Crafting Standardization: A Framework For Environmental Degradation Damages At The ICJ

Lauren Maunder*

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INTRODUCTION: THE BOOMING FIELD OF INTERNATIONAL ENVIRONMENTAL LAW

In recent decades, international environmental law has emerged as a distinct field of legal work and academic study. As the impacts of human-generated environmental destruction, waste, and other byproducts of industrial development are increasingly perceived in a negative light, some states have begun to acknowledge their "responsibility to ensure that activities within their own jurisdiction or control do not cause damage to the environment of other States."[1]

A key early milestone in the development of international environmental law was the 1972 United Nations ("UN") Conference on the Human Environment in Stockholm ("Stockholm Conference").[2] The Stockholm Conference produced the Stockholm Declaration, a document announcing the adoption of 26 pro-environmental principles and an Action Plan geared toward future ecological improvement.[3] 113 of the United Nations' then-132 member states attended—a high rate of participation indicating that, by the 1970s, environmental issues were of increasing concern across the globe.[4] That concern further crystallized in global efforts such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora ("CITES"),[5] the UN Sustainable Development Goals,[6] and the Paris Agreement,[7] among other cross-state legal initiatives.

Despite its comparatively nascent nature, environmental law has made its way into the annals of customary international law as well. The *sic utere*[8] principle—also known as the transboundary harm principle—is considered "the most widely accepted environmental norm of customary international law."[9] It posits that states should not utilize their property in a manner that would harm neighboring states' lands. Furthermore, the popularity of *sic utere* as a legal theory is indicative of "the emergence of a set of legal

1 Edith Brown Weiss, *The Evolution of International Environmental Law*, 54 JAPANESE Y.B. INT'L. L. 1, 5 (2011).

2 *United Nations Conference on the Human Environment, 5-16 June 1972, Stockholm*, U.N., https://www.un.org/en/conferences/environment/stockholm1972 [https://perma.cc/JQB6-VTF3].

3 *Id.*

4 Pamela Chasek, *Stockholm and the Birth of Environmental Diplomacy*, IISD (Sep. 2020), https://www.iisd.org/system/files/2020-09/still-one-earth-stockholm-diplomacy_0.pdf. [https://perma.cc/PL56-7K3M]

5 *What is CITES?*, CONVENTION ON INT'L TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA, https://cites.org/eng/disc/what.php [https://perma.cc/8BHT-8VWA].

6 *THE 17 GOALS*, U.N., https://sdgs.un.org/goals [https://perma.cc/2NT3-Q58J].

7 *The Paris Agreement*, U.N., https://www.un.org/en/climatechange/paris-agreement [https://perma.cc/YFU7-6LJW].

8 This term originated in the phrase *sic utere tuo ut alienum non laedas*, of ancient Roman law. It translates roughly to "everyone must use his own property so as not to harm another." *See* Tseming Yang & Robert V. Percival, *The Emergence of Global Environmental Law*, 36 ECOLOGY L.Q. 615, 646 (2009).

9 *Id.*

principles and norms regarding the environment, such that one can arguably describe it as a body of law" within modern-day international law.[10]

While the *sic utere* norm is widely accepted, it is unclear what consequences are triggered when a state violates the norm. In 1992, twenty years after the Stockholm Conference, "[s]tates acknowledged . . . that little progress had been made since 1972 in developing international law regarding liability and compensation for 'adverse effects of environmental damage' and urged [s]tates . . . to develop it."[11] The effectiveness of such statements, however, can be debated. Global calls to action led the International Law Commission to promulgate its Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities to the United Nations General Assembly in 2006. However, those suggested measures have not been utilized in International Court of Justice ("ICJ") cases in subsequent decades.[12]

As a result, a gap exists between the theory and the realized practice of international environmental law. Calls for change and sustainable action have accumulated for decades. Yet, concrete pro-environmental adjudication at the international level still lags. This note, therefore, aims to analyze a narrow portion of this issue by examining how damages are calculated for environmental degradation claims, brought as contentious proceedings between states at the ICJ. Analysis will begin with an examination of how damages awards have been calculated in the ICJ's recent case, *Certain Activities Carried Out by Nicaragua in the Border Area ("Costa Rica v. Nicaragua")*, decided in 2018.[13] Then, this note will survey other states' and organizations' existing frameworks for determining degradation damages. It will end by identifying beneficial characteristics of those frameworks in pursuit of an improved, standardized mechanism for tabulating cross-state environmental damages claims. Ultimately, the goal of this note is to forge a path toward greater clarity in environment-focused ICJ decisions. Examining the Court's decision in *Costa Rica v. Nicaragua*, it becomes evident that creating a standardized framework for calculating

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10 *Id.* at 615.

11 This call to action occurred in the 1992 Rio Declaration on Environment and Development. *See* Brown Weiss*, supra* note 1, at 23.

12 *See* Int'l L. Comm'n, *Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities, with Commentaries*, U.N. Doc A/RES/61/36 (2006), https://legal.un.org/ilc/texts/instruments/english/commentaries/9_10_2006.pdf [https://perma.cc/RM7U-WMY7]; *see also Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicar.)*, Judgment, 2018 I.C.J. 15, 16 (Feb. 2), https://worldcourts.com/icj/eng/decisions/2018.02.02_Costa_Rica_v_Nicaragua.htm [https://perma.cc/U5XB-W8RX] [hereinafter Costa Rica v. Nicaragua]. As the ICJ notes in this case, this is the first environmental degradation contentious case to take place at the Court. Such an assertion implies that the Transboundary Harm Draft Principles were not utilized in any ICJ case deliberation in the twelve years between the Principles' publication in 2006 and the ICJ's *Costa Rica v. Nicaragua* case in 2018.

13 Costa Rica v. Nicaragua, *supra* note 12.

environmental damages in contentious cases may assist the Court in achieving that clarity.

BACKGROUND: *COSTA RICA V. NICARAGUA* AT THE ICJ

In 2010, Costa Rica applied to institute proceedings at the ICJ, alleging that the neighboring country of Nicaragua engaged in the destruction of Costa Rica's natural resources. Nicaragua allegedly cleared vegetation and dredged a canal, which harmed nearby Costa Rican ecosystems.[14] Costa Rica sought monetary damages from Nicaragua for the environmental damages incurred within Costa Rican territory along the Costa Rican-Nicaraguan border.[15] Nicaragua, in its response, argued that Costa Rica had simultaneously damaged Nicaraguan natural resources and land. As a result, Nicaragua should not be compelled to pay Costa Rica for environmental degradation damages because any ecological harm was reciprocally incurred.[16]

In the Court's 2018 decision, the ICJ first stated that "damage to the environment, and the consequent impairment or loss of the ability of the environment to provide goods and services, is compensable under international law."[17] The Court then considered the methods of tabulating environmental damages put forth by each party. Costa Rica argued for the ***ecosystem service approach***, a well-rounded valuation of environmental loss that broadly considers "both the direct and indirect use values of [lost] environmental goods and services in order to provide an accurate reflection of the value of the environment."[18] This approach is broad and liberal, accounting for both environmental goods and services that can be "traded on the market," and those that have indirect value through services, such as carbon sequestration and floodplain maintenance.[19] Costa Rica then tabulated the value of its lost ecosystems by referencing the value of comparable ecosystems still flourishing in other regions.[20]

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14 *Id.* at ¶ 1-3. In response, Nicaragua also instituted proceedings against Costa Rica for "violations of Nicaraguan sovereignty and major environmental damages on its territory." The ICJ joined both countries' proceedings and, for the sake of simplicity, they will be referred to as *Costa Rica v. Nicaragua*.

