# **Ecological justice in environmental criminal sanctions for corporations in Indonesia: Problems and Solution**



E-ISSN: 3031-7045

P-ISSN: 3031-7215

Rian Saputra a,1,\*, Albertus Usada b,2, Muhammad Saiful Islam c,3

- <sup>a</sup> Faculty of Law, Universitas Slamet Riyadi, Surakarta, Indonesia
- <sup>b</sup> Supreme Court of Indonesia, Jakarta, Indonesia
- <sup>c</sup> Faculty of Politic, Al-Mustafa International University, Qom, Moallem, Iran
- \* corresponding author: riansaputra@unisri.ac.id

#### Article Info

Received: 16 December 2023 Revised: 27 February 2024 Accepted: 16 March 2024

#### **Keywords:**

Ecological Justice; Legal Certainty; Corporation; Environmental Restoration.

#### Abstract

This study examines the ecological justice approach to imposing criminal sanctions on corporations in Indonesia for environmental crimes. The author also discusses the challenges associated with implementing this approach and aims to explain the measures and principles involved in regulating sanctions for environmental crimes committed by corporations while ensuring a balance between ecological justice and legal certainty. This study employs a normative legal research methodology, utilising a case-based approach, a statutory approach, and a conceptual approach. The research findings indicate that the regulation of fines for environmental restoration has implemented an ecological justice strategy focused on safeguarding the environment. Nevertheless, there are concerns regarding legal certainty in addressing the balance between ecological justice and legal certainty. This can be achieved through various means, including a. incorporating effective measures and specific types of improvement into criminal sanctions for environmental restoration and b. prioritising additional criminal sanctions for environmental restoration as the primary form of punishment while taking into account the importance of legal certainty.

This is an open-access article under the CC BY-SA 4.0 license



#### 1. Introduction

Environmental concerns have gained significant prominence in the past decade. The correlation between globalisation in many sectors and the emergence of environmental concerns has been established in recent times. Environmental degradation and devastation frequently arise throughout human and corporate development or output.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Kuo Zhou and others, 'The Power of Anti-Corruption in Environmental Innovation: Evidence from a Quasi-Natural Experiment in China', *Technological Forecasting and Social Change*, 182 (2022), 121831 <a href="https://doi.org/https://doi.org/10.1016/j.techfore.2022.121831">https://doi.org/https://doi.org/10.1016/j.techfore.2022.121831</a>>.



iournaloflawandjustice@gmail.com

The environment, functioning as an ecosystem, possesses a mechanism that is capable of preserving its equilibrium. The ecosystem possesses inherent mechanisms to restore balance in response to any disturbances, as it is equipped with biological cycles that facilitate self-repair. Nevertheless, it is an undeniable reality that a considerable amount of environmental degradation exists that is incapable of self-restoration. The harm is a result of garbage that contaminates the land, water, and air.<sup>2</sup>

Environmental issues can be effectively prevented and managed in a constitutional democracy by establishing legislative regulations that consider environmental sustainability alongside social, political, and economic factors.<sup>3</sup> Legislation plays a crucial role in redirecting the management of the environment and natural resources, which has relied excessively on harmful exploitation. In Indonesia, the Constitution of the Republic of Indonesia 1945 (UUD 1945) guarantees the creation of legislation and regulations, particularly those related to the environment. The constitution regulates the environment in two aspects: firstly, as part of human rights, as stated in Article 28 H paragraph (1), and secondly, as a principle for implementing an environmentally sound national economy, as stated in Article 33 paragraph (4).4

Jimly Asshiddiqie explains that the Indonesian constitution exhibits this particular structure, which acknowledges not only the authority of the people and the principle of legal governance but also the concept of environmental authority. The two articles provide tangible proof of the incorporation of sustainable development ideals into the 1945 Constitution. The Constitutional Court of the Republic of Indonesia (MK RI) has the authority to declare any laws related to exploitative development that disregard environmental sustainability and sustainability unconstitutional, as stated in the 1945 Constitution. This power is granted to the court by Law Number 24 of 2003 concerning the Constitutional Court. Meanwhile, the Supreme Court of the Republic of Indonesia (MA RI) can evaluate policies in the form of laws and regulations under the Law. This evaluation is done in accordance with Law Number 14 of 1985, as amended by Law Number 3 of 2009, which pertains to the Supreme Court of the Republic of Indonesia. Additionally, the Supreme Court of the Republic of Indonesia Regulation Number 1 of

