

Civil liability suits for environmental harm--focused on threatened species A guide for making claims in Indonesia

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INTRODUCTION

Reason for the guide

Actions such as illegal wildlife trade, deforestation, mining and pollution are often responsible for huge harm to the environment, including impacts on threatened and endangered species, local economies, culture and state budgets. There are growing demands for the legal system to provide social and environmental justice, particularly against the responsible parties who benefit most from environmental crimes. There is also a need for legal responses to match the scale of this harm, in order to protect the environment and people, and also to deter future harmful actions by ensuring that sanctions are high.

Legal responses include not only criminal and administrative cases, but also civil lawsuits that can provide a wide range of remedies to environmental harm. Civil lawsuits for environmental harm are based on the premise that, when a party harms the environment, they can also be held liable for taking action to remedy the harm they caused. This is often referred to as actions to “make the public whole”, and can involve actions such as restoration, species reintroduction, financial compensation and apologies.

There are still barriers to developing these types of lawsuits, but there are a number of precedent-setting examples, including that involve harm to biodiversity (see below). While many legal systems provide a right to remedies for harm to the environment, there is often limited guidance on how to make these types of claims. In other cases, approaches to making claims may be deemed too complicated or resource intensive to be widely practicable. This guide helps NGOs, government officials, prosecutors, judges and academics to understand how civil can be used to provide remedies when the environment is harmed, along with practical, accessible strategies for developing legal claims. It provides the conceptual, legal and technical clarity helpful to practitioners and scholars.

The guide is focused on Indonesia, but also illustrates the potential for similar legal action in other countries. Indonesia is a perfect context in which to explore these opportunities and challenges. It is already a global leader in using civil law to remedy environmental harm under its Environmental Protection Law Law 32/2009. It also has landmark cases, including against PT. Kalista Alam, which held a palm oil company financially responsible for restoration of a site on which it had conducted illegal burning of peatland forest). These legal actions recognise international and domestic commitments to biodiversity, a clean environment, and to restoration when the environment is harmed.

Around the world: Civil liability lawsuits for harm to biodiversity

Environmental lawsuits that include specific actions to protect biodiversity, including threatened species, are not yet common. There are, however, a growing number of promising examples globally.

France: Calanque National Park¹

In 2019, a French court found a series of defendants liable for the environmental harm caused by illegal harvesting and selling fishing, including of protected species and with some of the harvest inside of Calanque National Park. The case was France's first to demand compensation due to environmental damage caused by illegal poaching. The Court order included €450,000 in compensation for ecological harm, based on an estimate of the costs of managing and monitoring coastal protected areas per meter square. It also ordered €50,000 in compensation for the harm of impacting the park's environmental protection mission and €50,000 in compensation to remedy harm to the Park's brand image and reputation, which was exacerbated by media coverage of the case. The Court also ordered remedies from 5 restaurants that had illegally purchased wildlife, ordering €3,000 from each to compensate harm to the protected area, arising from the impairment of its environmental protection mission and harm to its brand image and reputation.

Indonesia: PT Kalista Alam

In 2012, The Indonesian Ministry of Environment filed a lawsuit against PT. Kalista Alam, an palm oil agricultural company, for compensation for the environmental harm caused by a fire within the company's plantation concession area. The court decided that PT. Kalista Alam was liable, and ordered the defendant to pay compensation of Rp. 114,303,419,000 (US\$12,202,300) for ecological harm and to conduct restoration actions estimated to cost Rp. 251,765,250,000 (US\$26,876,845). One of the component in the damage claim is harm to biodiversity and loss of genetic resources. However, the total amount of money requested in this case is not based on an actual restoration plan, but based on the default values and formula stated in a Ministry of Environment and Forests regulation. Up until now, this court decision has not been executed and no restoration action has been conducted yet.²

¹ Chrisafis, A. 2018. Pirates of the Med: the Mafia-style poachers threatening endangered fish. The Guardian Online. URL: <https://www.theguardian.com/world/2018/oct/13/pirates-of-mediterranean-divers-plunder-endangered-fish-marseille-calanques-national-park>

² Court decision No. 12/PDT.G/2012/PN.MBO jo Appeal Court decision No. 50/PDT/2014/PT.BNA jo Supreme Court decision No. 651 K/Pdt/2015 (cassation) jo Supreme Court decision No. 1 PK/Pdt/2017 (review)

USA: Blackbird Mine Case³

In 1983, the State of Idaho filed suit against several mining companies for compensation for environmental harm caused by mining activities at the Blackbird Mine in Lemhi County, Idaho. The Blackbird Mine had contaminated ground and surface waters and damaged wildlife along Panther Creek. The plaintiffs chose three primary indicators of the ecosystem health to focus on in characterising harm in the case: criteria of surface water pollution standards; injury to streambed food web species, and harm to fish populations. Three species of trout were nearly absent from the area, but were found at 35-50 times higher densities at nearby sites. Chinook salmon, listed as a threatened species under the Endangered Species Act in 1992, were entirely absent from the affected areas. The court ordered not only remedies valued at US\$4,700,000, including to restore water quality to a level that would support fish populations, and implement an active restoration plan to recover fish populations (e.g., fish hatchery, fish traps, building acclimation ponds, supervision costs). They selected the number of adult, spawning chinook salmon as the indicator for evaluating the remedy, targeting 200 individuals, based on the estimated capacity of Panther Creek

International Court of Justice: Costa Rica vs. Nicaragua⁴

In 2015, the International Court of Justice ruled in favour of Costa Rica in a civil case against the government of Nicaragua for transboundary environmental harm caused to the San Juan River, which forms the national border because the two countries. The Court ruled that Nicaragua must compensate Costa Rica for material damage, including environmental harm, caused by unlawful removal of trees for the excavation of canals in Costa Rica's territory, which includes a site of Ramsar Convention on Wetlands of International Importance. The compensation of USD\$378,890 considered both the impairment or loss of environmental goods and services in the period prior to recovery, and payment for undertaking actions to restore the damaged environment. There is, however, still a lack of clarity on how exactly the court reached the compensation amount.

³State of Idaho v. MA Hanna Co., 819 F. Supp. 1464 (D. Idaho 1993); URL: <https://law.justia.com/cases/federal/district-courts/FSupp/819/1464/1965564/>

Blackbird Mine Natural Resource Trustee Council. National Oceanic & Atmospheric Administration Office of Response and Restoration. URL: <https://www.diver.orr.noaa.gov/web/guest/diver-admin-record?diverWorkspaceSiteId=7105>.

Chapman D., Iadanza, N., Pennurl, T. 1998. Calculating resources compensation: An application of the service-to-service approach to the Blackbird Mine hazardous waste site. URL:

<https://casedocuments.darrp.noaa.gov/northwest/black/pdf/blackfnl.pdf>

Chapman D., Iadanza, N., Pennurl, T. 1998. Calculating resources compensation: An application of the service-to-service approach to the Blackbird Mine hazardous waste site. URL:

<https://casedocuments.darrp.noaa.gov/northwest/black/pdf/blackfnl.pdf>

⁴ Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua) and Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica), Judgment, I.C.J. Reports 2015, p. 665. URL: <https://www.icj-cij.org/files/case-related/150/150-20151216-JUD-01-00-EN.pdf>

The approach

The guide highlights the many different types of environmental impacts that result from actions such as illegal wildlife trade and deforestation. The guide explains how to determine which types of harm are legally-recognised as harm that can be remedied via civil lawsuits. For each type of harm, it focuses on the impacts to threatened species because civil lawsuits have not traditionally been used in these types of cases, which are instead dealt with via criminal law procedures. However, there is growing public concern about rapid biodiversity loss, and we need to draw on the full set of legal tools to address this type of harm.

The guide proposes a range of remedies that are appropriate for each type of harm that would serve to make society and the environment “whole”, and explains how those remedies could be claimed through civil lawsuits. These include remedies that could respond to many different types of environmental harm. It also highlights specific remedies for harm to threatened species, such as actions associated with rehabilitation and reintroduction programmes and conservation efforts to increase wild populations.

These remedies are the actions needed to address environmental harm, such as habitat restoration and animal rehabilitation. It then puts a price on the costs of undertaking those remedial actions. As such, if the case involves harm to 1 individual animal, then it proposes that the remedies involve various actions needed in order to recover that 1 individual animal. This action remedies harm caused to the individual and to the species, and also many of the broader harms to ecosystem goods and services that are reliant on biodiversity. In addition, the State or individuals can claim further remedies based on their own interests in the environment (e.g., lost tax revenues, loss of passive use). These require additional action, such as financial compensation, actions, and non-financial remedies such as public apologies.

The guide does *not* seek to create a fixed “price list” per species, or to set default values, or to conduct full accounting of each good and service (see Box on Different approaches to remedies). This is because it focuses on the actions needed to provide remedy, rather than setting monetary fines. This approach is more flexible and accurate, and has greater potential to serve the environment's needs in each case.

When to use this guide

Harm to biodiversity happens everyday, but not all forms of harm are likely to receive legal remedies via civil liability lawsuits. This guide explains the contexts in which such suits are legally possible and strategic, in the context of Indonesia. Importantly, the cases described in this guide are resource-intensive and should be used strategically. As such, these guides are developed for use in situations such as:

- Cases involving species that we consider particularly important, such as those on protected species list, on IUCN Red List threatened categories, and/or that are economically important;
- Cases involving large-scale environmental harm, such as those involving a large number of species, a large number of individuals, and/or threatened and endangered species;
- Cases involving high-level responsible parties, such as corporate entities, organised crime syndicates, and government collusion;

- Cases where responsible parties significantly benefited financially from the illegal actions, and
- Cases where habitat restoration (e.g., pollution clean-up, tree planting) is important but not enough to fully benefit biodiversity. Many species require additional actions in order to provide remedies, such as rehabilitation and additional habitat conservation.

