest reservations.<sup>166</sup> It contains basic forestry standards and practices and includes criminal offenses and penalties. The Forestry Code has been amended multiple times, including with Executive Order 277 in 1987 to strengthen provisions against illegal logging.<sup>167</sup> Despite this, it is often noted that the Forestry Code is “essentially utilization-oriented,” with a bias toward extraction and the allowance, even allowing for mining and plantations in natural forest.<sup>168</sup>

Perhaps most novel are the Philippines’ procedural rules governing environmental cases. In 2010, the Supreme Court of Philippines drafted the Rules of Procedure for Environmental Cases governing procedure in civil, criminal, and special civil actions in lower courts for cases involving enforcement of environmental and related laws and creating “Special Courts” for environmental cases.<sup>169</sup> Several of the procedural innovations include citizen suits, temporary

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<sup>164</sup> Ristroph, *supra* note 159. Presidential decrees were executed between 1972 and 1981 when President Ferdinand Marcos, through a declaration of martial law, gained control of both the executive and legislative branches. Decrees continue to be upheld to the extent not superceded or amended.

<sup>165</sup> Pursuing an Enabling Policy Climate, *supra* note 160. For examples of these numerous laws, see Republic Act No. 7160, 1991; Exec. Ord. No. 263, 1995 (the Local Government Code and Community-Based Forest Management Program, respectively). The Local Government Code (LGC), “grants authority to local governments to manage forestlands such as small watershed and social and community-based projects.” Executive Order No. 263 establishes a “Community-Based Forest Management Program” as a national strategy for sustainable development. Other pertinent enactments include the Republic Act 7586, 1992, creating the National Integrated Protected Area System to serve as the principal law governing set-asides or protected areas to conserve Filipino biodiversity; Executive Order 318 (2004), pertaining to Sustainable Forest Management and setting forth a national strategy to protect old growth forests and proclaimed watersheds; and Executive Order 23 (2011), banning logging and planned timber harvests in natural forests.

<sup>166</sup> The Revised Forestry Code, Pres. Dec. No. 705 § 5 (May 19, 1975) (Phil.).

<sup>167</sup> Exec. Ord. 277 (1987); U.S.AID EcoGov 2 Project, Philippine Forest and Wildlife Law Enforcement, Situationer and Core Issues (March 12, 2007) (“Prior to EO 277, prosecution of illegal logging cases was difficult. The State has to prove beyond reasonable doubt the various elements of the crime such as the cutting, gathering, collecting or removing timber from forest lands far from alienable and disposable land. In EO 277, ‘mere possession of timber or forest products, without the legal documents,’ consummates the crime of illegal logging.”)

<sup>168</sup> Pursuing an Enabling Policy Climate, *supra* note 160.

<sup>169</sup> Republic of the Philippines Supreme Court, A.M. No. 09-6-8-SC, Rules of Procedure for Environmental Cases (2010) (hereinafter Environmental Rules). The objectives of these Rules are “(a) To protect and advance the constitutional right of the people to a balanced and healthful ecology; (b) To provide a simplified, speedy and inexpensive procedure for the enforcement of environmental rights and duties recognized under the



environmental protection orders, and the Writ of Kalikasan (Writ of Nature).<sup>170</sup> The Environmental Rules also rely on the precautionary principle as an actual rule of evidence.<sup>171</sup>

The Rules allow that “any real party in interest... may file a civil action involving the enforcement or violation of any environmental law,” explaining by annotation that “[a] person who suffers damage or injury arising from an environmental prejudice which is also the same subject of a citizen suit can file a separate action under this section to recover for his personal injury. In this instance, a citizen suit can take place simultaneously with the filing of an individual complaint.”<sup>172</sup> The Rules also allow motions to intervene and disallow motions to dismiss complaints.<sup>173</sup> Yet most notable is the citizen suit provision’s breadth: “[a]ny Filipino citizen in representation of others, including minors or generations yet unborn, may file an action to enforce rights or obligations under environmental laws.”<sup>174</sup> The court may require the violator to “submit a program of rehabilitation or restoration of the environment, the costs of which shall be borne by the violator, or to contribute to a special trust fund for that purpose subject to the control of the court.”<sup>175</sup> Thus, a party typically cannot recover damages under the citizen suit provisions, but they may be able to force violators to pay to rehabilitate the damaged site.

The Environmental Rules also include several other innovations. The Writ of Kalikasan is available to “a natural or juridical person, entity authorized by law, people’s organization, non-governmental organization, or any public interest group accredited by or registered with any government agency.”<sup>176</sup> It allows a party to sue “on behalf of persons whose constitutional right

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Constitution, existing laws, rules and regulations, and international agreements; (c) To introduce and adopt innovations and best practices ensuring the effective enforcement of remedies and redress for violation of environmental laws; and (d) To enable the courts to monitor and exact compliance with orders and judgments in environmental cases.” Environmental Rule 1, Sec. 3.