15 *Id.* ¶ 49.

16 *Id.* ¶ 50. Notably, neither party argued that environmental damages are conceptually invalid nor legally unenforceable. Both sides accepted the premise that international environmental degradation damages can be incurred and did not question the ICJ's ability to order them paid.

17 *Id.* ¶ 42. This statement is significant. While the International Court of Justice does not utilize the principle of *stare decisis*, this nonetheless conclusively sets out the Court's stance on environmental damages between countries.

18 *Id.* ¶ 47.

19 *Id.* For a discussion of prior usages of the ecosystem services approach, refer to *id.* ¶ 46.

20 *Id.* The Court notes, "[u]nder the value transfer approach, the damage caused is assigned a monetary value by reference to a value drawn from studies of ecosystems considered to have similar conditions to the ecosystem concerned." When utilizing this approach, Costa Rica primarily considered

Defendant Nicaragua, in contrast, argued that the ***replacement costs method*** of determining environmental loss should be utilized instead. Compensation under that method would entail only the funds necessary to replace and restore those natural resources that were directly damaged.[21] Nicaragua noted that the replacement costs method was previously used by the United Nations Compensation Commission ("UNCC") to process claims of governments and individuals stemming from Iraq's invasion of Kuwait through 2005.[22] Replacement costs can be calculated "by reference to the price that would have to be paid to preserve an equivalent area until the services provided by the impacted area have recovered."[23]

Costa Rica, in response, rebutted Nicaragua's replacement costs approach: it argued that the claims between the two states implicated "radically different" subject matter than that of typical replacement value claims such as those under the UNCC. Moreover, the subject matter and practical adjudication of environmental claims evolved since the replacement cost theory's heyday in the early 2000s.[24] By destroying a component in the natural environment, that component's future growth *potential*, in addition to its current economic value, has been severed. Any reverberating value that resource may have provided Costa Rica later in its life cycle will no longer occur.

ICJ Decision and Reasoning

The Court, after hearing both theories, undertook an "overall assessment" that considered both parties' claims and utilized some of the methodologies of each.[25] Noting that "international law does not prescribe any specific method of valuation for the purposes of compensation for environmental damage," the Court did not exclusively choose either Costa Rica's or Nicaragua's proposed methodology; they also declined to adhere solely to any other existing method of valuation.[26] Through this compromise-oriented analysis, the Court ruled that Costa Rica was entitled to US$120,000—an amount significantly higher than that suggested by

ecosystems in Mexico, Thailand, and the Philippines, to determine their lost biodiversity could be valued at "US $855.13 per hectare for the first year after the loss was caused." *Id.* ¶ 70.

21 *Id.* ¶ 40.

22 *Establishment and Mandate of the United Nations Compensation Commission (UNCC)*, U.N., https://uncc.un.org/en [https://perma.cc/KG95-HWBM].

23 Costa Rica v. Nicaragua, *supra* note 12, ¶ 49.

24 *Id.* ¶ 48.

25 *Id.* ¶ 78. The Court noted that both parties' methods of calculating damages were valid on the international scale; the Court's reticence to conclusively choose either side may stem from a reluctance to impact either theory's perceived validity.

26 *Id.* ¶ 52.

Nicaragua's 'replacement value' metric, yet considerably lower than what Costa Rica's 'ecosystem services' process would compute.[27]

Following the ICJ's decision in *Costa Rica v. Nicaragua*, critics have argued that "the reasoning employed by the Court leaves much to be desired."[28] By declining to articulate a step-by-step process to determine cross-state environmental damage payouts, the ICJ abstained from creating a consistent method to calculate future states' environmental degradation claims. Admittedly, the ICJ did consider the "five heads of damage"—specialized categories whose harm merits recovery—but it failed to verbalize how those five were balanced.[29]

Despite the Court's repudiation of any singular method of calculating environmental degradation damages in cross-state claims, the Court did indicate some of its thought process in its decision. The Court emphasized that damages were only awarded for costs *directly related* to the harm Costa Rica incurred. Additionally, when calculating damages owed, the Court adopted a portion of Costa Rica's modified ecosystem services approach, as the published decision made note of the "varied rates of recovery of different elements of the environment."[30] This indicated a preference toward flexible analyses for cases such as *Costa Rica v. Nicaragua*, and in circumstances where stakes are high and the global legal community will undoubtedly scrutinize the Court's decision and reasoning.

Following ICJ proceedings, Nicaragua ultimately compensated Costa Rica the precise amount ordered by the Court, marking this case a successful extension of international environmental law.[31] In light of that success, and in the context of an ever-increasing awareness of environmental issues over time as discussed above, subsequent environmental damages claims are likely to be brought by states at the International Court level in the future.[32]

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27 *Id.* ¶ 86.

28 Jason Rudall, *Certain Activities Carried out by Nicaragua in the Border Area (Costa Rica v. Nicaragua). Compensation Owed by the Republic of Nicaragua to the Republic of Costa Rica*, 112 AM. J. INT'L L. 288 (2018), https://scholarlypublications.universiteitleiden.nl/access/item%3A2913443/view [https://perma.cc/AS7H-UGCH].

29 *ICJ Determines First Ever Compensation Claim for Environmental Harm*, HERBERT SMITH FREEHILLS (Apr. 13, 2018), https://www.herbertsmithfreehills.com/notes/publicinternationallaw/2018-04/icj-determines-first-ever-compensation-claim-for-environmental-harm [https://perma.cc/M2B7-3A3J].

30 *Id.*

31 Rudall, *supra* note 28, at 288 (where Rudall notes that "[t]he judgment is the first time that the ICJ has adjudicated compensation for environmental damage, and it is only the third time the ICJ has awarded compensation at all.")

32 Additionally, three requests for advisory opinions on emerging climate issues were heard in 2024. The Republic of Vanuatu led the push for an ICJ advisory opinion regarding attribution of fault for climate change to countries. Chile and Columbia requested a similar advisory opinion from the Inter-American Court of Human Rights, contextualized within regional human rights norms. Lastly, a coalition of small island states ("COSIS") requested a marine environment-focused climate attribution advisory opinion from the UN's International Tribunal for the Law of the Sea ("ITLOS"). These emerging cases reflect the general recognition that "a growing number of climate-related legal initiatives are ending up in front of international courts." *See International Court Actions 2024-2025*,

Therefore, as international environmental law is likely to grow in scope and utilization in the future, greater standardization in the field is worthwhile for ease of applicability and trustworthiness considerations.