Be strategic about who you sue.

On paper, all people are equal before the law. However, when plaintiffs chose to take legal action—particularly in civil court—they are making a strategic decision to claim for remedies from the specific party who caused it. As part of this strategy, they should consider the social impacts of this action, and also the defendant's ability to pay.

The civil lawsuits described in this guide are most appropriate for cases that involve large-scale actors who benefit most from the crimes and are financially able to pay for the remedies. In contrast, they are less appropriate for use against people who harm biodiversity as part of their subsistence strategies, and/or opportunistically participate in small-scale harmful activities. This is because these tools do not match the scale of harm, and defendants are also unlikely to be able to pay the high costs associated with these legal suits. Such small-scale actors may still be implicated in civil lawsuits, but should generally not be the primary focus of such court actions (see Section 5). Determining which cases are egregious and large enough to be the subject of a lawsuit is a subjective decision that must carefully consider overall strategy, including social and environmental aims.

Structure of this guide

The guide is structured into six broad sections (Fig. 1) that address:

- (1) the legal basis on which environmental harm can seek remedies via environmental lawsuits;
- (2) the diverse types of social, economic and environmental harm that may be involved in a case;
- (3) the types of legal remedies that correspond with each type of harm;
- (4) how these remedies can be reflected in damage claims presented to the court;
- (5) legal procedural considerations that determine the plaintiffs who can bring forward claims different types of remedies and against different defendants, and
- (6) consideration in the execution of court decisions to ensure that they deliver remedies on-the-ground.

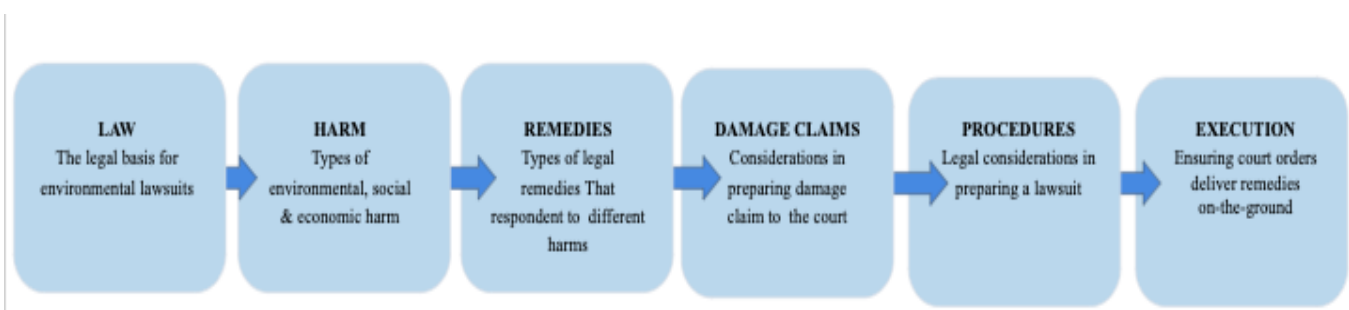


Figure 1. Overview of the guide sections

Illustrative Example - Illegal trade of Bornean Orangutan

Throughout this guide, we draw on an illustrative example of the illegal wildlife trade, in which a live, female, juvenile (<10 years old) Borneo Orangutan (*Pongo pygmaeus*) is illegally taken from the wild in West Kalimantan Province for the pet trade. This is a protected species under Indonesian law and is designated by the IUCN Red List as “Critically Endangered”, which means that it is at extreme risk of extinction in the wild. There are only approximately 4,500 Bornean Orangutan left in the wild. DNA tests further confirm that this is from the Northwest Bornean Orangutan subspecies (*Pongo pygmaeus* spp. *pygmaeus*) found in northern West Kalimantan. The Northwest Bornean Orangutan subspecies is the most endangered of the 3 Bornean Orangutan subspecies, with as few as 1,500 individuals remaining⁵. A huge amount of government and civil society resources are being invested into protecting it. As a charismatic animal, the orangutan is also important to driving ecotourism, and to Indonesia’s global image as a high-biodiversity country.

In this scenario, the illegal trader has long been known for his involvement in commercial trade of threatened species, buying and selling high-value species across Indonesia. He was arrested for possessing and attempting to sell the animal. He had purchased the animal from a local person in a rural part of West Kalimantan, but that person was not caught. The animal was confiscated from the trader, placed in a rehabilitation centre for short-term care and eventually into a reintroduction programme that will eventually allow it to be released into a semi-wild controlled population. The animal cannot, however, be returned to its original wild population.

Throughout the guide we explore how the trader can be sued for the harm caused to biodiversity as a result of illegal trading activities.

⁵WWF. Bornean Orangutan Facts. URL: <https://www.worldwildlife.org/species/bornean-orangutan>

1. LAW: THE LEGAL BASIS FOR ENVIRONMENTAL LAWSUITS

Human actions can cause a wide range of harms on the environment. This includes impacts on an entire ecosystem and all of its constituent parts, such as a result of a large forest fire. It can include gradual impacts on an ecosystem, such as a result of pollution or degradation. It can also include harm to specific elements of an ecosystem, such as individual plants and animals. All of these types of impacts have complex relationships on one another and on human wellbeing.

However, not all negative impacts on the environment have the same legal right to remedies via civil lawsuits. And not all will follow the same type of legal basis for a lawsuit. There are 2 broad types of liability upon which a civil lawsuit can be conducted: strict liability, where liability holds even without fault, and fault-based liability.

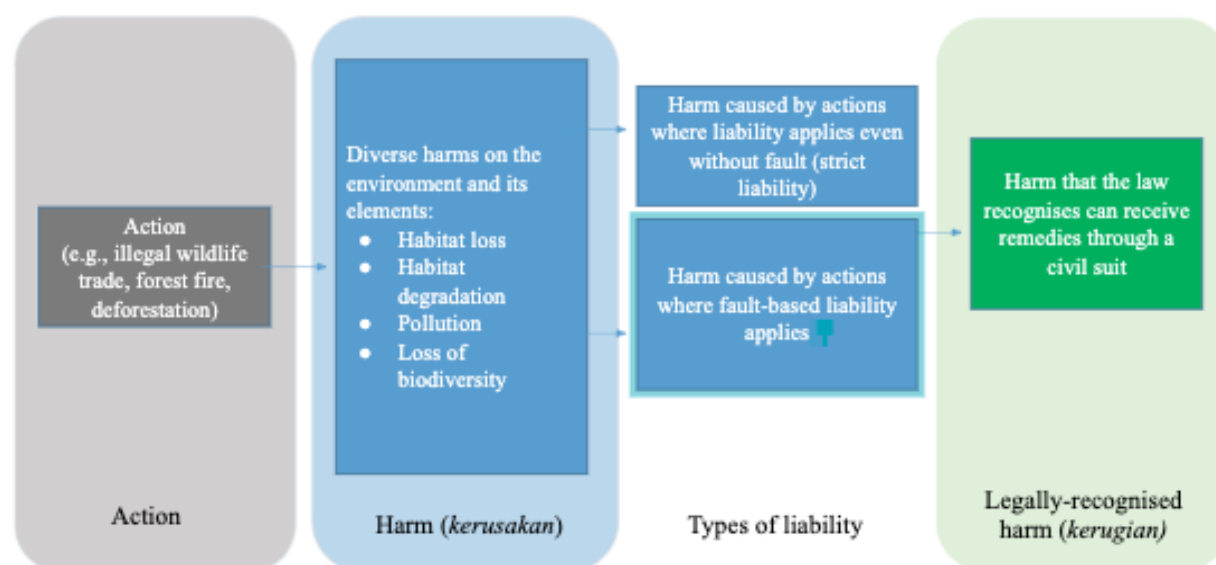


Figure 2. Linking actions to legally-recognised harm

Fault-based versus strict liability

Most actions resulting in environmental harm can only receive legal remedies via civil lawsuits if the responsible party is found at fault. Fault-based liability applies where the responsible party has committed an unlawful act; is at fault either through negligence or intention, has caused harm, and there was clear causation between the unlawful act and that harm. The scale of that harm must usually exceed a certain legally-defined standard that demonstrates a serious enough situation to necessitate legal action (described in the next section). In cases where harm to biodiversity is caused by actions such as illegal wildlife trade and deforestation, fault-based liability is most likely to apply.

In Indonesia, fault-based liability is regulated under Article 1365 of the Civil Code, which sets out the requirements for fault-based liability (the responsible party committed an unlawful act, is found at fault, caused harm, clear causation between the act and harm). Article 87 Law 32/2009

specifies that an unlawful act is one that exceeds legal environmental standards (described in the next section).

The relationship between criminal and civil suits

Fault-based civil liability requires proof that an unlawful act has occurred. This can involve a criminal act (e.g., trading protected wildlife), violation of an administrative obligation (e.g., securing permits) or contractual agreement, or an even act that is not prescribed in the regulation but considered a general norm by the public.

One way to demonstrate this is via a resolved criminal or administrative case that has already established that an unlawful act occurred. A civil liability suit could be built upon such a successful prior legal process. However, if the criminal case resulted in acquittal, then a related civil lawsuit is unlikely to be successful.

Alternatively, many legal systems allow civil suits to run in parallel with other legal processes. This simply increases the burden within the civil suit to prove that an unlawful act has occurred.