<sup>170</sup> Hilario G. Davide Jr., *The Environment as Life Sources and the Writ of Kalikasan in the Philippines*, 29 *Pace Env'tl. L. Rev.* 592 (2012).

<sup>171</sup> Ristroph, *supra* note 159; *See* Rule 20 (“When there is a lack of full scientific certainty in establishing a causal link between human activity and environmental effect, the court shall apply the precautionary principle in resolving the case before it. The constitutional right of the people to a balanced and healthful ecology shall be given the benefit of the doubt.”).

<sup>172</sup> Environmental Rule 2, Sec. 4

<sup>173</sup> Environmental Rule 2.

<sup>174</sup> Environmental Rule 2, Sec. 5. A party filing a citizen suit need not pay filing or other legal fees prior to judgment, and if the party prevails it may receive “proper reliefs,” including “the protection, preservation or rehabilitation of the environment and the payment of attorney’s fees, costs of suit and other litigation expenses.” Environmental Rule 2, Sec. 12.

<sup>175</sup> Environmental Rule 5, Sec. 1

<sup>176</sup> Environmental Rule 7, Sec. 1.

to a balanced and healthful ecology is violated, or threatened with violation by an unlawful act or omission of a public official or employee, or private individual or entity, involving environmental damage of such magnitude as to prejudice the life, health or property of inhabitants in two or more cities or provinces.” The writ does not allow for damages, but can include injunctive relief or “[d]irecting the respondent public official, government agency, private person or entity to protect, preserve, rehabilitate or restore the environment.”<sup>177</sup> A party bringing an action under the Writ of Kaliksan is not precluded from filing separate civil, criminal, or administrative actions.

Another innovation is the Writ of Continuing Mandamus, allowing a “person aggrieved” to file petition “[w]hen any agency or instrumentality of the government or officer thereof unlawfully neglects the performance of an act which the law specifically enjoins as a duty resulting from an office, trust or station in connection with the enforcement or violation of an environmental law rule or regulation or a right therein, or unlawfully excludes another from the use or enjoyment of such right and there is no other plain, speedy and adequate remedy in the ordinary course of law.”<sup>178</sup> Judgment for the Writ of Continuing Mandamus can include a command that the respondent “do an act or series of acts until the judgment is fully satisfied, and to pay damages sustained by the petitioner by reason of the malicious neglect to perform the duties of the respondent, under the law, rules or regulations.”

The Rules also include several innovations regarding criminal offenses. “Any offended party, peace officer or any public officer charged with the enforcement of an environmental law may file a complaint before the proper officer in accordance with the Rules of Court.”<sup>179</sup> Moreover, in certain cases the Rules also give citizens the opportunity to participate in criminal actions.<sup>180</sup> And when a criminal action is filed, the default is that a civil action for the recovery of civil liability is also deemed instituted alongside the criminal action “unless the complainant waives

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<sup>177</sup> Environmental Rule 7, Sec. 15.

<sup>178</sup> Environmental Rule 8

<sup>179</sup> Environmental Rule 9, Sec.1.

<sup>180</sup> Environmental Rule 9, Sec. 3 (“In criminal cases, where there is no private offended party, a counsel whose services are offered by any person or organization may be allowed by the court as special prosecutor, with the consent of and subject to the control and supervision of the public prosecutor.”)

the civil action, reserves the right to institute it separately or institutes the civil action prior to the criminal action.”<sup>181</sup>

The Philippines’ liberal standing doctrine in environmental cases predates the Rules of Environmental Procedure and is embodied in *Minors Oposa v. Factoran*, also known as the Children’s Case of the Philippines.<sup>182</sup> Forty-three children from the Philippines, acting on their own behalf, on behalf of children of their generation and those generations yet born, filed an action to stop all logging in the Philippines. The Supreme Court held that the children have the right and the legal personality to take action, reasoning that every generation has a responsibility to the next to preserve the rhythm and harmony of nature for the full enjoyment of a balanced and healthful ecology. In a separate clean air case, the court went so far as to characterize standing as a “procedural technicality which may, in the exercise of the Court’s discretion, be set aside in view of the importance of the issue raised.”<sup>183</sup>

### **G. India**

India is governed by a common law legal system with constitutional guarantees of environmental protection. Article 21 of its Constitution guarantees the right to life, and as interpreted by the Supreme Court of India, this right includes all aspects of life which make it meaningful, complete and worth living, including the right to pollution-free water and air. The Court has further held that to disturb the basic elements of the environment, air, water, and soil, is a violation of the right to life and even that “the concept of ‘sustainable development’ is to be treated as an integral part of ‘life’ under Article 21.” The Constitution also mandates that the government and every citizen protect and improve the environment and safeguard the forests and wildlife of India.