<sup>2</sup> Simone Athayde and others, 'Viewpoint: The Far-Reaching Dangers of Rolling Back Environmental Licensing and Impact Assessment Legislation in Brazil', Environmental Impact Assessment Review,

94. August 2021 (2022) <a href="https://doi.org/10.1016/j.eiar.2022.106742">https://doi.org/10.1016/j.eiar.2022.106742</a>.

<sup>&</sup>lt;sup>3</sup> Hilaire Tegnan and others, 'Mining Corruption and Environmental Degradation in Indonesia: Critical Legal Issues', Bestuur, 9.2 (2021), 90–100 <a href="https://doi.org/10.20961/bestuur.v9i2.55219">https://doi.org/10.20961/bestuur.v9i2.55219</a>>.

Indah Nur Shanty Saleh and Bita Gadsia Spaltani, 'Environmental Judge Certification in an Effort to Realize the Green Legislation Concept in Indonesia', Law and Justice, 6.1 (2021), 1-18 <a href="https://doi.org/10.23917/laj.v6i1.13695">https://doi.org/10.23917/laj.v6i1.13695</a>>.

2011 addresses the rights to test the substance of these policies.<sup>5</sup>

Between September 1997 and March 1998, at the Yogyakarta Locomotive Depot of PT Kereta Api Indonesia (Persero) in Jalan Suryonegaran No. 20 Bumijo, Jetis District, Yogyakarta City, there was a daily loss of roughly 300 litres of diesel oil. Upon examination and research, it was determined that the oil loss occurred due to a diesel oil tank that was leaking. As a result, the diesel oil seeped into the ground and poisoned the healthy water of residents living near the Yogyakarta Locomotive Dipo diesel oil tank. The Yogyakarta Environmental Health Technical Institute conducted an investigation into this incident by analysing samples of healthy water owned by the affected residents. The examination revealed that the healthy water was contaminated with diesel oil, as indicated in the examination result letter number PM.07.04.7.849 dated 24 May 2003.

The Yogyakarta District Court, in its final ruling on the Criminal Case of Environmental Pollution at the Yogyakarta Locomotive Depot (Case Number 129/PID.B/2004/PN.YK, dated 22 June 2005), has mandated PT Kereta Api Indonesia (Persero) to remediate the contaminated environment and restore it to its original state, fulfilling its intended purpose. PT Kereta Api Indonesia (Persero) has taken several measures to address the consequences of diesel fuel pollution from the Yogyakarta Locomotive Depot, as mandated by the Court Decision. These measures include regular weekend drainage of affected residents' wells, collaboration with relevant agencies to remediate environmental pollution, and ongoing provision of compensation for clean water to residents whose wells are contaminated with diesel oil.

Within the scope of this research, there are several unresolved questions pertaining to the supplementary criminal penalties in the PPLH Law concerning the restoration of environmental functions. Specifically, there is a lack of clarification regarding the meaning of "the obligation to repair the consequences of the criminal act committed." Consequently, the question arises as to what precisely constitutes the criterion or measure for the termination of this sanction. The author's perspective is also challenged by many groups, like Subaidah Ratna Juita, who questions it in her essay titled "Optimising Legal Protection for Victims of Environmental Crimes Through the Concept of Sustainable Development". In her work, Juita argues that:<sup>6</sup>

<sup>&</sup>lt;sup>5</sup> Indah Dwi Qurbani, Ilham Dwi Rafiqi, and Ilham Dwi Rafiqi, 'Prospective Green Constitution in New and Renewable Energy Regulation', *Legality: Jurnal Ilmiah Hukum*, 30.1 (2022), 68–87 <a href="https://doi.org/10.22219/ljih.v30i1.18289">https://doi.org/10.22219/ljih.v30i1.18289</a>.