This contrasts with situations where strict liability applies. In these cases, parties are held responsible for the harm caused by their actions, even in the absence of intention or negligence, and even if they have demonstrated duty of care. However, these situations apply only to a subset of inherently dangerous activities, usually defined in the law or identified in a court ruling. In most countries, this involves activities such as handling hazardous materials. Civil suits for harm to biodiversity might use strict liability as a legal basis in where the action is one of these legally-recognised inherently dangerous actions.

In Indonesia, Article 88 Law 32/2009 specifies that strict liability applies to activities that use hazardous material and to other activities that cause serious threat to the environment. In the practice, court decisions have also recognized that burning peatlands poses a serious threat to the environment, and therefore strict liability applies⁶.

Indonesian standards for evaluating harm

In fault-based liability, the right to legal remedies is usually reserved for cases where impacts exceed certain legal standards/ thresholds, and where the causation between the illegal action and harm is clear (Fig. 2).

In Indonesia, Article 21 of Law No. 32/2009 provides the standards/thresholds that determine if the impacts of an illegal act are legally-recognizable harm that can be remedied via civil suits (*pencemaran/kerusakan*). Only actions that cause impacts exceeding these standards are liable to be responsible for remedying the resulting harm. This article focuses on standards for evaluating impacts on a habitat or ecosystem (*Kriteria Baku Kerusakan Lingkungan Hidup* or *Baku Mutu Lingkungan Hidup*). It includes thresholds for several specific ecosystems, such as a percent of coral habitat coverage impacted by the illegal act; only actions that exceed that area indicator are considered legal harm (MOE Decree 4/2001 on The Criteria of Coral Reef Damage). It also provides standards for common pollutants, such as concentration of chrome and cobalt in river water (Government Regulation 82/2001 on Water Management and Water Pollution Control).

⁶ The Ministry of Environment and Forestry v PT. Waringin Agro Jaya. Court decision no.456/Pdt.G-LH/2016/PN Jkt. Sel

In cases like illegal wildlife trade, the actions negatively impact biodiversity, including on specific threatened and endangered species, but the impact does not instantly affect the broader habitat or ecosystem. Law No.32/2009 does not provide explicit standards for determining where these impacts constitute legally recognised harm. Nevertheless, harm to the “biological components” of the environment is widely recognised in Indonesian law. For example, Government Regulation No. 4/2001 on Environmental Damage related to Forest and Land Fire references changes in species richness and population abundances, as indicators through which to evaluate harm. Harm to biodiversity is also recognised in legally-binding court decisions on forest fire cases, following Ministerial guides (MOE Reg. No. 7/2014).

Moreover, Law No. 32/2009 acknowledges that new standards will emerge with advances in science and technology. This guide proposes that appropriate standards for establishing harm to biodiversity involve their legal protection status and/or their conservation threat status. In both cases, species that are recognised as threatened with extinction. As a result, any activity that negatively impacts the population will increase this risk of extinction. The threshold/standard of impact is zero, unless there are legal exemptions (e.g., quota, CITES Non-detriment Finding, permit for scientific research). Therefore, actions harming these species without exemptions will result in legally-recognisable harm.

Two existing, appropriate standards for evaluating this include:

- Standards for the protection status of the species in Indonesia, contained within PP No. 7 year 1999 on Preservation of Animals and Plants, with its annexes that have been amended by several MoEF regulations, including:
 - Permen LHK No.P.20/MENLHK/SETJEN/KUM.1/6/2018;
 - Permen LHK No. P.92/MENLHK/SETJEN/KUM.1/8/2018; and
 - Permen LHK No. P.106/MENLHK/SETJEN/KUM.1/12/2018.
- Standards for the conservation threat status based on the International Union for Conservation of Nature (IUCN) Red List (<https://www.iucnredlist.org/>), including species in the categories: threatened, vulnerable, endangered and critically endangered. This often overlaps with national regulations.

Orangutan Example 1: Legal basis for a civil lawsuit in cases involving harm to Orangutan
 We illustrate 2 examples of harm caused to biodiversity (i.e. Orangutan), and the legal basis for taking action via a civil lawsuit.

Scenario	A peatland forest fire in Kalimantan kills and displaces dozens of Orangutan from their habitat.	An illegal wildlife trader orders the illegal harvest and arranges the illegal sale of a wild Orangutan as a pet.
Legal basis	<p>In this case, the burning the peatland forest is illegal and thus an unlawful act, and strict liability applies because peatland fires are considered an inherently dangerous activity. As such, the resulting environmental harm, including the harm caused to Orangutan, has a legal basis for remedy claim via a civil lawsuit.</p> <p>Even if strict liability were not recognised, the harm caused by the fire may exceed legal environmental standards regulated in Government Regulation No. 4/2001. Within this regulation, one of the harm criteria is the change in population abundance.</p>	<p>In this case, fault-based liability applies. Trade of protected wildlife is not formally recognised as an inherently dangerous activity, so strict liability does not apply. However, it is recognised as an unlawful act under Law 5/1990.</p> <p>Borneo Orangutan (<i>Pongo pygmaeus</i>) is a protected species in Indonesia, based on PP No. 7/1999.</p> <p>The situation also represents the exceeding of standard criteria of environmental harm. This is because the species is formally protected, and also listed as “Critically Endangered” by the IUCN Red List. Therefore, injuring even one Orangutan can be recognised by the law as environmental harm that merits remedy via a civil liability suit.</p>

2. HARM: TYPES OF SOCIAL, ECONOMIC AND ENVIRONMENTAL HARM

Based on a review of the literature and legislation across countries, we identify four general categories of environmental harm that affect a range of stakeholders and are legally recognised in many countries, including Indonesia (*kerugian*, Fig. 3). Each of these categories includes different specific elements of harm that may be relevant in a specific case (Table 1).

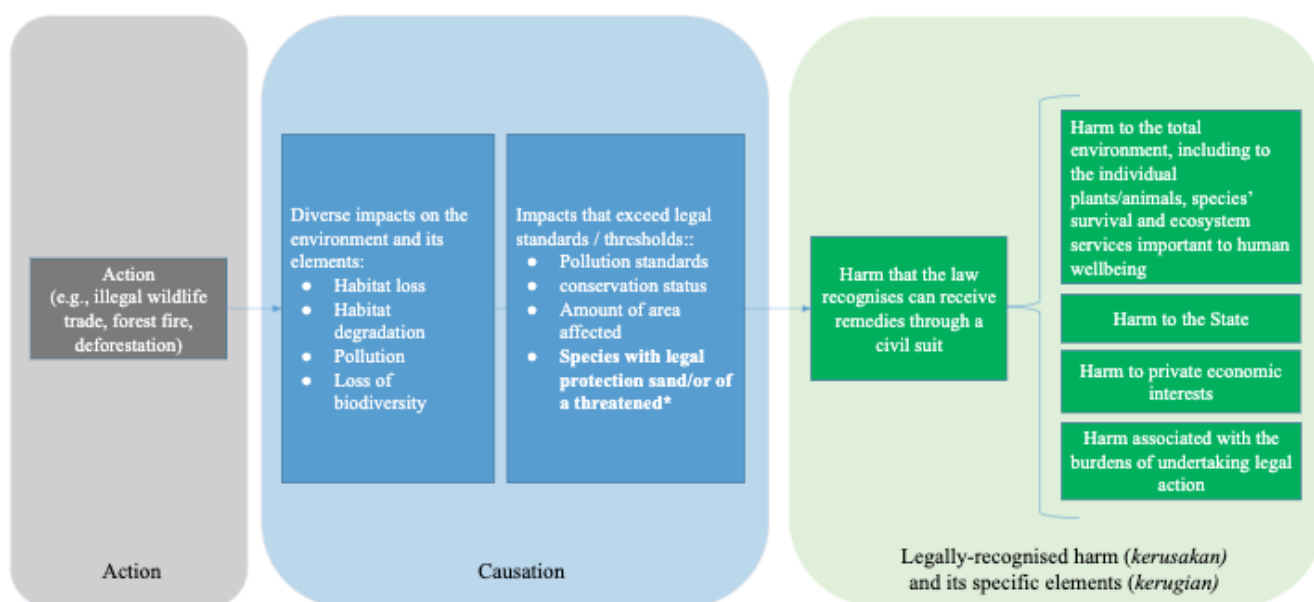


Figure 3. Specific types / elements of environmental harm (*kerugian*)

Table 1. Specific types / elements of harm (*kerugian*)

Specific types of harm	Description of harm and causation
Harm to the total environment	<ul style="list-style-type: none"> • Harm to individual plants or animals: Harm to the individual plants and animals impacted in a specific case • Harm to the overall survival of the harmed species: Actions that negatively impact individual plants and animals also have larger impacts on the long-term survival of their entire species. Actions that decrease populations, fragment populations and/or decrease habitat negatively impact species in many different ways, including reducing genetic diversity and limiting reproduction potential. This is particularly true for threatened species, where populations and species are already at risk of extinction. • Harm to public ecosystem goods and services: Biodiversity underpins all other ecosystems and the goods and services. Actions that harm individual plants and animals, and that cause declines in their populations, thus also impact the goods and services that they support. This includes impacts on human wellbeing, including direct uses of the environment (e.g., harvested as food, hunted for recreation, used to build houses), and passive uses of the environment (e.g., for education, recreation, cultural, spiritual and scientific uses).