India has many environmental statutes, some of which date to colonial times, including the Indian Forests Act and the Indian Fisheries Act. In the 1970s and 1980s India enacted modern environmental statutes, including the Water (Prevention and Control of Pollution) Act 1974, the

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<sup>181</sup> Environmental Rule 10.

<sup>182</sup> *Oposa v. Factoran*, G.R. No. 101083 (S.C. July 30, 1993) (Phil.). NOTE: include here what actually happened in the case.

<sup>183</sup> *Henares v. Land Transportation Franchising and Regulatory Board*, G.R. No. 158290, 505 SCRA 104 (Oct. 23, 2006).

Air (Prevention and Control of Pollution) Act 1981, and the Environment (Protection) Act 1986. The Ministry of Environment and Forest and Climate Change handles planning, promotion and coordination of environmental and forestry programs for the central government. State governments maintain State Pollution Control Boards (SPCB) responsible for implementing pollution-control laws. In cases of non-compliance, environmental laws provide for both penalties and imprisonment. The SPCBs have the authority to close industries for non-compliance, or to cut off their supply of water or electricity.

As the constitutional cases cited above demonstrate, Indian courts have not hesitated to use their authority to establish rules. India's judicial system grants authority over constitutional issues to the High Courts of the states and the Supreme Court. Lower state courts traditionally had jurisdiction to hear enforcement cases as well as disputes between private parties that might involve environmental issues. The National Green Tribunals Act of 2010 creates National Green Tribunals (NGTs) to handle environmental and natural resource cases, including those arising under environmental statutes. The NGTs have jurisdiction over "all civil cases where a substantial question relating to environment (including enforcement of any legal right relating to environment) is involved."<sup>184</sup> The NGT includes experts with technical expertise as well as judges and is authorized to enter orders establishing liability for damage to the environment and requiring restoration or other remedies. Such orders have been entered against private parties and against government agencies. The NGTs are not bound by the general Code of Civil Procedure, rather, they "shall be guided by the principles of natural justice."

Under the NGT Act, the courts are authorized to issue orders providing for "relief and compensation to the victims of pollution and other environmental damage" arising under Indian environmental statutes, as well as restitution for property damaged and restitution of the environment.<sup>185</sup> The court is also granted discretion to divide the compensation of relief to claimants and for restitution of the environment, as it sees fit.<sup>186</sup> Funds are generally to be paid to an environmental relief fund, but the court is able to prescribe how such funds will be

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<sup>184</sup> National Green Tribunals Act § 14(1).

<sup>185</sup> National Green Tribunals Act § 15(1).

<sup>186</sup> National Green Tribunals Act § 15(4).

utilized.<sup>187</sup> And NGTs are able to issue substantial penalties – including incarceration along with fines – for parties that fail to obey a court order.<sup>188</sup>

In a series of cases the Supreme Court has expanded its rulings on environmental matters. In a seminal case, it found the respondent liable for operating an enterprise engaged in a hazardous or inherently dangerous activity – operating heavy industrial plants producing highly toxic chemicals without permits, thereby causing serious environmental pollution. Instead of ruling on the total compensation/damages, the Court recognized the authority of the Central Government to determine the amount of money needed to carry out remedial measures. It, however, ruled that respondents were liable to pay to improve and restore the environment and their factories were ordered to be closed. Villagers were also allowed to institute suits in the appropriate civil courts to claim damages from the respondent.

In a case against tanneries, the Court ordered the Central Government to identify the loss to the ecology/environment and individuals/families who had suffered and to determine the compensation to reverse the environmental damage and compensate those who had suffered from the pollution. It also ordered that each tannery in the listed district be fined R 10,000, which was to be put into an “Environmental Protection Fund” to be used to restore the environment and compensate the affected persons.

Courts in India have thus not been hesitant to require payments for damages to natural resources, as well as to allow for restoration and replacement for environmental damages. In certain circumstances, courts have ordered parties to pay for the cost of reforestation and related expenditures, to pay for restoration and remediation from damages caused by hill-cutting and to cease from doing such activities, and to pay for cleanup of polluted rivers and the silting of a reservoir’s dam. Courts have also fashioned more innovative solutions. In *Vitthal Gopichand Bhungase v. The Ganagkhed Sugar and Energy Ltd.*, the offending party was found to have released industrial waste, molasses, and chemical-mixed water into a canal and lake. The company was directed to pay for the replenish water into the lake, and to pay the cost of

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<sup>187</sup> National Green Tribunals Act § 24.