Subaidah Ratna Juita, Optimalisasi Perlindungan Hukum Terhadap Korban Tindak Pidana Lingkungan Hidup Melalui Konsep Sustainable Development. *Jurnal Paradigma Hukum Pembangunan* Vol 02 Issue 01 Tahun 2018. hlm 80

"The PPLH Law specifically governs supplementary criminal penalties applicable to businesses as outlined in Article 119 letter (c), which pertains to the duty of rectifying the aftermath of committed criminal acts. The meaning of "the obligation to repair the consequences of the criminal offence committed" is not clarified. The clarification of the law merely states that it is "quite clear," without providing any further explanation. However, it is necessary for such provisions to be accompanied by an explanation, such as specifying who is responsible for the repairs, the nature of the repairs required, and any other relevant requirements.".

In the opening of the text, the author briefly discusses the role of environmental function restoration sanctions as an extra kind of punishment for firms that commit environmental crimes. In legal terminology, the term "sanction" is occasionally used to categorise several aspects of punishment that are employed to uphold the law. These aspects include administrative sanctions, civil sanctions, and criminal sanctions, which are often grouped within a single chapter or section. The concept of "criminal sanction" can be challenging to grasp when the term "sanction" is understood solely as "punishment," as it would imply "criminal punishment." The complexity further increases if the adjective "criminal" is also taken as "punishment," resulting in a redundant phrase, "punishment punishment." In the context of English legal terminology, the term "sanction" refers to the penalty or punishment that is imposed in order to ensure compliance with the law. In Dutch, the term "sanctie" refers to both a "agreement" and a "coercive measure used as a punishment for violating an agreement".

The topic of addressing criminal offences through the application of criminal sanctions has been extensively debated among specialists in criminal law due to its inherent interest as it pertains to the nature of the criminal sanction, which is considered the last resort. The legislator's determination of punishment is a policy that pertains to the criminalization or penalization of conduct that was previously not considered a crime. Another issue pertains to criminal law, namely the imposition of criminal fines. This aspect has undergone significant evolution, extending its scope beyond individuals

<sup>&</sup>lt;sup>7</sup> Hariman Satria, 'Penerapan Pidana Tambahan Dalam Pertanggungjawaban Pidana Korporasi Pada Tindak Pidana Lingkungan Hidup', *Jurnal Yudisial*, 10.2 (2017), 155 <a href="https://doi.org/10.29123/jy.v10i2.18">https://doi.org/10.29123/jy.v10i2.18</a>>.

<sup>&</sup>lt;sup>8</sup> Dietrich Earnhart and Sandra Rousseau, 'Are Lawyers Worth the Cost? Legal Counsel in Environmental Criminal Court Cases', *International Review of Law and Economics*, 60 (2019), 105857 <a href="https://doi.org/https://doi.org/10.1016/j.irle.2019.105857">https://doi.org/https://doi.org/10.1016/j.irle.2019.105857</a>.

<sup>&</sup>lt;sup>9</sup> Leandro Mancano and Deborah Russo, 'Punishment of Criminals', in *Encyclopedia of Violence, Peace, & Conflict (Third Edition)*, ed. by Lester R Kurtz, Third Edit (Oxford: Academic Press, 2022), pp. 539–51 <a href="https://doi.org/https://doi.org/10.1016/B978-0-12-820195-4.00160-6">https://doi.org/https://doi.org/10.1016/B978-0-12-820195-4.00160-6</a>>.

(natural persons) to encompass businesses as well.<sup>10</sup>

The issue is not only in the implementation of the application but also in the matter of criminal culpability arising from the potential consequences, such as a substantial fine or the termination of the corporation's licence, if it is penalised. The frustration is justified as the repercussions resulting from corporations engaging in criminal misconduct are typically highly harmful to society. Criminal matters pertain to policies concerning the establishment of penalties and perspectives on the objective of retribution. The formulation of sanctions is closely intertwined with the issue of overall aims to be accomplished by criminal policy. Regarding the implementation of additional criminal penalties for corporations to restore environmental functions, there is a need to simplify the application process. The author proposes several measures to streamline the application of these sanctions for corporations that commit environmental crimes, which will be explained below.