Harm to the State	<ul style="list-style-type: none"> ● Loss in revenues: Harm where the affected biodiversity had value to the government, associated with revenues such as taxes, legal harvest, protected area revenues and/or future economic value. ● Loss in reputation/trust: Harm where the illegal action compromises the State's reputation (i.e. moral harm, e.g., its ability to protect its resources, trust in public institutions)
Harm to private economic interests	<ul style="list-style-type: none"> ● Loss in income or property value: Environmental harm can affect private interests, such as property or income, where these are explicitly linked to biodiversity resources. ● Increased private costs of accessing ecosystem goods and services: Environmental harm can increase private costs (e.g., bottled water, medical expenses).
Harm associated with the extraordinary burdens of undertaking legal action	<ul style="list-style-type: none"> ● Extraordinary costs associated with specialised environmental litigation: Environmental cases, whether undertaken by an NGO, individual or government require financial resources for specialised types of investigation, analyses and expertise (e.g., lab tests, surveys, modelling, hiring experts) .

Material and immaterial harm

Many countries, including Indonesia, distinguish between material and immaterial harm, with civil liability suits best suited to provide remedies for material harm that is clear and tangible, with uncertainties over immaterial harm that may be perceived as too abstract or subjective. There is also ongoing debate about what makes harm material or immaterial. Historically, environmental harm-- especially future harms resulting from the action--were perceived as immaterial harm because of uncertainties in how to quantify these impacts. However, courts have acknowledged that scientific advances have improved our ability not only to measure, but also to conceptualise environmental harm and remedies. Indeed, the long-term impacts of reducing populations of an endangered species can be quantified in some cases where data and modelling are available. However, even where these impacts are not quantified, it is now widely accepted that reducing the number of individuals in the population of an endangered species has material impacts on that species's survival. Therefore, Indonesian courts are consistently recognising various types of environmental harm as material harm.

Causation

A lawsuit must also demonstrate causation between the responsible party's actions and the specific types of harm in the case (actual cause) and that the responsible parties actions were the primary cause (proximate cause) acknowledged by the law. In some cases, actual and proximate cause are straight-forward to demonstrate and quantify, such as in a case where the plaintiff's actions resulted in the loss of potential tax revenue from legal wildlife harvest. or the injury of individual species caused by the illegal wildlife trade. In other cases the chain of causation can be complex and involve multiple contributing factors, such as in cases that involve harm to species or broader ecosystem service where harm may result multiple, synergistic impacts. This can present challenges to identifying a specific plaintiff's actions as a/the proximate cause of harm. Nevertheless, there are many successful cases involving complex causation.

Legal causation can be argued using different approaches. This may include specific field-based research and/or models that quantify specific harms. However, this can be very expensive and demanding, especially because there is little baseline data for most species. Causation can also be demonstrated using logical, research-informed arguments that establish causal links between action and harm. For example, where an endangered species is harmed, it is common sense, and also there is supporting research and expert argument to support that this causes impacts on the species population. This can include details about the affected individuals (e.g., age, condition, gender), photographs, expert accounts, records from a rehabilitation centre. It can also include existing research on species population numbers and conservation status, and existing research on the roles of the species and/or of related species that fill similar ecological roles.

Harms fall along a continuum of causation, from those very directly associated with the action, through to those that are more indirect. For example, removal of 1 individual animal causes direct harm to that individual. It also causes direct, if slightly less direct, harm to its local population. It further causes direct, but less direct, harm to the broader species survival--particularly if that species is threatened with extinction. The removal of 1 individual then also causes harm to the broader ecosystem function, as well as to various human uses for biodiversity--although these are comparatively indirect forms of harm.

Both direct and indirect harm are recognised under Indonesian civil and environmental law, so long as causation is clearly articulated. In traditional civil law, the proximity/directness between action and harm is quite narrow. However, in the environmental law context across countries and in Indonesia, these relationships are significantly expanded. For example, MOE 7/2014 recognises that environmental harm can cause not only direct impacts, but also a cascade of indirect impacts on ecosystems (e.g., hydrological services, nutrient cycling, genetic diversity). The causal relationships between action and harm is important, but there is broad acceptance that harm has a range of diverse, often long-term impacts that still deserve legal remedies.

Examples in Indonesia include:

- Courts in Indonesia have recognised that illegal logging on a slope contributed to a landslide, which caused economic harm to a nearby community (Mandalawangi Case⁷¹). In this case, the defendants were held responsible not only for the direct environmental harm to the site, but also a chain of resulting harms.
- In a land fire case, the court recognised that burning caused harm to Indonesia's national reputation (PT. Kallista Alam³, although no specific remedy was claimed).
- In land fire case, the court has recognised that burning a site impacts not only biodiversity at the specific site, but also the genetic resources of the affected species (PT. Kallista Alam).

⁷ Court decision No. 49/Pdt.G/2003/PN.Bdg jo Appeal Court decision No. 507/Pdt/2003/PT.Bdg jo Supreme Court decision No. 1794 K/Pdt/2004

² Court decision No. 55/Pdt.G/2013/PN.Smda jo Appeal Court decision No. 138/Pdt/2015/PT.Smr

³ Court decision No. 12/PDT.G/2012/PN.MBO jo Appeal Court decision No. 50/PDT/2014/PT.BNA jo Supreme Court decision No. 651 K/Pdt/2015 (cassation) jo Supreme Court decision No. 1 PK/Pdt/2017 (review)

Importantly, as scientific knowledge and public understanding about environmental links change over time, our ability to characterize and quantify direct and indirect harm, known as ‘attribution science’, is continually improving. This is plainly demonstrated in cases linking smoking to lung cancer, and emissions to climate change.

Orangutan Example 2. Causation of type of harm (*kerugian*) in the Orangutan case

In the illustrative example of Orangutan trade, the traders’ action resulted in loss of individuals from the wild, which caused a number of types of harm.

Specific types of harm (<i>kerugian</i>)	Example
Harm to the total environment including: Harm to individual plants or animals affected in this case	Following illegal trade, the live orangutan suffered physical injuries requiring veterinary attention, in addition to standard veterinary checks and quarantine in order to enter the rehabilitation centre. The animal will spend an estimated 3 years in a rehabilitation centre before attempts are made to try and introduce the animal into a semi-wild population.
Harm to the survival of the affected species	<p>Even removal of this 1 individual has impacts on the survival of the population where the animal came from, and on the overall species survival. There are few local population estimates available, but they are known to be fragmented, small and declining⁸, which means it is already a vulnerable population. It also causes harm to the overall species population, which numbers approximately 100,000 animals and faces serious declines⁹. Hunting is known to be an important, targeted driver responsible for recent decline in orangutan populations¹⁰.</p> <p>There is confidence about these population and species impacts, even from the removal of 1 animal, for several reasons: When an individual is removed, not only does the the population decrease, but that individual’s future reproductive contributions to the population are lost. This is particularly important for for female animals that are removed and for species that are slow to mature, such as the Bornean Orangutan, which is not reproductive until approx. 25 years¹¹. . In addition, the genetic diversity of that individual is removed from the population, contributing to in-breeding that is harmful to species survival, which has already been observed for Bornean Orangutan because most orangutan populations are already small¹².</p>

⁸ Ancrenaz, M., Gumal, M., Marshall, A.J., Meijaard, E., Wich, S.A. & Husson, S. 2016. *Pongo pygmaeus ssp. pygmaeus*. The IUCN Red List of Threatened Species 2016: e.T39781A17990445. URL: <https://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T39781A17990445.en>.

⁹ Voigt, M., Wich, S.A., Ancrenaz, M., Meijaard, E., et al. 2018. Global demand for natural resources eliminated more than 100,000 Bornean orangutans. *Current Biology*, 28:761-769.

¹⁰ Voigt, M., Wich, S.A., Ancrenaz, M., Meijaard, E., et al. 2018. Global demand for natural resources eliminated more than 100,000 Bornean orangutans. *Current Biology*, 28:761-769.

¹¹ Knott, C.D., Emery Thompson, M. and Wich, S.A., 2009. The ecology of female reproduction in wild orangutans. *Orangutans: geographic variation in behavioral ecology and conservation*. Oxford University Press, New York, pp.171-188.

¹² Warren, K.S., Nijmian, I.J., Lenstra, J.A., et al. 2000. Microsatellite DNA variation in Bornean orangutans (*Pongo pygmaeus*). *Journal of Medical Primatology*, 29:57-62.

Harm to ecosystem goods and services	<p>There are no legal, direct consumptive human uses for wild orangutan (i.e. hunting is illegal). However, they are important to ecotourism. There are also many passive uses. For example, as a Critically Endangered species, the orangutan has significant value to people in Indonesia and globally. This includes the desire for future generations to be able to know and see this species (bequest value), and scientific value as one of the most researched primate species in Indonesia. When this orangutan is injured, these passive values are harmed. This is particularly true because orangutan populations are already small. In addition, decreasing the wild orangutan population affects the ecosystem services that this species provides. In particular, orangutans are recognised as an important seed disperser for many tree species with large seeds.¹³ These types of changes, however, are often hard to measure in the short-term and require significant research.</p> <p>[Note: In this guide, we do not typically propose to precisely measure these types of harm, but they are still important to recognise as contributing factors.]</p>
Harm to the State	<p>The Government of Indonesia's domestic and international reputation¹⁴ are hurt by this action. This includes reduced domestic and international trust in its ability to conserve its protected species, effectively manage protected areas, and maintain control over illegal activities.</p>
Harm to private economic interests	<p>Orangutan is an important ecotourism attraction for Indonesia, including in West Kalimantan. Reducing the orangutan population negatively affects the long-term economic interests of ecotourism operators. The economic harm caused by the decrease of 1 individual, however, may be hard to detect and so may be challenging to include in a lawsuit. An exception is if this was a charismatic individual actively recognised at a tourism site. Nevertheless, the gradual decrease in orangutan numbers has cumulative negative impacts on tourism numbers.</p>
Harm associated with the extraordinary burdens of undertaking legal action	<p>Investigating and litigating this case required extraordinary expenses, including those associated with DNA testing to determine the specific origin of the animal; field trips to the rehabilitation centre to collect information on the affected individuals and their long-term care needs, and hiring of 2 orangutan experts to prepare a restoration plan and provide evidence.</p>

¹³ Tarszisz, E., Tomlinson, S., Harrison, M.E., Morrogh-Bernard, H.C. and Munn, A.J., 2018. An ecophysiology informed model of seed dispersal by orangutans: linking animal movement with gut passage across time and space. *Conservation physiology*, 6(1), p.coy013.