<sup>188</sup> National Green Tribunals Act § 26.

environmental damages, but was also directed to pay a substantial sum in environmental restitution to be used for an initiative to raise environmental awareness. And in a case against oil companies for groundwater pollution caused by leakage from a storage tank and pipeline, the court ordered the companies to finance a government-run groundwater restoration project. Additionally, companies were ordered to pay compensation for contaminated wells and to pay for any upgrades or improvement to the water supply system necessary to support the affected village's drinking and cattle-feeding uses.

In another case, the court ordered a private company to pay a fine of nearly U.S.\$4 million for building a facility in the coastal zone without obtaining the proper approvals.<sup>189</sup> Among the environmental issues that the court addressed is “whether the project in question has caused environmental degradation, loss to environment, and destruction” in the coastal zone area. The NGT found restitution to be impractical, and thus instead imposed penalties, directing that nearly \$800,000 was to be spent on a new mangrove plantation program, the remainder going to the Environment Department. The NGT then gives detailed instructions on how the Environment Department is to spend the remaining funds: “for development of environment programme, including generate awareness, constructions of solid waste facilities, sewage management, public toilet facilities in small towns, which are not adequately funded and have no Municipal Council...special toilets on Highways in the State for womenfolk, so on and so forth.” The Supreme Court also imposes “exemplary damages” for damage to the environment. In a recent case involving a large copper smelter plant operating without a valid renewal of its environmental permits, the court assessed liability and found that the smelter had to pay ten percent of its profits before depreciation, interest, and taxes, or over \$15.5 million.<sup>190</sup> The Supreme Court also adopts strict liability for hazardous and inherently dangerous activities, and includes the “deep pocket” theory of assessing compensation based upon a company's size and economic clout: to ably deter, the “larger and more prosperous the enterprise, the greater must be the amount of compensation payable by it.”<sup>191</sup>

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<sup>189</sup> *Naim Sharif Hasware v. M/s Das Offshore Engineering P Ltd. & Ors.* (A. No. 15/2014), NGT Western Bench, Pune.

<sup>190</sup> *Sterlites Indus. (India) Ltd. Etc. v. Union of India & Ors.* ((2013) 4 SCC 575).

<sup>191</sup> *Shiram Gas Leakage case (Mc.C. Mehata v. Union of India)* ((1987) 1 SCC 395)

## **H. Democratic Republic of Congo**

The Democratic Republic of Congo (DRC) is a civil law country whose constitution of 2006 guarantees “all persons” the “right to a healthy environment.” This right corresponds to a constitutional “duty to defend [their] right to a healthy environment,” as the State is charged with ensuring “the protection of the environment and the health of the population.” The constitution requires that: “[a]ny pollution or destruction resulting from an economic activity gives rise to compensation and/or reparation. The law defines the nature of the compensatory and reparatory measures as well as the conditions for their implementation.” The constitution also criminalizes several types of environmental pollution, particularly violations dealing with toxic wastes or “any other dangerous product.” Thus, recovery for damages to natural resources, at least those resulting from economic activities, is embedded in the DRC constitution. Precisely how the law defines the nature of these compensatory and reparatory measures, as well as the conditions of their implementation, remains somewhat less clear.

To implement these measures, in 2011 the DRC passed the Environmental Protection Act. The Act defines environment broadly to include socioeconomic and cultural dimensions: “The ensemble of natural or artificial elements and the biological and geochemical equilibria to which they contribute, as well as the economic, social and cultural factors that promote the existence, transformation, and the development of the terrain, living organisms, and human activities.” The Act also includes the “polluter pays” principle, requiring that, “The costs resulting from measures for the prevention, management of pollutants, and reduction or restoration of polluted sites or areas are borne by the polluter.” Thus, liable parties must restore ecosystems or pay penalties to restore any environments that they may have harmed through pollution. The Act also requires the State to create an Environmental Fund for research, conservation, clean-up operations, rehabilitation, and pollution prevention.

Several chapters of the Environmental Protection Act elaborate further on natural resource damages. Chapter 6 concerns “prevention of risks and control of pollution and other nuisances.” Among these, industrial sites are required to produce environmental health and safety emergency plans and place a deposit in a DRC-registered bank to guarantee the restoration of the site after the cessation of its activities. In addition, generators of waste are obliged to ensure proper

management of its disposal and oil and gas operations are required to take the necessary steps to prevent and manage any case of hydrocarbon pollution.