Nevertheless, we desire to examine the matter from the standpoint of environmental conservation and the principles of sustainability. In that case, the imposition of criminal penalties on firms for environmental remediation represents a significant advancement in Indonesia's commitment to demonstrate the high priority placed on environmental protection. Nevertheless, the legislation should uphold the issue of legal certainty. The objective of this research is to elucidate the idea of ecological justice in relation to the imposition of penalties on firms involved in environmental crimes. Moreover, this research also delineates the fundamental issues pertaining to ecological justice in the context of criminal penalties imposed on corporations for committing environmental offences. Next, let us explore the optimal approach to implementing ecological justice in criminal penalties for corporate environmental offences in the future, as outlined in Law Number 32 of 2009 on Environmental Protection and Management (referred to as the PPLH Law).

### 2. Research Methods

The research methodology employed in this work is normative juridical, which involves

Januar Rahadian and Silas Oghenemaro, 'Monodualistic and Pluralistic Punishment Politics in Criminal Code Reform: Lessons from Indonesia', *Journal of Law, Environmental and Justice*, 1.3 (2023), 225–43 <a href="https://doi.org/10.62264/jlej.v1i3.17">https://doi.org/10.62264/jlej.v1i3.17</a>>.

<sup>&</sup>lt;sup>11</sup> Marcos Alan Ferreira and Anna Beatriz Gonçalves, 'Criminal Governance and Systems of Parallel Justice: Practice and Implications in Brazilian Urban Peripheries', *International Journal of Law, Crime and Justice*, 68 (2022), 100519 <a href="https://doi.org/10.1016/j.ijlcj.2021.100519">https://doi.org/10.1016/j.ijlcj.2021.100519</a>>.

<sup>&</sup>lt;sup>12</sup> Arlie Loughnan and Tony Ward, 'Emergent Authority and Expert Knowledge: Psychiatry and Criminal Responsibility in the UK', *International Journal of Law and Psychiatry*, 37.1 (2014), 25–36 <a href="https://doi.org/10.1016/j.ijlp.2013.10.002">https://doi.org/10.1016/j.ijlp.2013.10.002</a>>.

the systematic exploration of legal rules, principles, and doctrines in order to address the legal issues under consideration.<sup>13</sup> The normative legal research method employs the technique of document study or literature study for collecting legal materials.<sup>14</sup> The research employs three distinct approaches: the legislative approach, the conceptual method, and the case approach specifically, it will examine the principles and concepts in the evolution of environmental legislation and the PPLH legislation.

#### 3. Results and Discussion

## **Ecological justice in Indonesian corporate criminal sanctions for environmental restoration: Practice issues**

Upon reviewing the Yogyakarta District Court Decision Number 129/Pid.B/2004/PN. YK, it is noted that PT Kereta Api Indonesia (Persero) was instructed to undertake environmental restoration as an additional criminal penalty. However, the decision does not specify the criteria for determining the successful completion of the environmental restoration. The author draws a parallel between the criminal act of environmental damage caused by corporations, specifically forest and land fires. In this context, if the standard for restoration is the complete recovery of environmental functions to a usable state, reforestation alone cannot serve as an adequate measure. It is necessary to take into account the loss of flora and fauna resulting from the criminal act. Therefore, the question arises: How can the restoration of environmental functions be achieved?

The legal certainty of the increased criminal sanctions in the PPLH Law is currently in doubt. It is well recognised that modern law has a trait of demanding legal certainty as a fundamental element for its progress, which is often associated with the concepts of Legism and Positivism.<sup>15</sup> Despite facing several challenges along with its growth, it is undeniable that the evidence clearly demonstrates that legal positivism is the dominant force in the advancement of global law. Legal positivism aims to eliminate conjecture on the metaphysical elements and the essence of law. The background pertains to an endeavour to restrict the

Muhammad Khalif, FX Hastowo Broto Laksito, and Andriamalala Laurent, 'Role and Position of Indonesian Medical Disciplinary Honour Council: Fair Medical Dispute Resolution', *Journal of Law, Environmental and Justice*, 1.3 (2023), 185–201 <a href="https://doi.org/10.62264/jlej.v1i3.15">https://doi.org/10.62264/jlej.v1i3.15</a>>.