¹⁴ Hanahfia, J., Gokkon, B. 2020 28 May. Poaching in Indonesia's biodiverse Leuser Ecosystem on the rise amid COVID-19. Mongabay. URL: <https://news.mongabay.com/2020/05/wildlife-poaching-indonesia-leuser-covid19-tiger-orangutan-rhino/>;

Ng, K. 2020, 20 May. Indonesia markets continue to sell reptiles, rabbits and birds in filthy cages despite coronavirus. The Independent. URL: <https://www.independent.co.uk/news/world/asia/stop-wildlife-trade-peta-indonesia-market-reptiles-rabbits-birds-cages-coronavirus-a9524291.html>;

Ismanto, A.D. 2019, 23 Aug. The challenge to protect orangutan. The Jakarta Post. URL: <https://www.thejakartapost.com/academia/2019/08/23/the-challenge-to-protect-orangutan.html>.

3. REMEDIES: TYPES OF LEGAL REMEDIES THAT RESPOND TO DIFFERENT HARM

Different types of harm (Table 1) necessitate different types of remedies. We identify 8 broad categories of remedies (*ganti rugi*), ranging from the costs associated with undertaking legal cases, to the remedy of harm to biodiversity itself, and diverse harms to both the public and to private individuals.

Different approaches to remedies

Civil suits require specific claims, such as a specific amount of money for compensation, or participation in certain actions that provide remedy.

Price lists and default values: One approach to calculating remedies relies on “price lists” and a set of default values to inform remedies. These can be determined based on market values or research, and are convenient because they are fixed, essentially serving as fines with which to charge responsible parties. However, this approach is also often inaccurate: Different ecosystem goods and services have many different values across time and place, and there is very little existing research on which to draw to inform these values. In addition, many social, economic and ecological values are often poorly reflected by these narrow measures. For example, a Critically Endangered Orangutan may have a monetary value of several thousand US dollars on the illegal market, but this is nowhere near its real, diverse values to the environment and people--which are described in this guide.

Environmental / ecosystem services accounting: Another approach involves environmental accounting, to create a list of each ecosystem good and service that has been affected by the illegal action, and seek to put an economic value on it. For example, the illegal trade of an orangutan has impacts on species conservation, seed dispersal and forest structure. This approach, while potentially very thorough, can be very resource-intensive, long-term and not always accurate. This is because the relationships between biodiversity and ecosystems are highly complex, hard to measure, and often long-term. Moreover, demonstrating specific causation and quantifying its contribution to that ecosystem service is not a practical exercise. In some cases, these causal relationships are clear, and improving with research. For example, the links between greenhouse gasses, climate change and impacts on biodiversity are now scientifically clear, and increasingly recognised in courts globally. For the purpose of these guides, we propose that these types of harm should be recognised and used to build a legal argument, but do not need to be precisely measured in order to inform remedies

Costs of executing remedies: This guide takes an approach of first identifying the most important types of harm associated with the case, and then the most appropriate remedies for addressing these harms. It then identifies the costs associated with operationalising these remedies.

For each type of harm, we describe a range of possible remedies, although these will vary across jurisdictions (Tables 2). These include remedies in the form of financial compensation, orders for defendants to pay for undertaking certain actions (e.g., costs of undertaking clean-up, education programmes, reintroduction), and/or orders for defendants to undertake certain actions (e.g., issue apologies, restoration). These details are important because civil suits require that plaintiff make very specific claims to the court, and which allow judges to order defendants to undertake specific actions.

For each type of remedy, we explain the legal basis for why it can be claimed under Indonesian law, drawing primarily on MOE Reg. 07/2014. However, the requirement to follow this regulation is only in relation to the government's legal standing under Law 32/2009. If the plaintiff is another party (e.g., NGO, individual), then this guide can serve as a reference, but they are not constrained by it, and can make further claims for other remedies based on the Civil Code. As the Civil Code does not specify exactly what claims are or are not allowed, remedies can potentially be very expansive, and rely heavily on jurisprudence.

Table 2. Linking types of harm to possible remedies

Categories of harm [<i>kerugian</i>]	Categories of remedies [<i>ganti rugi</i>]	Elements of remedies	Description & examples of remedies	Legal justification (Indonesia)
Harm to the total environment, including: · Harm to individual plants or animals affected in this case; · Harm to the overall survival of the harmed species, and · Harm to public ecosystem goods and services	1. Countermeasures or mitigation measures to avoid further harm from occurring	1.1 Cost of dealing with biological material, IF individual is dead	Financial compensation for: • Cost of destroying biological material • Costs of storing biological material as evidence	In Indonesia, this is typically part of criminal law procedure (MoE regulation No. P.26/MenLHK/Setjen/Kum.1/4/2017 on Evidence Handling in Environment and Forestry Criminal Case). If there is no criminal prosecution, then it may possibly be claimed via a civil lawsuit.
		1.2 Cost of transporting and caring for individuals following seizure until case closure, IF individual is alive	Financial compensation for: • Evacuation team, including veterinarian • Transportation to and from field site and/or international repatriation • Anesthetic • Food, shelter, medicinal care and other requirements of the individual	In Indonesia, this is typically part of criminal law procedure (MoE regulation No. P.26/MenLHK/Setjen/Kum.1/4/2017 on Evidence Handling in Environment and Forestry Criminal Case). However, it may also possibly be claimed via civil lawsuit; MOE Reg. 07/2014 Art 3.c references the costs of countermeasures for environmental pollution and/or damage. The accompanying Appendix 2 Chapter 2 Section C.3 further explains that this mitigation refers to immediate actions to

			tackle pollution and/or damage to the environment to stop harm from getting worse.
2. Restoration and/or replacement of ecosystem goods and services, to the baseline level as if the harm had not occurred,	2.1 Cost of long-term, captive care of live harmed individuals, IF the individual is alive	Financial compensation for: <ul style="list-style-type: none"> • Food, shelter and care of the animal for the duration of time projected by experts 	MOE Reg. 07/2014 Art. 3.c references the remedies for the costs of environmental recovery. The accompanying Appendix 2 Chapter 2 Section C.3 further specifies that the pollution and/or damage must be restored, to the extent possible, to its pre-harm condition.
	2.2 Cost of reintroducing live individuals into wild or semi-wild populations, IF deemed necessary by experts	Financial compensation for: <ul style="list-style-type: none"> • Reintroduction and monitoring activities following standard protocols • Additional equipment required 	MOE Reg. 07/2014 Art. 3.c references the remedies for the costs of environmental recovery. The accompanying Appendix 2 Chapter 2 Section C.3 further specifies that the pollution and/or damage must be restored, to the extent possible, to its pre-harm condition.
	2.3 Cost of undertaking actions to increase the wild population to baseline level as if the harm had not occurred—IF the individuals could not be reintroduced into their original wild populations and deemed necessary by experts (see 2.2)	Financial compensation for <ul style="list-style-type: none"> • Actions that experts determine are necessary in order to increase the population by the number of individuals affected • Additional actions necessitated as a result of the harm (e.g., translocation, population density survey at a specific site, repatriation) • Additional monitoring effort or equipment needed to protect this additional individual (above), as a function of the additional area protected and estimated costs of “good” monitoring 	MOE Reg. 07/2014 Art. 3.c references the costs of environmental recovery, and the accompanying Appendix 2 Chapter 2 Section C.3 further specify that the polluted and/or damage environment must be restored and recovered as before, prior to pollution/damage.
	2.4 Costs of specific, time-bound pilot project deemed necessary in order to enable the specific remedies (e.g.,	Financial compensation for : <ul style="list-style-type: none"> • Cost of conducting the specific pilot project, identified by experts as necessary for 	

		where a restoration process is uncertain).	providing remedies in this specific case.)	
	3. Losses in public human direct and passive uses of ecosystem good and services, from the time of injury until recovery (interim loss). This includes uncompensated losses where affected parties cannot be directly remedied through conventional means (e.g., financial compensation, restoration actions)		<p>Financial compensation to remedy interim losses (beyond restoration of injured/dead resources in 2.3). These amount of compensation could be calculated based on the cost of undertaking the additional restoration/replacement actions, or based on the financial value of the lost direct/passive use values (e.g., reduced food access, cultural losses, education losses recreational losses, spiritual losses scientific losses).</p> <p>AND/OR</p> <ul style="list-style-type: none"> • Orders to issue a public apology • Orders to participate in public service in the species habitat • Orders to conduct public prayer <p>AND/OR</p> <p>Financial compensation for the cost of interventions that protect the species and/or raise awareness its values, particularly where past harms are difficult to remedy, and/or where harms have long-term implications, such as investments into:</p> <ul style="list-style-type: none"> • Education about conservation of affected species • Cultural activities associated with the species • Education to reduce demand 	<p>MoE Reg.7/2014 Art 3.d. references the costs for ecosystem damage. The accompanying Appendix 2 Chapter 2 Section C.3 specifies that this refers to the economic value of impacts of pollution/environmental damage – in accordance with the degree and duration of the damage. Duration of the damage is calculated from the start of the harm that happens until restoration is completed. Therefore, we can conclude that Art 3.d is similar to the concept of interim loss.</p> <p>Known as “immaterial damage” in Indonesia, this is not mentioned in the law, but is recognized in jurisprudence</p>
Harm to the State	4. Financial losses to the State	4.1 Loss of taxes and/or revenues	<p>Financial compensation for:</p> <ul style="list-style-type: none"> • Reduced revenues to protected areas • Reduced revenues from legal wildlife harvest (if allowed) 	Article 1365 Indonesia civil code