Chapter 7 concerns “Civil Liability.” This chapter describes the “polluter pays” principle of Article 12, providing that, “every physical or moral person holds not only civil liability for infractions committed in violation of the Act and its implementing measures ... but is also wholly responsible for the payment of fines and costs resulting from these violations, unless it can be proven that it was impossible to avoid committing the infraction.”

Chapter 8 concerns “Offences and Penalties.” Various fines and penalties are specified, including prison sentences and multimillion dollar fines, for circumventing various environmental protections, including the Environmental Impact Assessment process, the ban on the importation of dangerous or radioactive waste, the improper disposal of waste, or the violation of soil, water, or air pollution regulations. Beyond the punishments alluded to above, polluters must re-export or remove illegally imported waste and restore polluted or degraded sites without delay. If this is not achieved by a specified deadline, the tribunal may directly order the necessary work at the cost of the polluter.

In 2002, DRC passed the Forest Code (No. 011/2002), the country’s principal statute governing forest resource management. The Forest Code asserts state ownership of all forests. Its objective is to create “a legal framework that allows the forest to both fulfil its social and ecological roles in balance, the forest administration to contribute considerably to national development, and for local people to take an active part in forest management and be able to draw legitimate benefits.” While some of the implementing decrees have been issued, such as forestry enforcement regulations, many of the decrees needed to implement the Forestry Code have yet to be issued.

Since the Environmental Protection Act was passed relatively recently, very few judicial decisions have been found implementing the polluter pays principle, though at least one case has been brought under the principle. A judgment rendered on March 27, 2014, obliged the Congolese state and two mining companies, la Gécamines and the Mineral Company of South



Katanga (CMSK), to pay farmers, fish pond owners, and downstream populations a total of U.S. \$6,000 in damages for dumping toxic substances into the Kafubu River and destroying their fields, their fish ponds, and the fish in the Kafubu River. However, the plaintiffs have since appealed the decision to seek a larger award.

## **VI. Synthesis**

Statutory environmental liability provisions, which have been in place for many years in the US and in many European countries, are increasingly emerging in other countries--including the tropical developing countries at the center of global conservation planning. Among the seven tropical countries studied here (Brazil, Democratic Republic of Congo, India, Indonesia, Mexico, Nigeria, and the Philippines), one country, Nigeria, is limited to private causes of action for harms to private resources, both through the common law and in statute, but allows class action suits for community damages in specific circumstances, which can be construed as a bridge to public liability. The other six countries have broad statutory provisions creating liability for harms to public natural resources. Provisions that are generally broader than those observed in the US and EU include that they typically cover a broad range of resources and injuries, in some cases under strict liability, and extend standing to sue beyond public agencies, to include affected communities and individuals. One area in which the liability provisions are less broad is in the measures of damages articulated in the statutes, which typically do not explicitly capture full compensation intended to make the public whole for the injury. However, implementation of the statutes has been limited.

### **Tropical country statutes have generally built on US and EU experiences**

The statutes reflect the strong constitutional commitments to a healthy environment in most of the studied countries, and embrace contemporary principles embodied in international environmental law, such as the “polluter pays” principle. Across the six tropical countries, the language identifying the scope of coverage generally does not delimit specific resources or specific geographic areas: broadly speaking, if an entity causes environmental harm, then it will be liable for restoring the resources and compensating for the harm. Indeed, liability provisions in these countries have been applied to a broad range of environmental harms, including pollution control, as well as illegal logging, burning, and land clearing for agricultural expansion. This breadth of resource coverage is in direct contrast to, for example, the more piecemeal approach taken by the United States, which allows for natural resource liability under discrete, resource- or harm-specific statutes: for example, OPA authorizes liability for damages caused by oil spills, CERCLA for the release of hazardous substances, and the National Marine Sanctuaries Act (among others) for areas protected as designated marine resources. It also represents a more

expansive view of the types of environmental harm addressed with liability, extending beyond pollution, which has been at the center of U.S. legislation.

Several statutes also explicitly recognize a wide range of environmental goods and services when estimating a monetary value of resource losses, including those sold on a market, as well as other non-market goods and services. This represents a more inclusive approach relative to traditional common law tort remedies, which have typically been limited to lost property value or financial costs incurred. For example, Mexico's liability act defines environmental damages to include general losses to the chemical, physical and biological conditions of habitats alongside a loss of environmental services. In other cases, where the statutes may be silent about ecosystem services, the implementing rules or guidance documents provide descriptions of environmental services for which compensation is to be recovered. Indonesia, for example, lists a broad range of types of damage subject to liability claims, including timber resources, hydrological services, biodiversity and genetic diversity and carbon stocks. However, it does not fully account for non-marketed goods and services, including non-timber forest products or cultural services.