Standardization is important in tabulations of legal damages, as without it risk opens for "chronic judicial uncertainty, contrary to the legitimate expectations of the parties," which "in practice derails the principle of full compensation."[33] Consistent "measurement of damages quantum" is thus necessary.[34] Simultaneously, however, the very nature of international law—a regime in which "nations lack ideological conformity," and consensus can thus be difficult to reach—makes standardization of damages calculations difficult.[35] A consistent, clear articulation of damages calculations and financial awards, applicable regardless of country, would therefore benefit the ICJ, providing consistency and reliability in the Court's decision-making processes.

SURVEY: ENVIRONMENTAL DAMAGE COMPENSATION SCHEMES ACROSS STATES AND TREATY ORGANIZATIONS

This paper will now examine existing methods of calculating environmental damages, both within individual countries and in international organizations. Its goal is to elucidate presently available and practicable methods of rules-based environmental harm tabulation that could be utilized by the Court in future cases akin to *Costa Rica v. Nicaragua*, allowing the Court to espouse clearer and more specific methods in its decisions. Even though some of the compensation schemes henceforth discussed may be structured to compensate private actors, rather than states, they can nonetheless provide insight into what methodologies are both possible and practicable.

States Surveyed

To conduct this survey, a random sample of countries was chosen. Given the strong track record of enforcement of private-law damages suits in the United States ("U.S.") and European Union ("EU"), those countries were

CLIENTEARTH, https://www.clientearth.org/campaigns/international-court-actions/ [https://perma.cc/MW8Z-Y2LC].

33 Frank S. Giaoui, *Towards Legally Reviewable Damage Awards*, 1 CORP. & BUS. L.J. 1, 8 (2020).

34 *Id*. at 1.

35 Jonathan S. Solorzano, *An Uncertain Penalty: A Look at the International Community's Inability to Harmonize the Law of Liquidated Damages and Penalty Clauses*, 15 L. & BUS. REV. AM. 779, 779 (2009); *see also* John Y. Gotanda, *Awarding Interest in International Arbitration*, 90 AM. J. INT'L L. 40 (1996) (illustrating that the lack of standardization in international law tabulations extends to transnational arbitration and global practice).

selected for examination.[36] A 2023 report from the Sabin Center for Climate Change Law at Columbia University ("Sabin Center") and the UN Environment Programme found that as the number of climate-focused lawsuits has grown rapidly, the majority of proceedings have been brought in the United States, European countries including Britain, and Australia, "along with a growing number in Asia and the Global South."[37] Thus, this survey focused on the laws of states identified in the 2023 Sabin Center report, as those laws have already led to success for litigants.[38] Future surveys would benefit from a broader consideration of environmental damage lawsuits across the globe, as this area of law will undoubtedly continue to develop in the coming years.

Additionally, the survey included several international organizations' environmental degradation recovery schemes referenced in related scholarship, with care being taken to ensure diverse geographic coverage.[39] These international organizations' systems serve as notable and relevant examples of environmental degradation damages schemes. While international organizations may conduct proceedings differently due to the lack of binding enforcement measures, they are nonetheless worth consideration. Organizations have created mechanisms to provide redress for environmental damages incurred internationally, unlike the adjudicatory regimes of individual states.[40]

Countries in the Global West

The 2023 Sabin Center report on climate litigation referenced the environmental litigation schema of several countries in the global West.[41] First, United States law is relevant.[42] The Environmental Protection Agency

36 M.P. Ram Mohan & Els Reynaers Kini, *Compensation for Environmental Damage: Progressively Casting a Wider Net, But What's the Catch?,* 54 VAND. J. TRANSNAT'L L. 611, 647 (2021).

37 Renée Cho, *Climate Lawsuits Are On The Rise. This Is What They're Based On.*, COLUM. CLIMATE SCH. (Aug. 9, 2023), https://news.climate.columbia.edu/2023/08/09/climate-lawsuits-are-on-the-rise-this-is-what-theyre-based-on/ [https://perma.cc/25PX-B3RR] (*citing* Michael Burger & Maria Antonia Tigre, *Global Climate Litigation Report: 2023 Status Review*, SABIN CTR. CLIMATE CHANGE L. & U.N. ENV. PROGRAMME (July 2023), https://scholarship.law.columbia.edu/sabin_climate_change/202 [https://perma.cc/W3RV-KFQR]).

38 *Id.*

39 *See generally* Weiss, *supra* note 1; *See also* Chasek, *supra* note 4.

40 W.M. Reisman, *The Enforcement of International Judgments*, 63 AM. J. INT'L L. 1 (1969).

41 While terms such as "global West" and "global South" are continually evolving and may become less useful in the future, they are utilized to subdivide the legal systems analyzed here. The use of these terms is not intended as a judgment on these states' legal systems, but purely for ease of subdivision.

42 It should be noted that there may be other avenues of considering intangible damages in the U.S. that could prove fruitful. Medical damages, as well as pain and suffering sued for by private individuals and entities, are intangible damages that, like environmental harm, are difficult to quantify; yet they are fairly standardized in U.S. states. As a result, environmental damages calculations could seek to follow examples set by these calculations of comparable intangible damages. However, that is a subject for another paper. *See* Robert Rabin, *Intangible Damages in American Tort Law: A Roadmap* (Stan. Pub.

("EPA") utilizes Natural Resource Damage Assessments ("NRDAs") to evaluate claims stemming from exposure to hazards, stressors, and toxic chemicals.[43] NRDAs may include possible ecological risks in the area.[44] Along with noting exposure to environmental hazards, NRDAs identify "additional actions, beyond the response needed, to address injuries to natural resources."[45]

In addition to the EPA, U.S. law allows some environmental degradation claims to be brought as tort cases by a landowner for damage to their property.[46] These claims are limited, however, by the requirements Americans must satisfy to have standing to sue: the plaintiff must show an "injury-in-fact" that is "concrete and particularized" as well as "actual or imminent," and one that has a "fairly traceable" causal connection to the alleged perpetrator.[47] Such requirements are imposed for most lawsuits in American courts and thus will not be discussed at length here.[48] Once requirements for standing are met, individuals can bring suit for damage to their private property, including environmental harm or degradation, and receive monetary damages if successful.

Next, the United Kingdom permits both civil and criminal environmental liability.[49] Damages can be recovered somewhat flexibly: remedy, repair, or simple costs accrued can be demanded.[50] However, it is a complex system, as litigants must first determine whether to bring a criminal or civil action and then decide under which particular cause of action the environmental degradation in question falls.[51]

Baltic states have passed multi-pronged and detailed environmental laws.[52] For example, Latvia's 2006 Environmental Protection Law follows

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L. Working Paper, Rsch. Paper No. 2727885, 2016), https://ssrn.com/abstract=2727885 [https://perma.cc/5J42-VVEP].

43 *Natural Resource Damages: Assessments*, ENV'T. PROT. AGENCY, https://www.epa.gov/superfund/natural-resource-damages-assessments [https://perma.cc/3P3F-HTHQ].

44 *Id.*

45 *Id.*

46 *Id.*

47 Lujan v. Defs. of Wildlife, 504 U.S. 555, 560 (1992).

48 *See generally* Robin Kundis Craig, *Standing and Environmental Law: An Overview* (F.S.U. Coll. L. Pub. L. Rsch., Paper No. 425, 2009) ("Standing has long been one of the most common constitutional challenges in federal environmental cases.").