	5. Remedies for moral harm		Financial compensation for: <ul style="list-style-type: none"> • Harm to reputation • Harm to public trust 	Known as “immaterial damage” in Indonesia. This is not mentioned in the law, but recognized in the jurisprudence (e.g., Supreme court decision No 2822 K/Pdt/2014)
Harm to private economic interests	6. Remedies for private economic losses	6.1. Losses in income and/or property value	Financial compensation for: <ul style="list-style-type: none"> • Declines in ecotourism/wildlife tourism • Projected declines in ecotourism/wildlife tourism • Decline in income from legal wildlife harvest 	Article 1365 Indonesia Civil Code
		6.2 Increased private costs of accessing ecosystem goods and services	Financial compensation for: <ul style="list-style-type: none"> • Increased food costs • Increased costs of accessing alternatives to traditional medicine 	Article 1365 Indonesia Civil Code
Harm associated with the extraordinary burdens of undertaking legal action	7. Remedies for the extraordinary financial costs of preparing the claim and bringing the case	7.1 Plaintiff’s extraordinary costs for conducting scientific assessments needed for the case	Financial compensation for: <ul style="list-style-type: none"> • Collecting evidence, field-trips • DNA tests to identify taxon and sub-population • Hiring expert witnesses to testify in court, including their transport costs • Cost of resource persons and of preparing scientific reports (e.g., for the damage claim, establishing causal links between the action and harm) 	Art 3.b specifies these as including the costs of environmental dispute resolution, fees, expenses for site verification, lab analyses and experts. Notably, these must be receipted “out of pocket” expenses by the plaintiff
		7.2 Plaintiff’s additional costs	Financial compensation for: <ul style="list-style-type: none"> • Legal fees 	Not allowed for inclusion in a damage claim in Indonesia, but is in some other countries
	8. Remedies for the cost of monitoring the implementation of the court order.		Financial compensation for: <ul style="list-style-type: none"> • Costs of field trips • 3rd party or government agency evaluators • Further court costs associated with monitoring 	Art 3b. references the costs of monitoring the execution of payments requested in the court order (Art 3.b).

Remedies that involve restoration actions to benefit the harmed species (Remedy 2)

One of the key remedies in environmental harm cases involves restoration actions. This can include actions such as pollution clean-up and reforestation. In cases where threatened and endangered species are affected, it can also involve actions to increase populations in the wild. In some cases, it may be possible to increase the population by reintroducing a live individual into its wild population (Remedy 2.2). However, reintroduction is unusual for many species due to lack of expertise and concerns about habituation to humans, disease, and inability to survive in the wild.

As such, remedies are likely to involve other actions that can help to increase wild populations to their levels as if the harm had never occurred (Remedy #2.3). If 1 individual is effectively removed from the wild population, then the wild population must be restored by 1 individual. This type of actions is likely to be based on habitat-equivalency analysis, a standard approach used to determine the amount of compensatory restoration required to provide an equivalent ecosystem good or service. For restoration of harm to biodiversity, an individual plant or animal is represented by the average area required by 1 adult individual of that species (i.e. habitat range is used as a proxy for the individual). This type of approach is used because, for most species, there are huge areas of their habitat that remain unprotected, and where animals of the same species are under threat. As a result, actions to protect habitat areas will increase the chance of survival for that species. That increase in survival provides redressability for the individual(s) that were lost as a result of the initial harmful act.

Restoration actions can include:

- Protecting additional habitat. New or additional protection of habitat can increase the chance of species survival. Determining the location and amount of area required for conservation can be based on the average range of 1 adult individual of that species. The damage claim would thus include the costs of acquiring and managing this land for a time period recommended by experts, likely determined by the average life expectancy of the species. Protecting additional habitat can involve a range of institutional arrangements. It could involve expanding protected areas, though this presents significant bureaucratic challenges. It could also involve expanding private conservation areas, and/or expanding community-based conservation efforts.
- Restoring or enhancing habitat. Actions to improve the habitat quality can serve to increase habitat carrying capacity, and thus facilitate recovery of a species population. There are huge areas of degraded land within protected areas, private conservation concessions, customary lands and other *kawasan ekosistem esensial*, which would benefit from restoration and/or enhancement actions. Actions to increase populations should be defined by experts, who can identify specific actions, or propose habitat restoration of an area equivalent to the range of 1 adult individual.
- Better monitoring/protecting threatened populations. There are many protected sites where enforcement is weak and protected species are still threatened by illegal harvest, habitat degradation and destruction. Restoration actions can direct additional investment into monitoring/protecting these threatened populations, so that numbers can naturally increase. The type of monitoring required and amount of area subject to additional monitoring should

be determined by experts and estimated based on the range of 1 adult individual. The improvements in species conservation that results from additional monitoring means that the species is more likely to survive despite the loss of individual(s) caused by the initial harmful act.

- Pilot projects needed to enable remedies. For many species, there is not enough data or experience to inform appropriate remedies associated with restoration actions, so there may be a need to piloting approaches to identify appropriate responses.

Determining what restoration actions are needed to increase the wild population should be informed by taxa experts and, if they exist, Species Action Plans and/or IUCN Specialist Groups. They may decide that the actions should take place at the site where the original harm occurred, if possible and appropriate, or at another site that would have greater benefit to biodiversity and the overall species. As such, remedies should be guided by what is best for conservation.

Importantly, experts may decide that harm caused at one may actually be better redressed through remedial actions undertaken at another site--even if that other site was not affected by the original illegal act. This is because they may deem that additional action may be better for overall conservation of the species if taken at another site where the population is under greater threat, or where the conservation actions are more likely to be successful and practical. This is important because redressability is not only to a single site or individual, but to an entire species.

Remedies for interim losses (Remedy #3)

When harm to biodiversity or the broader environment occurs--even if countermeasures and restoration actions are taken--these are often slow and involve time-lags. For example, actions to restore habitat and increase wild animal populations are not immediate because they rely not only on human actions, but also on natural regeneration and animal breeding cycles. In the intervening time until remedies are complete, there can still be ongoing losses to humans' direct and passive uses for biodiversity.

These are known as "interim losses" and can be addressed through financial compensation to the affected individuals or communities. For example, stated preference methods (Willingness to Pay, Willingness to Accept) can be used to determine lost passive use values. This involves interviewing people from the groups interested (e.g., tourists, local community, citizens) to elicit data to use to estimate how much they would be willing to pay to protect a certain good or service, such as the existence of an endangered species.

Alternatively, remedies of interim losses can be direct investment into *additional* restoration actions. In this case, experts would employ methods such as habitat equivalency analysis or resource equivalency analysis, to determine how much additional restoration action are needed to help compensate for the interim losses.

However, humans value biodiversity for many reasons that involve passive uses, including existence, bequest, spiritual and cultural values. People may decide that financial or resource remedies are not acceptable forms of remedies in these cases involving sacred values. They may, instead, request remedies such as:

- Remedies that direct investment in education and cultural activities that address the harmed values.
- Remedies that orders for the defendants to participate in public-facing acts such as apologies and public prayers. Importantly, these cannot be punitive with an intent to punish, which is the domain of criminal law. Instead, they must be demonstrably important to the creating remedy. In these cases, it is important that plaintiffs make clear argument for how these remedies provide redress for the specific harm they experienced.

4. DAMAGE CLAIMS: PREPARING A CLAIM FOR THE COURT

Even once the appropriate remedies have been identified, a civil claim requires that this be translated into specific claims that serve to “make the public whole”, such as a request for the responsible parties to undertake certain actions, or a request that they pay a certain amount. These are referred to as “damage claims”, which often list the actions needed to provide remedies (e.g., restoration) and then the budgets necessary to operationalise each element of the remedies.

Data sources

Identifying the costs of operationalising remedies will draw on a range of data sources (Table 3; e.g., Orangutan Example 3). In some cases, these can be drawn from values specified in government regulations (e.g., cost of an expert witness from a government agency). In many other cases, they rely on expert evidence to determine the types of restoration actions that are necessary, the costs of which can then be estimated based on the budgets of previous conservation actions by government and/or NGOs. In other cases, remedies can be best determined by the injured parties (e.g., Willingness to Accept methods to determine financial compensation, or to determine whether an apology is an acceptable remedy).