Another attribute of the environmental liability provisions across the studied countries is the type of mental state required for imposing liability. Many of the countries examined allow for strict liability in environmental cases. In Brazil, for instance, a party need only demonstrate the existence of environmental degradation and a causal link in order to establish strict, joint and several liability. In Mexico, strict liability is combined with judicial discretion to increase penalties in cases involving intentional violations. In contrast, other countries, including Indonesia, follow a more traditional, common law approach in providing for strict liability only in more "inherently dangerous" situations, such as those involving hazardous substances or serious threats to the environment.

Environmental liability statutes in these countries also have introduced innovations to increase the public's access to the courts for harm to the environment, including broader standing and procedural rules, and also creation of specialized environmental courts. In keeping with trends in the United States and Europe, nearly every country in our review authorized individuals, communities, and in some cases NGOs, to bring suit to remedy public and collective environmental harms. In a country where public resources for environmental enforcement are

very constrained, such broad standing increases the likelihood that environmental cases will be brought for significant environmental harms. In contrast, in the U.S., affected members of the public can bring cases to seek injunctions for cleanup of environmental contamination of public resources, but cannot bring a claim for harm to public natural resources. Private actions for harm to private resources are recognized in the Oil Pollution Act of 1990.

Further, the Philippines has developed new Rules of Procedure for Environmental Cases that expressly permit broader standing and access to courts, and India has noted that the mandatory rules of civil procedure used in its courtrooms do not apply in environmental cases brought in its specialized environmental tribunals, which instead rely upon more streamlined “principles of natural justice.” A number of countries, including Mexico and the Philippines, have also instituted courts with specialized environmental jurisdiction, seeking to increase the expertise of the judges for cases that often involve technical knowledge.

On the other hand, the statutory measures of damages employed in these countries are also limited in some respects. In most cases, liability statutes typically allow *either* for restoration or replacement of injured resources *or* when restoration is not possible, compensation for damages to resources. As a result, these provisions generally do not recognize the interim lost value from time of injury to full recovery of resource. In contrast, in the US and EU, the measure of damages is very explicit about including *not only* the costs of restoration or replacement, *but also* the interim lost value. If compensation for interim lost value is not made in tandem with restoration, the public would not be “made whole” for its losses from the environmental harm. Such omissions can have significant implications on the size of liability claims, particularly when dealing with hazardous materials that do not readily degrade in the environment (e.g., heavy metals, radiation, acid mine runoff, PCBs) or deforestation of old growth forests where recovery may take a very long period, or may never occur completely, even with active restoration activities.

### **But implementation has been limited**

Critically, use of the liability provisions appears limited in most of the countries to date. We did not review the implementation of liability statutes in detail, although available evidence highlights a range of limitations. According to public reports, a limited number of cases have

been resolved in each country; further most of the countries do not appear to be targeting the most severe environmental harms they face. As a result, these countries are not realizing the potential for the environmental liability provisions to provide substantial deterrence incentives, restore injured resources and compensate the public for interim losses.

Indonesia stands out for its efforts to target major environmental harm with liability suits, as part of a portfolio of civil and criminal enforcement tools. It has won large natural resource damage claims, penalties, and jail time for executives in several cases targeting large-scale harm by large companies engaged in land clearing protected peat forests through burning, principally to establish palm oil plantations. In contrast, many cases have been successfully brought in India resulting in compensation and/or mandatory cleanups, related to both pollution and deforestation, but most claims are from citizen suits rather than government initiatives. Brazil has had authority to bring cases for over 20 years, and yet we could find reports of only a small number of cases for limited injuries and negligible payments. For Mexico, it is too early to tell how the law will be applied, since the Federal Environmental Liability Act was only passed in 2013.

Importantly, an expansive liability provision can easily be rendered ineffectual in the absence of effective complementary enforcement procedures and resources. For example, it remains difficult in countries such as Brazil, Indonesia, and Nigeria for the government to collect money even in cases where damages were assessed. Moreover, the extent to which funds recovered through liability provisions actually contribute to improving natural resource damages is in question. When the responsible party is tasked with restoring resources, the court does not always require adequate judicial, agency, or other expert oversight of the restoration. Further, monetary damages are not available to all parties bringing suit. For the most part, entities other than the government – including communities, individuals, and NGOs – can only invoke injunctive action for the responsible party to stop the harm and restore resources, but do not collect monetary damages.