49 *Environmental Liability: In-Depth*, CRONER-I, https://app.croneri.co.uk/topics/environmental-liability/indepth [https://perma.cc/6W66-UQ4J].

50 *Id.*

51 *Id.*

52 *See Decision III/6d of the Meeting of the Parties to the Aarhus Convention Concerning Compliance by Lithuania with its Obligations Under the Convention*, THE MINISTRY OF ENV'T OF THE REPUBLIC OF LITH. (Dec. 7, 2010), https://www.unece.org/fileadmin/DAM/env/pp/compliance/MoP3decisions/Lithuania/InterimReports/Report7Dec2010.pdf [https://perma.cc/7AZ2-PP9W].

the "polluter pays" principle of the European Union.[53] The law allows guilty parties to be held either criminally or administratively liable and specifies ten specific "occupational activities" that can give rise to suit if they cause environmental degradation.

At the wider institutional level, the European Union has issued two pertinent directives regarding environmental degradation claims. Note, however, that EU directives are nonbinding legislative acts. While they enumerate a goal that member states must fulfill, "it is up to the individual countries to devise their own laws on how to reach these goals."[54]

Firstly, the EU's 2007 Environmental Liability Directive "established a comprehensive EU-wide liability regime for environmental damage based on the 'polluter-pays' principle," making "those whose activities threaten the environment liable for taking preventive action."[55] Annex I of the Directive provides an in-depth conversation of what statistically-measurable changes are sufficient for a harmed party to sue.[56] Secondly, the EU's 2023 Industrial Emissions Directive enables individuals to be compensated for damage to their health incurred as a result of industrial emissions across borders. As it is so new as of the time of this writing, less information is available detailing states' efforts to comply with the Directive's terms.[57]

Countries in the Global South

It is important to emphasize that environmental damages litigation is not limited to the global West. China, for instance, introduced punitive damages to its civil legal system in the early 1990s, drawing from the Anglo-American legal tradition and marking a notable shift from the prior policies of many civil law countries.[58] This development was further reinforced by the enactment of China's Civil Code in January 2021, which established

53 Vides Aizsardzības Likums [Environmental Protection Law], *Latvijas Vēstnesis*, Nov. 6, 2020 (Lat.), https://www.vvc.gov.lv/en/laws-and-regulations-republic-latvia-english/environmental-protection-law-amendments-11062020 [https://perma.cc/44MK-7BPU] (hereinafter Vides Aizsardzības Likums).

54 *Types of Legislation*, EUR. UNION, https://european-union.europa.eu/institutions-law-budget/law/types-legislation_en [https://perma.cc/DFL5-E63X].

55 *Environmental Liability*, EUR. COMM'N, https://environment.ec.europa.eu/law-and-governance/environmental-compliance-assurance/environmental-liability_en [https://perma.cc/9YET-THXC].

56 Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on Environmental Liability with Regard to the Prevention and Remedying of Environmental Damage, 2004 O.J. (L.143) 56, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02004L0035-20190626 [https://perma.cc/3RZC-E8XQ].

57 Selin Esen, *The First Compensation Right in EU Environmental Law,* CLIENTEARTH (Mar. 7, 2024), https://www.clientearth.org/latest/news/the-first-compensation-right-in-eu-environmental-law/ [https://perma.cc/7ZT8-SD8R].

58 Ran An, Ying Zhou & Rongzhao Zhang, *The Development, Shortcomings and Future Improvement of Punitive Damages for Environmental Torts in China—A Reflection and Comparative Research*, 11 HUMANITIES AND SOC. SCI. COMMC'NS 1(2024).

punitive damages specifically for environmental torts. These provisions provide compensatory measures for "severe environmental pollution and ecological damage incidents," thereby strengthening the "deterrent effect of environmental laws."[59] Environmental damage suits in China are generally pursued as tort cases, with one of the first resolved cases involving the Zhejiang People's Procuratorate against a company that illegally released freon, a banned ozone-depleting substance. The court "ordered the company to pay over 460,000 Yuan (around £50,000) to compensate for the ecological damage it caused, as well as 150,000 Yuan to cover investigation costs."[60]

Similarly, India's legal system permits "exemplary or punitive damages… [to be] imposed in cases of serious environmental harm to act as a deterrent against any similar harm in the future."[61] Exemplary damages are used "particularly in the event of large-scale irregularities and extraordinary situations," in the interest of justice and to quell media outrage.[62] In 2010, India created a program of "National Green Tribunals," which have the power to decide civil cases in which a "substantial question relating to the environment" is implicated.[63] Through this program, India now has a multi-pronged approach to facilitating its diverse body of environmental claims.

Argentina's General Environmental Law ("LGA"), notated as Public Law No. 25,675, requires the polluting party to pay for environmental damage. It permits a great degree of legal standing on which citizens can sue and defines environmental damage broadly. "Collective goods or values" are enumerated in Public Law No. 25,675; this umbrella term includes such items that, if damaged, can give rise to a cause of action under the law. As a result, both private and public harms are protected to some extent by Argentinian law.[64]

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59 *Id.*

60 Isabella Kaminski, *Yes, There is Climate Litigation in China,* THE WAVE (Aug. 3, 2022), https://www.the-wave.net/is-there-climate-litigation-in-china/ [https://perma.cc/QTR2-UT3Z]; *but cf* Shen Fan Yuehong & Shen Sijia, *Zhejiang Deqing: Handling the First Public Interest Litigation Case on Illegal Use of Ozone-Depleting Substances*, SUP. PEOPLE'S PROCURATORATE CHINA (Apr. 1, 2021), https://www.spp.gov.cn/dfjcdt/202104/t20210401_514557.shtml [https://perma.cc/6ZWZ-WARG]. Note that the second source in this footnote reports different financial figures than the first source (quoted above); however, both report on the several-hundred-thousand-Yuan verdict holding the insulation producer liable for environmental damage.

61 Mohan & Kini, *supra* note 36, at 647.

62 *Id.* at 650. *See also* the Supreme Court of India case of *M.C. Mehta And Anr. v. Union of India & Ors*, decided in 1986, which established a strict liability regime in cases of hazardous industry. The case centered around a fertilizer plant gas leak, which harmed the surrounding environment and people. (1986) 1 SCC 395 (India).

63 Mohan & Kini, *supra* note 36, at 652 (*citing* National Green Tribunal Act, art. 14, No. 19 of 2010, Acts of Parliament, 2010 (India)).