Table 3. Potential data sources for calculating damage claims based on different types of remedies

Example Elements of remedies	Example data sources to calculate damage claims
<p>1.2 Cost of transporting and caring for individuals following seizure until case closure, IF individual is alive</p> <p>2.3 Cost of undertaking actions to increase the wild population to baseline level as if the harm had not occurred—IF the individuals could not be reintroduced into their original wild populations and deemed necessary by experts</p>	<ul style="list-style-type: none"> • Plaintiff’s records of actual costs incurred • Estimates of cost per individual, based on records of historical average spending by NGO and/or government care and rehabilitation centres
<p>3. Losses in human direct and passive uses of ecosystem good and services, from the time of injury until recovery (interim loss)</p>	<p>Valuation methods such as:</p> <ul style="list-style-type: none"> • Travel cost (for recreational losses) • Stated preference methods (e.g., Willingness to Pay and Willingness to Accept) • Benefits transfer from other cases/studies, including existing stated preference studies • Market models of supply and demand <p>OR</p> <ul style="list-style-type: none"> • Habitat equivalency analysis and the cost of undertaking restoration/replacement of equivalent. Estimates of cost per individual, based on records of historical average spending by NGO and/or government care and rehabilitation centres

3. Uncompensated losses where affected parties cannot be directly remedied through conventional means (e.g., financial compensation, restoration actions)	<ul style="list-style-type: none"> • Remedies as expressed by plaintiffs, and not necessarily associated with economic methods • Estimated costs of undertaking educational and cultural actions that provide remedies, as requested by plaintiff
4.1 Loss of taxes and/or revenues 6.1. Losses in income and/or property value	<ul style="list-style-type: none"> • Estimates of losses in revenues, income and/or property values, usually demonstrated using receipts to show differences before/after loss
5. Remedies for moral harm	<ul style="list-style-type: none"> • Symbolic financial amount
7.1 Plaintiff's extraordinary costs for conducting scientific assessments needed for the case	<ul style="list-style-type: none"> • Plaintiffs' records of actual costs • Government agency records of standard costs (e.g., government lab charges for key services, such as DNA tests) • Government fixed rates for key costs or bureaucratic procedures, such as per diem amounts for government experts (e.g., Min. of Finance Reg. on State Budget Standards)

Expert witnesses

Expert witnesses are often called on to provide evidence, in person and/or in writing, regarding the harms in a case, the appropriateness of different remedies (Table2, Remedy 2.2, 2.3) and data to support specific claims (Table 3). In some countries, including Indonesia, experts are typically thought of as individuals from government and universities with formal academic credentials. However, particularly in the context of understanding diverse types of harm and remedies for the environment, expertise is likely to come from a broader range of sources--including personal and professional experiences. Experts who might provide data for an environmental harm cases focused on threatened species might include:

- Ecologist or a species expert to explain the various harms caused by the illegal action, and to identify the most appropriate remedies, including specific recommended actions and locations.
- Representative from an indigenous and/or local community to explain about specific local harm experienced as a result of harm (e.g., on culture, livelihoods, food sources), and to help inform appropriate remedies.
- Park ranger or manager to explain the harm of illegal activities on specific sites and/or species, and to inform on specific remedies
- NGO or government representative from a species rehabilitation and reintroduction centre to explain the harm and costs associated with an illegal act
- DNA forensic expert to identify the species and its origin
- Expert (economist or other scientist) to explain the an economic valuation method (e.g., Willingness to Pay) that might be used as part of a remedy
- A tour operator to explain the economic impacts of a particular harm.

Restoration plans

Ensuring that remedies can be operationalised requires not only an estimation of their costs, but also specific plans for their implementation. These will vary widely across contexts, but for biodiversity might include actions identified by experts that are needed to increase wildlife populations, including identification of sites where these actions should be undertaken; steps for operationalizing these actions, and the timelines on which these should happen. Restoration plans can also identify monitoring requirements and evaluation procedures, to measure whether the actions are resulting in remedies, and how related progress should be reported to the court and to the public. They can state which individuals or agencies are responsible for implementing the remedies and the monitoring/evaluation. These types of specific restoration proposals can enable courts to make far more specific rulings, and can be important to monitoring, and to holding the responsible parties, court and government accountable.¹⁵

Orangutan Example 3. Example remedies in the Orangutan case -

Please note that values/numbers here are still missing – just a place holder

We highlight example remedies for the harm caused in the illustrative orangutan case, picking those that we think are most relevant and strong for inclusion in a damage claim for submission to court.

Category of remedy	Elements of remedy	Details	Requested remedy
1. Remedies for costs of countermeasures or mitigation measures to avoid further harm from occurring	1.3 Cost of transporting and caring for the live animals following seizure until case closure	Average cost of monthly care	#
2. Restoration and/or replacement of ecosystem goods and services, to the baseline level as if the harm had not occurred,	2.1 Cost of long-term, captive care of live harmed individuals, IF the individual is alive	Average cost of monthly care	#
	2.2 Cost of reintroducing live individuals into wild or semi-wild populations, IF deemed necessary by experts	Average cost of reintroduction from local NGO rehabilitation centre	\$24,000 per animal
	2.3 Cost of undertaking actions to increase the wild population to baseline level as if the harm had not occurred—IF the individuals could not be	Because the live animal can only be released into a semi-wild population (see 2.2), the original, wild West Kalimantan population remains harmed and merits	#

¹⁵ The example of the restoration plan of Exxon Valdez Oil Spill can be accessed: <https://evostc.state.ak.us/media/4005/1994restorationplan.pdf>. It identifies the goal, objectives and strategy to restore key species affected by the oil spill.

	reintroduced into their original wild populations and deemed necessary by experts (see 2.2)	remedy. This can be done in the form of additional protected area in the affected area. The average habitat range for this species is xxxha, which is the proxy for 1 individual.	
3. Losses in human direct and passive uses of ecosystem good and services, from the time of injury until recovery (interim loss)[maximum potential amount of time], including uncompensated losses (where financial compensation is considered inadequate)	Major scientific value as a domestic and international resource, as one of the most researched species in Indonesia. From 2010-2015: 8% of all international research permits focused on primates, and 58% of these focused specifically on orang-utan (LIPI).		
	Harm caused to a Critically Endangered species	Apology Investment into an educational exhibit	
5. Remedies for moral harm	Harm caused to the reputation of the protected areas		
7. Remedies for extraordinary financial costs of preparing the claim and bringing the case	8.1 Plaintiff's extraordinary costs for conducting scientific assessments needed for the case	DNA tests to identify sub-population Cost of experts to prepare the scientific assessments	
8. Cost of monitoring implementation of the court order.			

Orangutan Example 4. Illustrative restoration plans for increasing orangutan population .

5. PROCEDURES: LEGAL CONSIDERATIONS IN PREPARING LAWSUIT

Civil suits involve plaintiffs making specific claims for remedies (including damage claims) from defendants believed to be the parties responsible for causing the harm. There are key legal considerations that define which legal entities can act as plaintiffs and defendants to represent different interests, and they types of claims that are allowed.

Plaintiffs' legal standing

Many countries grant different types of stakeholders the legal standing to act as plaintiffs in civil suits for environmental harm (Table 4). This includes different rights for individuals, government agencies and civil society organisations. In Indonesia, these rights are reflected in both its Civil Code and in Law 32/2009, which explicitly grants this diverse range of plaintiffs with legal standing in environmental cases.

Table 4. *Legal subjects and their legal standing as plaintiffs in Indonesia*

Legal subject	Represented interest	Legal justification
Individual legal subjects	Can only represent their own interests, based on harm caused to their rights, such as their direct and passive uses of the environment. They cannot act on behalf of the environment (e.g., to demand restoration).	Art. 91 Law 32/2009
National government agencies	Can act on behalf of the environment, representing its interests where harm has occurred. Can also represent the interests of specific government agencies. Legal standing to do this resides with the ministry responsible for the environment. At present (2020), the Ministry of Environment and Forestry's Directorate of Law Enforcement (Gakkum) is the only body that can lead this type of civil suit. However, this legal standing has changed over time with institutional reforms.	Art. 90 Law 32/2009 SK KMA No/36/2013 on Environmental Case Handling Guide
Local government agencies (municipal, city, district)	Can act on behalf of the environment, representing its interests where harm has occurred--but restricted to harm that to or in areas specifically stewarded by local government agencies (e.g., <i>Taman Hutan Rakyat</i> , <i>Taman Kota</i> , local habitat harm outside of protected and forest areas). If harm involves a threatened species, then local agencies may claim civil remedies, but would need to cooperate with the national government to develop appropriate remedies because protected species management and protection falls under national government authority. An exception is if the species is a provincial symbol and the local agency has worked to preserve them as such, then the local government may argue that they have standing over the case.	Art. 90 Law 32/2009 SK KMA No/36/2013 on Environmental Case Handling Guide
Environmental civil society organizations	Can act on behalf of the environment, representing its interests where harm has occurred. However, they cannot request remedies that might enrich the plaintiff organisation. They can	Art. 92 Law 32/2009 and jurisprudence

	represent their own interests, where the organisation has demonstrated out-of-pocket expenses while conducting countermeasures in response to the harm.	
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Despite all having legal standing (Table 4), they are legally entitled to represent different types of interests and are limited in the types of remedies that they can claim (Table 5). For example, private individuals can bring forward claims for their own private economic interests, but not act on behalf of the environment (Table 5). Conversely, government agencies and civil society organizations may make claims for remedies for harm caused to individual plants and animals, species and ecosystem services, but not for the specific harms caused to private economic interests. However, the remedies that civil society organizations can claim are more limited than the government; they cannot claim for financial compensation on behalf of the environment, but only request that the court orders the performance of remedies. Moreover, different legal entities cannot bring forward the same claims twice, unless they are reflecting distinct, additional harm. In these types of cases, government agencies and civil society groups are both representing the environment *and* their own interests. Harm experienced by humans can only be claimed by the legal subject that bears the right to such environment values. Thus, government agencies are able to argue its standing to the harm to state budgets and public environmental goods and services (e.g., scientific values, broad cultural values). However, it may not be able to claim remedies for harm to passive and direct human uses experienced by specific individuals and communities (e.g., local cultural loss, who should serve as plaintiff themselves (and could be still represented by the government lawyers on their behalf). In addition, because the government is mandated to provide core functions such law enforcement, the costs arising for these functions cannot be considered part of harm for inclusion in a claim (e.g., costs of investigation of preparing legislation).