## **Recommendations**

Considerable opportunities remain to strengthen both liability provisions and their implementation. Reform is important to ensuring that liability provisions yield the deterrence and corrective justice purposes for which they were designed. Notably, even where provisions

are implemented, awarded values are often very small and not commensurate with the identified injuries. This performance reflects not only limitations in the law, but shortcomings in resources, data availability, awareness and understanding, and political will. We identify six priority areas through which liability provisions can be strengthened: 1) legislative reform to expand the scope of liability provisions, 2) new technical resources to clarify and facilitate the implementation of liability provisions, 3) capacity building and awareness raising efforts about environmental liability among judges, prosecutors, and others 4) capacity building and awareness raising within civil society about their right to standing, 5) integration of liability into broader environmental governance reforms, and 6) cross disciplinary research on the role of liability to strengthen environmental governance.

**(1) Expand and clarify the scope of liability provisions.** Legislative reforms for countries to consider, in order to more fully account for harm, include imposing strict liability for a broader range of environmental harms, expanding standing beyond public entities, and delineating a more complete measure of damages, where they are missing. In the countries studied, environmental damages are broadly defined, and cases often reflect a broad perspective on environmental goods and services, with damages extending beyond the traditional focus of private tort, and not limited to the lost value of marketable products. However, there is still a need for legislation to adequately cover both the costs of restoration and replacement of injured resources *and* the interim loss in value pending full resource recovery. Moreover, opportunities remain to clearly specify, in statute or enabling regulations, that valuation is to cover the full range of lost ecosystem services, including cultural, supporting, and provisioning services (see Box 1 above), not just the value of goods produced for market sale.

**(2) Create new technical resources to clarify and facilitate the implementation of liability provisions.** Liability is unique among enforcement tools, in part, because of its strong link to environmental sciences and environmental economics in order to document resource injuries, develop restoration projects, and estimate interim lost values. Valuing non-market services is challenging, particularly in the context of limited data, and requires technical expertise that understandably remains under-represented among prosecutors and judges, and potentially in agencies preparing the technical claims. Moreover, related studies regularly require outside

expertise, and can be expensive. For example, cases in Brazil<sup>192</sup> and Indonesia<sup>193</sup> illustrate the limited use of available valuation tools, including the failure to account for long-term interim losses during forest recovery.

Technical guidance and resources, and related educational materials, are needed to increase knowledge of how best to assess natural resource damages, particularly in the context of tropical developing countries that often have limited baseline datasets, and human and financial resources. In the U.S. and EU, considerable investment has been made in the development of implementing regulations and guidance documents. These also identify the range of appropriate and cost-effective procedures for a damage assessment, while explicitly acknowledging that the scale and site-specificity of the studies should be tailored to the scale of the incident. In a number of countries there is a need for clearer, more accessible guidance on what types of valuation methods (approaches, formulas, standards) should be applied to inform valuation. There is also a need for improved access to valuation data, and countries could also promote related advances, including the development of databases to support the quantification of injuries and valuation of the loss of environmental services. There is also scope for the creation of simplified procedures for valuing small incidents, such as the Type A model which forecasts injuries and calculates lost values for injuries from oil spills, which was developed under the U.S. CERCLA regulations in the 1980s and was applied in many small oil spills to value at least part of the damages.

Many tropical developing countries are also making substantial investments in developing natural capital balance sheets (also known as green accounting), which quantify and place monetary values on environmental goods and services.<sup>194</sup> There is scope to draw on these existing national initiatives, which are already quantifying and placing monetary values on environmental goods and services, to inform litigation. They might provide methods, baseline data, default values and supporting evidence to inform the quantification of injuries, assessment of restoration options, and valuation of interim losses.

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<sup>192</sup> *Supra* footnote 157.

<sup>193</sup> *Supra* footnote 118.

<sup>194</sup> For example, Wealth Accounting and Valuation of Environmental Services, <https://www.wavespartnership.org/en>;

**(3) Build capacity and awareness about environmental liability among judges, prosecutors, agency officials, and legislators.** Valuing injuries relies not only on baseline data, technical knowledge and resources, but also an understanding of environmental accounting, including the diverse values derived from nature--expertise that remains under-represented among prosecutors and judges. This technical expertise is essential for all parties involved in preparing, presenting and deciding cases, as well as those drafting statutes.

Countries should continue to work towards increasing awareness and appreciation of provisions of environmental laws in general, and liability provisions in particular. These efforts should feed into broader improvements in institutional capacity (policies, procedures, performance monitoring, adaptive management systems, and technical skills). This further involves increased interagency cooperation, which is particularly important to implementing liability provisions, because it can require contributions from a wide range of government actors (prosecutors' offices, forest and/or environmental ministries, state auditors).<sup>195</sup>

Building a pool of judges with such specialized knowledge is part of the reasoning behind the creation of green courts. Countries could benefit from the Indonesian example, which has started to provide related training as part of a "green judge" certification program, although there remains a need to evaluate effectiveness of these programs. India, Mexico, and the Philippines have provided training for judges in courts of general jurisdiction.