-

Rian Saputra, M Zaid, and Devi Triasari, 'Executability of the Constitutional Court's Formal Testing Decision: Indonesia's Omnibus Law Review', *Journal of Law, Environmental and Justice*, 1.3 (2023), 244–58 <a href="https://doi.org/10.62264/jlej.v1i3.18">https://doi.org/10.62264/jlej.v1i3.18</a>>.

<sup>&</sup>lt;sup>15</sup> Suwari Akhmaddhian, 'Discourse on Creating a Special Environmental Court in Indonesia to Resolve Environmental Disputes', *Bestuur*, 8.2 (2020), 129 <a href="https://doi.org/10.20961/bestuur.v8i2.42774">https://doi.org/10.20961/bestuur.v8i2.42774</a>.

legal realm from all factors that lie beyond the scope of the law but have an impact on it. <sup>16</sup> The prevailing normative framework is demonstrated through the State's authority to enforce laws using its full range of punishments. The correlation between law and morals is acknowledged by legal positivism, highlighting the significant interconnection between the two in individuals' lives despite the absence of a direct observable relationship.

There is a perspective that argues for the interconnectedness of law and morals, as they both dictate the specific provisions of human-made laws (positive law). Moral law and positive law are distinct from one another since each possesses its domain of applicability. However, moral law, being superior, establishes the legitimacy of positive law. While positive law governs exterior activities, internal actions are regulated by another set of norms known as moral law or rules of decency. If positive law is responsible for organising the peace and tranquillity of human life in society, then moral law indeed contributes to the improvement of human life. 18

Within the scope of this study, the primary focus lies in analysing sanctions aimed at restoring environmental functions without the presence of specific criteria or indicators of effectiveness. The author, as mentioned earlier in the discussion, highlights the significance of legal certainty in this context. It is worth noting that legal certainty is a fundamental attribute of contemporary law. In this instance, the law is responsible for establishing legal certainty since it seeks to establish a sense of organisation within society. Legal certainty is an inherent attribute of the law, particularly in relation to written legislation. Fence M. Wantu argues that the absence of legal certainty undermines the significance of law, as it ceases to serve as a universal behavioural guide.<sup>19</sup>

Legal certainty refers to the degree of clarity and precision in legal standards, which enables them to serve as reliable instructions for individuals who are subject to these regulations. *Certainty* can be defined as the presence of clarity and firmness in the implementation of laws within society. This is done in order to minimise the occurrence of

Haitao Wu and others, 'Does Environmental Pollution Promote China's Crime Rate? A New Perspective through Government Official Corruption', Structural Change and Economic Dynamics, 57 (2021), 292–307 <a href="https://doi.org/https://doi.org/10.1016/j.strueco.2021.04.006">https://doi.org/https://doi.org/10.1016/j.strueco.2021.04.006</a>>.

<sup>&</sup>lt;sup>17</sup> Eve Bratman and Cristiane Bená Dias, 'Development Blind Spots and Environmental Impact Assessment: Tensions between Policy, Law and Practice in Brazil's Xingu River Basin', *Environmental Impact Assessment Review*, 70.March 2017 (2018), 1–10 <a href="https://doi.org/10.1016/j.eiar.2018.02.001">https://doi.org/10.1016/j.eiar.2018.02.001</a>>.

Pedi Obani and Joyeeta Gupta, 'Legal Pluralism in the Area of Human Rights: Water and Sanitation', Current Opinion in Environmental Sustainability, 11 (2014), 63–70 <a href="https://doi.org/https://doi.org/10.1016/j.cosust.2014.09.014">https://doi.org/https://doi.org/10.1016/j.cosust.2014.09.014</a>>.

Lego Karjoko, I Gusti Ayu Ketut Rachmi Handayani, and Willy Naresta Hanum, 'Legal Policy of Old Wells Petroleum Mining Management Based on Social Justice in Realising Energy Sovereignty', Sriwijaya Law Review, 6.2 (2022), 286–303 <a href="https://doi.org/10.28946/slrev.Vol6.Iss2">https://doi.org/10.28946/slrev.Vol6.Iss2</a>. 1745.pp286-303>.

numerous misinterpretations. Van Apeldoorn defines *legal certainty* as the ability to establish specific matters through the application of law. Legal certainty refers to the assurance that the law will be enforced, allowing individuals to exercise their rights as defined by the law and ensuring that decisions may be executed. Legal certainty refers to the enforceable safeguard against arbitrary conduct, ensuring that individuals can acquire what is rightfully expected in specific circumstances.<sup>20</sup>