64 *Doing Business in Argentina: An In-Depth Analysis and Summary for Investors*, MARVAL, O'FARRELL MAIRAL (Jan. 2020),

Section 24 of South Africa's Constitution states that "[e]veryone has the right… to have the environment protected… through reasonable legislative and other measures."[65] This is effectuated through South Africa's *law of delict*, under which private parties can bring delictual actions "to seek redress or other relief for losses or harm caused by climate change impacts."[66] To receive compensation for the environmental degradation suffered, a plaintiff must bring an "Aquilian action (*action legis aquiliae*) for patrimonial loss." Those damages are then measured in monetary terms.[67] Researcher Oliver C. Ruppel notes that property and infrastructure damages are easier to calculate under such a system, although efforts are made by courts to consider "the present costs of preventing future harm."[68]

Lastly, Nigerian environmental damages law came about after 1988, when an Italian businessman legally and permissibly dumped "3880 tons of toxic and hazardous waste," primarily polychlorobiphenyls (PCBS), in the village of Koko, Nigeria.[69] Following this incident and the media flak it generated, the Nigerian government promulgated its Harmful Waste Decree and created the Federal Environmental Protection Agency ("FEPA"), which is now referred to as the National Environmental Standards and Regulations Enforcement Agency.[70] While reliability of enforcement may present an issue at times, private litigation in Nigeria allows remedy of "damages done to the physical environment of private individuals who seek redress in the law court."[71]

Efforts by International Conventions

In addition to state-level private litigation, international conventions and protocols can serve as case studies illustrating how environmental degradation is prosecuted across and between states. First, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal ("Basel Convention") establishes "a comprehensive regime for liability as well as adequate and prompt compensation for damage resulting from the transboundary movement of hazardous wastes and other wastes, including incidents occurring because

https://www.acc.com/sites/default/files/resources/upload/Doing%20Business%20in%20Argentina%202020%20baja%20%281%29.pdf. [https://perma.cc/LQ77-43WS]

65 S. AFR. CONST., § 24 (1996).

66 Oliver C. Ruppel, *South Africa: Climate Change, Responsibility and Liability – the Legal System, Public and Private Law Considerations*, 1 CLIMATE CHANGE, RESP. & LIAB. 201, 241 (2022).

67 *Id.*

68 *Id.*

69 Stephen Adi Odey, *Environmental Law Enforcement: In Nigeria A Reevaluation*, 11 JURNAL ILMU SOSIOLOGI DIALEKTIKA KONTEMPORER 91, 92 (2023).

70 *Id.*

71 *Id.*

of illegal traffic in those wastes."[72] Created by the UN, the Basel Convention was adopted in 1989 and has 53 signatories (and 191 parties to the convention) as of today. As an international convention under the umbrella of the UN Environment Programme, the Basel Convention is an example of existing international law governing environmental issues. It does, however, only govern hazardous wastes and their transboundary movement, thereby ignoring other *sic utere* environmental harms that may be incurred across states.

Next, the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety ("the Protocol") entered into force in 2018. As of this writing, 54 states have become party to the Protocol. Its goal is to provide "international rules and procedures in the field of liability and redress relating to living modified organisms."[73] To accomplish this goal, the Protocol defines key biological terms and requires a clear line of causation between harmed living organism and guilty party to be proven for liability to accrue. Notably, only "response measure" damages—defined as "reasonable actions to prevent, minimize, contain, mitigate or otherwise avoid damage, as appropriate, or reasonable actions to restore biological diversity," by the Protocol—may be recovered by victims of Protocol violations.[74]

Possible Future Accord: The International Law Commission Draft Principles

The last framework of note for this discussion is the Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities ("the Draft Principles"), adopted in 2006 by the International Law Commission. The ILC submitted the Principles to the United Nations General Assembly in its 2006 session report.[75] Intended to work within the existing goals of the Rio Declaration on Environment and Development but focused solely on preventing cross-border harms arising out of hazardous activities, the Draft Principles utilize many of the

72 *Basel Protocol on Liability and Compensation,* BASEL CONVENTION (Dec. 10, 1999), https://www.basel.int/TheConvention/Overview/LiabilityProtocol/tabid/2399/Default.aspx [https://perma.cc/G2PF-DC4K].

73 *The Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety*, CONVENTION ON BIOLOGICAL DIVERSITY, https://bch.cbd.int/protocol/supplementary [https://perma.cc/Y7G7-3G46].

74 About *the Nagoya - Kuala Lumpur Supplementary Protocol on Liability and Redress*, CONVENTION ON BIOLOGICAL DIVERSITY, https://bch.cbd.int/protocol/supplementary/about [https://perma.cc/7HX4-NA7D].

75 Yearbook of the Int'l L., Rep. of the Comm'n to the Gen. Assembly on the Work of The Fifty-Eighth Session, U.N. Doc. A/CN.4/SER.A/2006/Add.1 (2006), https://legal.un.org/ilc/publications/yearbooks/english/ilc_2006_v2_p2.pdf [https://perma.cc/Y7Y8-ZEFE].

a/cn.4/ser.a/2006

provisions that will be suggested later in this paper. The Draft Principles impose state responsibility for harm incurred by other states as a result of "incidents involving hazardous activities" within the borders of the guilty state. The responsible state is then obligated to reimburse reasonable clean-up costs or otherwise fund ecological recovery efforts.[76]

The Draft Principles provide an example of existing United Nations-level efforts to impose liability for cross-state environmental harms, albeit in the limited circumstance of hazardous activity. Their adoption indicates the international community's demonstrated interest in creating and enforcing a form of liability for environmental degradation suffered.[77] However, the Report on the Draft Principles does not present a well-defined framework for the determination of damages costs, merely stating that "it is not expected that expenditures disproportionate to the results desired would be incurred," and that damages charges "should be reasonable."[78] Therefore, the Draft Principles fall victim to the same pitfall noticed by many in the *Costa Rica v. Nicaragua* ICJ decision: a lack of definiteness in tabulating damages awards.

ANALYSIS OF KEY FRAMEWORK COMPONENTS IDENTIFIED BY THE SURVEY

Following the above case-by-case exploration of existing legal systems, this note now analyzes significant aspects of each, following components of a framework for tabulating environmental damages that are consistently employed by the legal systems examined. Discussion of these various legal systems will be subdivided into four areas of analysis: first, how entities define environmental degradation as a legally redressable offense; second, how standing is conferred and the right to sue articulated; third, how the crime is legally connected to its perpetrator; and fourth, how liability and compensation are calculated.

76 *Id.*

77 *Id.* Perhaps, however, the reticence of the United Nations community to adopt the International Law Commission's Report on the Prevention of Transboundary Harm from Hazardous Activities should damper one's belief in that strong, demonstrated interest. While the Report was initially brought to the U.N. General Assembly in 2006, it has still not been adopted. The Report has been considered every few years without subsequent action or a vote and will make a reappearance at the U.N. General Assembly's eighty-second session, in 2027. *See Consideration of Prevention of Transboundary Harm From Hazardous Activities and Allocation of Loss in the Case of Such Harm (Agenda Item 80)*, 77th Sess., 6th Comm. (Legal), https://www.un.org/en/ga/sixth/77/prevention_of_harm.shtml [https://perma.cc/N98Z-GJ59].

78 *Id.*

Definition of Environmental Degradation as a Legally-Redressable Offense

First, laws condemning the destruction of the environment must define the offense of environmental harm. The trend is for such definitions to be relatively broad and simplistic—ostensibly, to serve as a catch-all for environmental crimes that can be later refined in the law's subsequent text. For example, Argentinian law "defines environmental damage as any substantial alteration that modifies the environment, its resources, balance among ecosystems, and collective goods or values."[79] Such a definition can include numerous forms of environmental damage.