Table 5. Types of harm that can be claimed by different legal subject in Indonesia

Type of harm	Individual legal subject	Government agency	Environmental civil society organization
Harm to the environment: Harm to individual plants and animals		X	X
Harm to the environment: Harm to the survival of the affected species		X	X
Harm to public ecosystem goods and services	X, IF individuals act collectively (e.g., indigenous community)	X IF it is clearly of public value (rather than private)	X, IF it is relates specifically to environmental interest (e.g., ecosystem health) and not purely human oriented (e.g., food, culture, spiritual)
Harm to the State		X	
Harm to private economic interest	X		
Harm associated with the extraordinary burdens of undertaking legal action	X	X	X

Orangutan Example 5: Plaintiffs in the Orangutan case

In the illustrative Orangutan case, there are a number of different potential plaintiffs who could bring forward claims for remedies via civil suits. We explore how different plaintiffs could propose legal standings that would allow them different types and scales of remedies.

Type of harm	Scenario	Plaintiff	Basis for legal standing & scope of claims allowed
Harm to the environment : Harm to individual plants and animals	The confiscated orangutan requires long-term care in a rehabilitation centre, followed by participation in a reintroduction programme that will eventually allow its release into a semi-wild population. After that, it will require long-term monitoring to ensure that the reintroduction is successful	Government agency	May act on behalf of the environment. It may propose a claim for remedies that involve compensation for the costs of undertaking actions to remedy this harm. Alternatively, it could instruct the defendant to undertake remedial action themselves, or order a third-party (e.g., the plaintiff, NGO, government agency) to conduct such action.
		Civil society organization	May act on behalf of the environment, but may not claim financial compensation for such harm. It may propose a claim for the defendant to undertake remedial actions, or ask the court to order a third party (e.g., plaintiff, government agency, other NGO) to undertake the remedial actions at the cost of the defendant.
Harm to the environment : Harm to the survival of the affected species	While the orangutan may be reintroduced into a semi-wild population, they cannot be reintroduced into their original wild population. As a result, there is still ongoing harm to survival of the affected population and species as a result removal of individual. In addition, the reintroduction of orangutan takes a long time.	Government agencies	May act on behalf of the environment. It may propose a claim for remedies that involve compensation for the costs of undertaking actions to remedy this harm. Alternatively, it could instruct the defendant to undertake remedial action themselves, or order a third-party (e.g., NGO, government agency) to conduct such action.
		Civil organization	May act on behalf of the environment, but may not claim financial compensation for such harm. It may propose a claim for the defendant to undertake remedial actions, or ask the court to order a third party (e.g., government agency, other NGO) to undertake the remedial actions at the cost of the defendant.
Harm to the environment : Public	When Orangutan numbers in the wild decrease, local	Individuals acting collectively	May act on behalf of their own interests, proposing remedial actions for the reduced socio-cultural benefits experienced by their

ecosystem goods and services	residents have fewer encounters with these species and experience in a reduction local socio-cultural benefits that it gets from the environment.		community.
		Civil society group	Civil society can act on behalf of the environment and can claim for remedies to the environment, including goods and services it provides, but not focused on human wellbeing only (i.e. the environment's interests are the priority)
		Government agency	Has standing if it is clearly of public value (rather than private)
Harm associated with the extraordinary burdens of undertaking legal action	The investigation, litigation and hiring of expert witnesses involves time and financial resource, whether, conducted by an environmental civil society group,, individual or government.	Civil society organization	They are limited to claiming extraordinary expenses, but not core expenses associated with undertaking investigations or hiring lawyers that are undertaken voluntarily (this is not the same in all countries) or are a core part of the government's function.
		Individuals, acting individually or collectively	
		Government agency	

Defendants' liabilities for remedies

In Indonesia, as in most countries, there are two types of legal subjects that can be held liable for environmental harm. Individuals are the people who, either individually or collectively, can be held liable for their actions that cause harm. This might include actions such as hunting, transporting, smuggling, trading, keeping or possessing protected species; actions that cause harm to habitat and biodiversity therein, or actions that finance any of these types of actions. Liable legal subjects can also include legal entities such as corporations, which can be held liable for the harm separately from individual(s) who run the corporation. These might include legal entities such as a pet shop that trades protected wildlife, a zoo that illegally possesses and/or keeps protected species, or a corporation responsible for burning that harms habitat and/or a protected species.

Multiple defendants

Harmful actions, such as wildlife trade, often involve more than one party (e.g., hunter, trader, consumer, etc.), sometimes even acting as organised criminal groups. This group nature of the harm means we need to consider whether and how multiple entities can or should be sued jointly.

In principle, the plaintiff should sue all responsible parties, and these are referred to as defendant I, defendant II, etc. If the plaintiff has evidence demonstrating participation of any other parties in the illegal harm, then they must be reflected in the lawsuit. If the plaintiff fails to list these defendants, then this is an '*error in persona*'. If this evidence is not available, however, then the plaintiff has a right to sue whatever entities are known.

Where multiple defendants are identified, their liability for harm can be shared in several ways:

- Joint and several liability: Harm to biodiversity could be caused by several actions of different parties. All parties can be held collectively responsible for harm, then it is the obligation of the defendants to sort out the apportionment among them
- Proportionate liability: Similar to market share liability, each defendant has different liability according to their role in causing harm. This is particularly relevant where small-scale actors are involved (e.g., hired hunter). While they would still be listed as a defendant, they might carry proportionally much less liability than other defendants (e.g., the trader who hired them).

Co-defendant(s)

Efforts to remedy biodiversity harm also often involve third parties, typically government agencies legally responsible for the injured species and habitats.. Even if they themselves are not in violation of the law, they maybe ordered by the court to help execute the claim, such as by using resources recovered from the defendant to undertake restoration; supervising the defendant's actions; providing data, etc. In order for this to happen, they need to be listed as co-defendants on the case. Although co-defendants are usually government agencies, a plaintiff can request that the court order the government co-defendant to engage in public participation, including involving environmental civil society and community organisations in the implementing the remedies. The co-defendant(s) concept is not regulated in Indonesia's civil procedural law, but the concept is acknowledged through jurisprudence (e.g., No. 201 K/SIP/1974; No. 1642K/Pdt/2004).

Intervenor

Party that is not included as a party in the beginning of the case, but feels they have interest in the case, can file a request to the court to be included as an intervenor in the case. The intervenor can act for the plaintiff or defendant.

Orangutan Example 6: Defendants in the orangutan case

In the illustration of the case of orangutan in Borneo, the plaintiff may claim their remedies from multiple defendants.

Role	Defendants	Liability
Multiple defendants	Defendant I. Illegal trader	In this case, the trader is the primary defendant and could be sued individually. However, the hunter may be liable if the evidence for his role becomes available.
	Defendant II. Hunter	The hunter and illegal trader could potentially share their liability, jointly or proportionately. For example, because the hunter had significantly less potential to benefit economically than the commercial trader, then they may be held for a proportionately smaller part of the liability.
Co-defendants	Government Conservation Agency	The government conservation agencies could serve as co-defendant, ordered by the court to execute the remedy. In particular, they might be involved in restoration, such as reintroduction and habitat restoration to increase the wild orangutan population. In implementing the remedy, the Government Conservation Agency might appoint an environmental civil society organisation with expertise in orangutan conservation to assist with implementing the remedy.
	. Orangutan conservation organisationNGO	The civil society group NGO could be named as a co-defendant, based on their particular expertise related to this species, to undertake specific actions in the order, such as related to monitoring. They can also be named a co-defendant to undertake conservation education about orangutan, building on their prior work.

6. EXECUTION: ENSURING COURT ORDERS DELIVER REMEDIES ON-THE-GROUND

Even once a court ruling has been made, remedies are contingent on the actual execution of what the court has ordered. This typically includes the payment of monies, and the undertaking of specific remedial actions. In many countries, including Indonesia, execution of the remedial actions should be undertaken by the defendant who caused the harm, subject to the court-ordered standards and that the recovery criteria are agreed upon by the plaintiff. This approach to execution can help shift the focus from simply "paying to pollute", to one focused on actual engagement with long-term restoration efforts. However, in the environment sector, defendant may lack the technical skills to undertake some remedial actions (e.g., rehabilitation). In these cases, they can pay for other parties (e.g., government agency, NGO) to undertake the remedial actions.

Common challenges to the execution of court orders include:

- Remedies demanded by the plaintiff are too general or unclear, which makes them difficult to execute, or makes it to determine whether it has been executed properly;
- Defendant does not have, or claims not to have, enough money to deliver what has been ordered by the court;
- Environmental remedies often require long-term interventions, while civil courts are traditionally familiar with orders that require one-time actions (e.g., payment), and
- Ensuring transparency in the management of monies paid by the defendant to ensure they result in remedial actions.
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To tackle these challenges, several strategies that can be applied (depending on jurisdictional rules) are:

- Providing specific damage claims, including proposed restoration plans (see Section 4). that include clear step-by-step actions and timelines;
- Ensuring court orders include monitoring and evaluation to ensure the remedies are delivered;
- Requesting that the court consider establishing a trust fund to manage resources for the execution of the remedial actions in a specific case;
- Publication of the court order details to the public, including full restoration plans, to ensure transparency and accountability;
- Use of asset tracing of the defendant(s) to evaluate ability to pay;
- Use of collateral confiscation from defendants in order to ensure their ability to meet obligations ordered by the court
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- Creating a schedule for payments in installments;

CONCLUSIONS

Civil liability suits for environmental harm are not a ‘silver bullet’ for addressing environmental challenges or the threats facing threatened species. However, alongside traditional criminal responses to environmental harm, lawsuits represent an additional, important and public strategy for responding to some of our most harmful environmental cases. Notably, they can enable remedies, deliver strong deterrence effects, and send important social signals about the actual impacts of environmental harm. This guide provides ideas and technical insights for how government agencies, citizens and civil society could use existing laws in new ways.

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