**(4) Build capacity and awareness among communities and civil society about their rights to sue for compensation.** Efforts must also be made to educate citizens as well as judges and prosecutors. The significant breadth of standing and access to courts offered in many of these countries is afforded to affected individual citizens, interest groups, and community groups, and each of these groups should be educated about their rights to seek judicial redress. For example, much of the environmental litigation in India has been brought by citizens as public interest litigation and litigation efforts in Indonesia, while often driven by the Ministry of Environment, have equally been the result of aggressive civil society engagement to provide both technical

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<sup>195</sup> Jacob Phelps, Bernadeta Hariyanti, Anna Christina Sinaga, Ahmad Dermawan. Environmental Valuation in Indonesia: Implications for forest policy Legal Liability and State Loss Estimates. Center for International Forestry Research (CIFOR), Bogor, Indonesia (2014).



support, and domestic and international pressure. Similar efforts by citizens have been important in the Philippines and suits by NGOs have been important in Mexico.

**(5) Priority setting and strategic use of liability.** There is a further need to ensure the liability provisions are developed and applied strategically in ways that best meet governments' environmental protection priorities. For example, while efforts to increase environmental enforcement have often focused on small scale actors, there is scope to prioritize use of liability to target large scale environmental harms and the financiers and planners often behind them.<sup>196</sup> Strategic use of liability in these types of priority cases might yield greatest effects.<sup>197</sup>

Such priority setting also provides an opportunity to link--as some countries are starting to do-- liability provisions with broader good governance and environmental sustainability initiatives. Brazil and Indonesia, for example, have attempted to coordinate civil, criminal, and other approaches (e.g., voluntary, consumer-led, market based sustainability strategies) in their efforts to curb deforestation.<sup>198</sup> For example, priorities such as corruption in land and resource allocation processes, or abuse by large corporate entities and/or local elites represent key priorities within some of the target countries.

#### **(6) Invest in cross-disciplinary research on the role of liability in strengthening environmental governance**

Government enforcement is a fundamental part of environmental governance critical to promoting the sustainable management and conservation of tropical ecosystems and resources. Yet, environmental law, including liability provisions, remains an under-appreciated field in of most tropical developing countries. Increased research on these topics will be essential to providing the intellectual leadership to help inform future legislation. It will also be important to helping bridge the gaps across fields (environmental sciences, economics, law, governance) and

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<sup>196</sup> Fiona Downs. *Rule of Law and Environmental Justice in the Forests: The Challenge of 'Strong Law Enforcement' in Corrupt Conditions*. Anti-Corruption Resource Center (2013); Marilyne Pereira Gonclaves, Melissa Panjer, Theodore S. Greenberg, William B. Magrath. *Justice for Forests*. World Bank (2012).

<sup>197</sup> Swanson T and Kontoleon A. n.d. What is the role of environmental valuation in the courtroom? The US experience and the proposed EU Directive. <https://www.elaw.org/system/files/Environmental.Valuation.Courtroom.pdf>. Accessed 12 December 2013.

<sup>198</sup> Nepstad 2014 *op. cit.*; Nellemann et al 2014 *op. cit.*

to identifying interventions that can make liability a more meaningful and active part of environmental governance. Priority research questions include:

- What factors are associated with the use and courtroom success of liability cases in key tropical countries? What are the related challenges (e.g., resources, types of knowledge, legal barriers, and governance conditions) and opportunities? How does the organizational location of responsibility for bringing liability suits (e.g., in the resource agency responsible for regulation that frequently develops close ties to the sector, a separate environmental agency, or in a prosecutorial office), reinforce or counteract the other challenges? How do prosecutors and judges in tropical countries perceive and understand environmental liability? What is the effectiveness of investments in environmental training programs and "green bench" initiatives?
- What types of data resources and legal provisions could serve to facilitate prosecutors' and judges' ability to access and interpret information on environmental liability? How can environmental valuation be streamlined to better inform liability cases (e.g., legal innovations, valuation databases, training, valuation guidelines)?
- Are there potential links between liability and emerging natural capital and green accounting initiatives? What is the role of liability in the context of voluntary environmental standards and Green Economic planning?
- What can be learned from comparative legal research on the effectiveness of remedies used by courts in different countries and legal systems to restore damaged resources, correct violations, and deter future violations and actions that harm the environment?
- What effects do we observe from innovations to improve access to courts for environmental cases (e.g., expanded standing, green benches)? How effective are cases brought by communities, individuals or NGOs in addressing the environmental harms, relative to cases brought by public prosecutors? What is the comparative advantage of each? How can non-government actors be best supported to leverage their standing to bring liability suits in tropical developing countries?