Compared to Argentinian law, the EU's Environmental Liability Directive provides a more precise definition of the offense: "[T]hose whose activities threaten the environment [are] liable for taking preventative action."[80] In 2021, the Environmental Liability Directive was updated with posted guidelines further defining 'environmental damage' to mean any "measurable adverse change in a natural resource or measurable impairment of a natural resource service which may occur directly or indirectly."[81] The accompanying commentary in the Directive's 2021 update stipulates that four discrete criteria should be analyzed when determining whether a harm qualifies as legal damage: its material scope, its adverse effects, the scope of those adverse effects, and the ways in which the adverse effects occur. The European Liability Directive, therefore, provides a clear and detailed definition of environmental degradation; it is particularly relevant to this note because the Directive pertains to environmental harm situated in the international legal realm.

However, some evidence of environmental damage may not fall within the Environmental Liability Directive's more specific definition of harm. The European Union's Industrial Emissions Directive, signed in 2023, enables adverse health effects to qualify as evidence of emissions-driven harm. This Directive enables the environmental harm of pollution to be visualized differently. While the publication for the Directive notes that a "difficulty may be how to assess situations of cumulative pollution from several sources," it may be worthwhile to consider broad visualizations of environmental damage that include those harms caused to humans.

79 *Doing Business in Argentina: An In-Depth Analysis and Summary for Investors*, *supra* note 64.

80 *Environmental Liability, supra* note 55; *see also* Eur. Comm'n, Guidelines Providing A Common Understanding of The Term Environment Damage as Defined in Article 2 of Directive 2004/35/EC, 2021 O.J. (C. 118) 1; Directive 2004/35/EC, *supra* note 56.

81 *Id.*

Conferring Standing and Articulating the Right to Sue

Next, the right to sue for environmental damage must be present. While private-citizen standing is distinct from states' standing at the ICJ level, both states' conferrals of standing to individuals and international organizations' provisions of standing to states at the global scale are nonetheless considered in this section.

American tort law limits individuals' right to sue via standing requirements, as articulated in *Lujan v. Defenders of Wildlife*.[82] The plaintiff must show an "injury-in-fact," that is "concrete and particularized," as well as "actual or imminent," with a "fairly traceable," causal connection to the alleged perpetrator. Therefore, individuals may not sue on behalf of others' suffering; furthermore, one must be able to draw a line between the injury and the defendant who caused it.

Argentinian law is similar, albeit somewhat broader than American law: There is a great degree of legal standing on which citizens can sue. Once standing is achieved, liability for environmental damages is "strict, unlimited, and joint and several." Perpetrators of environmental harms, in such a scheme, have fewer avenues to escape liability than they may in the United States. Conversely, Latvia limits the right to sue for environmental harms only to ten specific "occupational activities" that, provided they lead to environmental degradation, give a cause of action to sue under the 2006 Environmental Protection Law.[83] The "occupational activities" limit the right of individuals to sue for environmental harm to primarily economic activities and things done in the course of one's occupational duties.

The Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety views the right of redress somewhat differently. Any violation of the Protocol impacting biosafety automatically confers a right of action. The parties may inform others, "evaluate the damage," and "take appropriate response measures."[84] These measures, however, are distinct from legal recourse as they do not direct parties to the ICJ or any other international adjudicatory body. Instead, the authority "has the right to recover from the operator" costs and expenses incurred from the damage.[85] If any legal action is necessary, the Supplementary Protocol notes that parties may also find recourse in domestic law, and that international "response measures shall be implemented in accordance with domestic law."[86]

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82 *Lujan*, 504 U.S. at 560.

83 Vides Aizsardzības Likums, *supra* note 53.

84 *Article 5. Response Measures*, CONVENTION BIOLOGICAL DIVERSITY, https://bch.cbd.int/protocol/nkl/article5 [https://perma.cc/9H53-9JX9].

85 *Id.*

86 *Id.*

Lastly, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal contains the cause of action provisions that are most relevant to the present discussion. As an international convention, the 53 states parties are bound to peacefully negotiate the settlement of any disputes regarding the Convention's interpretation, application, or compliance. Under Article 20, if such negotiation is unsuccessful—and the parties involved agree—the dispute "shall be submitted to the International Court of Justice or to arbitration," as set out in an Annex to the Convention.[87] States are therefore not required to satisfy certain enumerated conditions prior to commencing negotiation and possible ICJ action. This most closely mirrors any potential future ICJ proceedings to adjudicate environmental degradation claims: If both parties agree that the ICJ, as a court of last resort, is the necessary party to adjudicate their dispute, then they may request an ICJ ruling.

Legally Connecting Crime to Perpetrator

Once the aggrieved party has obtained the right to bring their environmental degradation claim, the laws and treaties discussed universally require them to connect the environmental 'crime' to its perpetrator. Such a connection is conceptualized through various theories. First, the EU Industrial Emissions Directive requires a "causal link between the damage and the violation."[88] While it may be difficult to prove this link, especially in "situations of cumulative pollution from several sources," the Directive considers clear fault attribution to be of utmost importance.[89] Additionally, establishing a causal link for environmental degradation may be simpler in cases between two states: If pollution unmistakably flowed from one state to another, then a causal link is proven.

Similarly, the Nagoya-Kuala Lumpur Supplementary Protocol requires the plaintiff to draw a clear line between the living organism harmed and the party that caused the harm. However, the Protocol provides no precise standards for defining causation.. Instead, the link is determined "in accordance with domestic law" of the place where the harm occurred.[90] In the ICJ's *Costa Rica v. Guatemala* proceedings, causal link and connection were not disputed; however, if causation is disputed in future proceedings, the ICJ may need to consider how it chooses to define causation. Standardizing a more or less stringent definition of *causation* may affect the outcome of future proceedings.

87 *Basel Protocol on Liability and Compensation*, *supra* note 72.

88 Esen, *supra* note 57.

89 *Id.*

90 *Article 4. Causation,* CONVENTION ON BIOLOGICAL DIVERSITY (2010), https://bch.cbd.int/protocol/nkl/article4 [https://perma.cc/A9AA-9PKA].

Additionally, once causation is established, liability for the environmental crime is often placed upon the perpetrator via the 'polluter pays' principle. This principle states that "the person who damages the environment must bear the cost of such damage."[91] While the polluter-pays principle typically requires private entities to compensate for destruction they have caused, there is evidence of some states extending the principle of their own volition to "create an obligation on the state to compensate the victims of environmental harm."[92] Such evidence of prior practice indicates that ICJ judgements could decree state liability under a polluter-pays paradigm (as happened in the *Costa Rica v. Guatemala* proceedings).

The polluter-pays principle is espoused on the individual level by states such as Latvia. Latvia's 2006 Environmental Protection Law defines the concept by stating that "a person covers all costs, which are related to the assessment, prevention, and limitation of pollution or liquidation of the consequences thereof caused by his or her activities."[93] The guilty polluter may then be held criminally or administratively liable, in addition to paying costs.

At the international institutional level, the European Union's Environmental Liability Directive conclusively asserts that its liability regime is "based on the 'polluter-pays' principle."[94] Like at the state level, though, the Directive does not impose any payment requirement on states themselves: The burden of paying for pollution is put on the private operators responsible for it.

Calculating Liability and Compensation Owed

Once the offense of environmental destruction is defined, the right to sue is conferred, and the offense has been causally linked to the guilty party, the damages owed must somehow be calculated. Critics of the ICJ's *Costa Rica v. Nicaragua* opinion have emphasized that the Court, neglecting to wholly espouse either party's suggested framework for calculation,[95] provided only a hazy analysis of how the compensation owed to Costa Rica by Nicaragua was calculated. Although the ICJ declined to do so, both states and international conventions have laid out methods of determining compensation that merit consideration.

First, the EU's Environmental Liability Directive provides a detailed list of statistical metrics that may be used in this computation. Costs recoverable for environmental harm include those undertaken for preventative or

91 Barbara Luppi, Francesco Parisi & Shruti Rajagopalan, *The Rise and Fall of the Polluter-Pays Principle in Developing Countries*, 31 INT'L REV. L. & ECON. 135 (2012).

92 *Id*.

93 Vides Aizsardzības Likums, *supra* note 53.

94 *Environmental Liability, supra* note 55.

95 Costa Rica v. Nicaragua, *supra* note 12. *See also* Rudall, *supra* note 28.

remedial actions taken pursuant to the Directive's requirements. The validity of such costs is determined by gauging whether "significant adverse changes to the baseline condition" of the environment took place, which is assessed by reference to "measurable data."[96] As stated in Annex I of the Directive, numerical data that may be utilized in damages calculations include:

> [T]he number of individuals, their density or the area covered … the role of the particular individuals or of the damaged area in relation to the species or to the habitat conservation, the rarity of the species or habitat (assessed at local, regional and higher level including at Community level) … the species' capacity for propagation (according to the dynamics specific to that species or to that population), its viability or the habitat's capacity for natural regeneration (according to the dynamics specific to its characteristic species or to their populations) … the species' or habitat's capacity, after damage has occurred, to recover within a short time, without any intervention other than increased protection measures, to a condition which leads, solely by virtue of the dynamics of the species or habitat, to a condition deemed equivalent or superior to the baseline condition.[97]

By precisely stating how the monetary value of environmental degradation is calculated and allowing efforts to cure or prevent such environmental damage to be recoverable under the Directive, questions of calculating compensation become answerable. The emphasis of Annex I on *measurable data* lends credence to adjudicatory decisions awarding costs to degradation victims.

In contrast, the United States' Environmental Protection Agency opts to consider environmental degradation claims on a case-by-case basis, rather than using data-based determinations of harm. To do so, the EPA utilizes Natural Resource Damage Assessments ("NRDAs"), which both consider the ecological situation of the area in question and identify "additional actions, beyond the response needed, to address injuries to natural resources."[98] Note, however, that NRDAs are not conducted for legal proceedings; they are merely an EPA mechanism assessing environmental cleanup costs before the EPA incurs those costs itself.[99]

A different mechanism of limiting possible redress is seen in the Nagoya-Kuala Lumpur Supplementary Protocol, which only permits victims to recover 'response measure' damages—a term defined as

96 Directive 2004/35/EC, *supra* note 56.
97 *Id.*
98 *Natural Resource Damages*: *Assessments*, *supra* note 43.
99 *Id.*

"reasonable actions to prevent, minimize, contain, mitigate or otherwise avoid damage, as appropriate, or reasonable actions to restore biological diversity."[100] The Protocol gives states the purview to develop other civil liability provisions to permit the collection of environmental damages, but does not require them to do so. Furthermore, as seen in the above quote, 'response measure' damages are limited by a *reasonableness* requirement.

Lastly, in states such as the United Kingdom, damages for environmental harms are viewed flexibly: The perpetrator can be required to remedy or repair what was damaged, or pay for costs the victim incurred in repairing the harm themselves.[101] Much like in the United States, in cases involving individuals, either criminal or civil liability can be imposed. Therefore, calculation of damages is not standardized—and necessarily so.

SELECTED STRENGTHS AND SUGGESTED FRAMEWORK COMPONENTS

Each system of environmental damage governance discussed above has its own strengths and weaknesses. Therefore, to identify a path toward attaining greater clarity of environmental damages tabulations within the ICJ, it is worthwhile to synthesize the strengths of some of the above frameworks into one comprehensive scheme, which the Court could reference in future environmental damages proceedings.

To **define a legally redressable offense** in the context of environmental harm, one may utilize a combination of Argentina's broad, catch-all definition of environmental damages and the more specific phrasing established by the European Union. Argentina's approach encompasses a broad umbrella of harms caused to the environment, including pollution, biodiversity loss, and the degradation of ecosystems. It does not specify every possible environmental offense that may qualify. It defines environmental damages as "any substantial alteration that modifies the environment, its resources, balance among ecosystems, and collective goods or values."[102]

Argentina's regime can be expanded by incorporating key details from the European Union Environmental Liability Directive, which emphasizes that the offense of environmental degradation must be a *measurable* adverse change or impairment that can be directly or indirectly caused by the alleged perpetrator.[103] Such qualifications give the definition of this legally redressable offense vital guardrails, limiting what harms can qualify.

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100 *The Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, supra* note 73.

101 *Environmental Liability: In-Depth*, *supra* note 49.

102 *Doing Business in Argentina: An In-Depth Analysis and Summary for Investors*, *supra* note 64.

103 Esen, *supra* note 57.

Furthermore, aspects of the EU Industrial Emissions Directive can be integrated to address health harms resulting from industrial activities. Specifically, direct or indirect damage to human health due to environmental pollution should merit an award of damages. Such an expanded definition would affirmatively cover a broad range of environmental offenses, including both ecological and health-related harms, thus ensuring a comprehensive basis for legal redress.

Next, in terms of conferring standing and **articulating the right to sue**, little definition is required, given that the ICJ has established its own methods for conferring standing, and jurisdiction is inherently limited, as only states may be parties to an ICJ suit.[104] It may be advisable not to restrict standing solely to 'occupational activities,' which might unnecessarily narrow the scope of potential claims.[105] Because the scope of the Court is already limited through the Court's own mechanisms, it may be unwise for the ICJ to reduce its standing provisions with respect to environmental degradation claims in particular.

Next, with respect to **legally connecting the crime to the perpetrator**, it is essential to require a clear 'causal link' between the environmental harm suffered and the accused state. The importance of a causal link—concretely tying an environmental crime to the alleged perpetrator—was emphasized in the Nagoya-Kuala Lumpur Supplementary Protocol: It ensures that liability is not mistakenly attributed, thereby helping to build trust in the Court's damages awards.[106]

Moreover, the ICJ should consider endorsing the form of automatic liability articulated by many states in the 'polluter pays' principle.[107] This principle ensures that accountability for environmental damage is directly tied to the actions of the party responsible. Again, this may promote a more palatable environmental damages schema, reassuring states that they will not incur liability for actions that are merely tangentially tied to them. Because many countries have adopted the polluter-pays principle, it would—one hopes—not be a highly inflammatory principle for the ICJ to follow.[108]

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104 *How the Court Works*, INT'L CT. JUST., https://www.icj-cij.org/how-the-court-works [https://perma.cc/TEZ2-6ZCL].

105 As discussed previously, some Baltic States such as Latvia, Lithuania utilize this mechanism to limit the quantity of environmental damages lawsuits. *See* Vides Aizsardzības Likums, *supra* note 53.

106 *The Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, supra* note 73.

107 The ICJ did espouse the polluter-pays principle to some extent in *Costa Rica v. Nicaragua*. *See* Costa Rica v. Nicaragua, *supra* note 12. However, if the principle was articulated as a guaranteed practice to be reliably carried out by the Court, it could save litigating parties time in arguing whether the principle should be followed for their respective cases.

108 *See* Luppi, Parisi & Rajagopalan, *supra* note 91, at 135. Countries including "India, Malaysia, Taiwan, Ecuador, Chile, Costa Rica, Kenya, and South Africa, among others," have espoused adoption of the polluter-pays principle. *Id*. Note, however, that this cited publication focused to a greater degree

Finally, when **calculating liability and compensation owed**, it is essential to conduct a thorough, data-driven assessment of the environmental damage. The compensation requested should be rigorously evaluated using some form of statistical analysis comparing the environmental condition before and after the event in question.[109] This approach ensures that the compensation reflects the true extent of the harm caused. The important statistics enumerated in Annex I of the EU Environmental Liability Directive should guide this analysis, as they provide a detailed framework for quantifying environmental damage.[110] Such statistics include "the number of individuals, their density or the area covered … the role of the particular individuals or of the damaged area in relation to the species or to the habitat conservation, the rarity of the species or habitat," and other measurable criteria.[111]

Once the requested compensation meets the strict test of necessity outlined in Annex I, the compensation should also satisfy a basic reasonableness standard. This ensures that compensation is not excessive or disproportionate to the harm caused, while still adequately addressing the harm to the environment.[112] If both the necessity and reasonableness tests are satisfied, compensation owed should be granted in full, ensuring both fairness and accountability in the process.

Lastly, inclusion of 'response measure' damages, as utilized by the Nagoya-Kuala Lumpur Supplementary Protocol, may be beneficial. Defined as reasonable actions to prevent, minimize, or restore biological diversity, such a "response measures" provision may result in greater predictability of environmental degradation damages.[113] Aggrieved countries could recoup costs invested in revitalizing harmed ecosystems. Simultaneously, guilty states would be on notice of their responsibility for those costs.

CONCLUSION

Crafting a concrete, replicable system for the allocation of environmental damages by the International Court of Justice would promote clarity and trustworthiness in the Court, ensuring that compensation in future environmental degradation proceedings is calculated in a consistent

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on developing countries' uses of the polluter-pays principle in opposition to a 'government-pays' principle. The authors focus primarily on polluters as private actors, unlike the focus of this paper.

109 In fact, the lack of in-depth statistical analysis such as that discussed here was the concern of many following the *Costa Rica v. Nicaragua* case. *See* Rudall, *supra* note 28.

110 Directive 2004/35/EC, *supra* note 56.

111 *Id.*

112 *Id.* Terms such as 'imminent threat of damage' and 'costs' are defined narrowly and with specificity to avoid too great or too little liability being incurred.

113 *The Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, supra* note 73.

and fair manner. While provisions related to environmental damages already exist throughout various legal systems and have been written into some international conventions, such systems are not always comprehensive or easily applied across the many diverse jurisdictions the ICJ serves.

Subdividing methodologies for calculating environmental degradation damages into their most relevant parts enables one to pick and choose the strengths of each method, thereby allowing the best portions of different states' systems to be extrapolated to the scale of international courts. Such a method would ultimately create a more unified and effective approach to addressing environmental harm on a global level. If successful, standardized mechanisms for calculating ecological damages would enhance certainty, improve the consistency of ICJ decisions, and ultimately contribute to reliable environmental protection between states under international law.[114]

Ongoing Feasibility Concerns

Creating a standardized environmental degradation damages calculation scheme will undoubtedly face significant challenges. The primary obstacle is the inherent difficulty in quantifying the non-fiscal destruction of ecological resources, both present and future.[115] One of the core challenges lies in the complexity of valuing ecological systems that may not have clear market prices or consistent financial metrics. The loss of biodiversity, depletion of natural habitats, and degradation of soil quality—among many similar examples—are difficult to measure in purely monetary terms, particularly when considering the ricocheting impacts of these harms on ecosystems and human populations.[116]

Moreover, difficulty lies in accounting for *future* damages. Predicting the long-term consequences of environmental harm is a practice fraught with uncertainty due to the complexity of ecosystem sciences, which extend beyond the replacement value of any single plant or animal. The dynamic nature of ecological restoration and regeneration adds another layer of difficulty: Some damages may be irreversible, while others may be mitigated over time with careful restoration. The Court in *Costa Rica v. Nicaragua* considered this conundrum but ultimately concluded that they could not accurately predict just how much assistance would be needed to replace an area's lost future potential.[117]

Due to these complex hurdles, creating a system for consistently tabulating environmental degradation damages may be impossible, given

114 *ICJ Determines First Ever Compensation Claim for Environmental Harm, supra* note 29.
115 Mohan & Kini, *supra* note 36.
116 *Id.*
117 Costa Rica v. Nicaragua, *supra* note 12.

the sheer number of variables involved and the unique nature of each environmental incident. Every case of environmental harm is shaped by a multitude of factors, including precisely what damage was incurred, frailty of the ecosystem, geographical location, and affected species.[118] The unpredictable, long-term consequences of environmental harm are simply the most complex factor of an already complicated multifactor analysis, making the ICJ's reluctance to craft a standardized analysis somewhat understandable.

Given these complexities, a rigid, one-size-fits-all system risks oversimplifying the issue and failing to capture the full scope of environmental degradation in a meaningful way. The ICJ's handling of compensation in *Costa Rica v. Nicaragua*, and its refrain from providing a clear method for calculating damages may have been frustrating, but in hindsight, it could have been an attempt at pragmatism by the Court. By not enforcing a single, uniform methodology, the Court may have intended to allow future proceedings to enjoy greater flexibility in addressing their own unique intricacies. There may not be a one-size-fits-all solution to the challenges of environmental damage assessment.

Should the ICJ attempt to utilize a consistent method to tabulate environmental degradation damages in future adversarial cases, the Court may benefit by learning from the existing methods for calculating damages already espoused by states and intergovernmental organizations. Domestic legal systems have spent years refining their own methods of tabulating ecologically redressable damages; the ICJ should learn from the efforts of states across the globe. Analyzing the successes and failures of current schemes could allow the Court to balance concerns for aboveground and consistent decision-making with the flexibility a court as unique as the International Court of Justice requires.

118 Jay D. Wexler, *The (Non) Uniqueness of Environmental Law*, 74 GEO. WASH. L. REV. 260 (2005). This may also contribute to why international *environmental* law is considered to be a distinct branch of international law: so many noneconomic resources are implicated that international environmental law is viewed as distinct from, for instance, international finance.