Linguistically, certainty is derived from the term "pasti," which conveys the notions of being unchanging, necessary, and indisputable. According to the Big Indonesian Dictionary, certainty refers to a state or matter that is already fixed. On the other hand, law is a legal mechanism implemented by a country to ensure the rights and obligations of its citizens. Therefore, *legal certainty* can be defined as a provision or mechanism established by a country's legal system to guarantee the rights and obligations of every citizen. Legal certainty pertains to the establishment of a definitive, unambiguous, and uniform legal framework that is immune to the effect of subjective factors in its execution. According to Lawrence M. Friedman, a Professor at Stanford University, in order to achieve "legal certainty," three essential components must be present: legal substance, legal apparatus, and legal culture.<sup>21</sup>

Sudikno Mertokusumo emphasised that legal certainty is an essential requirement in law enforcement, ensuring protection against arbitrary measures. It ensures that individuals can obtain the desired outcomes in certain circumstances. Maria S.W. Sumardjono explains that legal certainty entails the normative requirement of having rules and regulations that are functional and facilitate their enforcement. From an empirical standpoint, it is crucial to regularly and systematically enforce rules and regulations with the assistance of appropriate human resources.<sup>22</sup>

A rule is established and announced with certainty due to its straightforward and rational regulation. Precisely, clarity refers to the absence of ambiguity or alternative interpretations. In contrast, logicality implies the establishment of a coherent system of standards that do not contradict or generate conflicts with other norms. Norm conflicts resulting from ambiguity in rules manifest as norm concentration, norm reduction, or norm distortion. True legal certainty is achieved when laws and regulations are effectively enforced in conformity with

<sup>21</sup> Rian Saputra and others, 'Reform Regulation of Novum in Criminal Judges in an Effort to Provide Legal Certainty', *JILS* (*Journal of Indonesian Legal Studies*), 6.2 (2021), 437–82 <a href="https://doi.org/10.15294/jils.v6i2.51371">https://doi.org/10.15294/jils.v6i2.51371</a>.

Pujiyono Suwadi and others, 'Legal Comparison of the Use of Telemedicine between Indonesia and the United States', *International Journal of Human Rights in Healthcare*, ahead-of-p.ahead-of-print (2022) <a href="https://doi.org/10.1108/IJHRH-04-2022-0032">https://doi.org/10.1108/IJHRH-04-2022-0032</a>>.

<sup>&</sup>lt;sup>22</sup> Dona Budi Kharisma, 'Urgency of Financial Technology (Fintech) Laws in Indonesia', *International Journal of Law and Management*, 63.3 (2021), 320–31 <a href="https://doi.org/10.1108/IJLMA-08-2020-0233">https://doi.org/10.1108/IJLMA-08-2020-0233</a>.

legal principles and standards. As stated by Bisdan sigalingging:<sup>23</sup>

"The alignment between the certainty of legal substance and the certainty of law enforcement is crucial. Legal certainty should not solely rely on the existence of laws but instead on the proper execution of these laws in accordance with the principles and norms of law in order to uphold legal justice".

When considering the doctrine of modern law, it is essential to address legal certainty, which is one of the critical elements. In this context, it is logical and relevant to incorporate additional criminal sanctions that aim to restore environmental functions to their original state. However, it is crucial to ensure that these sanctions are implemented in a way that upholds legal certainty. This can be achieved by establishing clear parameters and measures to evaluate the effectiveness of these sanctions. Moreover, imposing supplementary penalties on companies for environmental criminal offences in the form of reparations for their illegal actions can be considered a manifestation of "ecological justice". The ideology of ecological justice, influenced by I Gusti Ayu Ketut Rachmi Handayani's beliefs, emphasises that ecological justice is closely linked to the concept of sustainability for both current and future generations. The notion of sustainable development also aims to achieve fair and impartial justice for both current and future generations.

W. Pedersen outlines three elements of Ecological justice: the precautionary and preventative principles, the polluter pays principle, and the sustainable development premise. Baxter contends that the discourse on ecological justice and the problem of ecological extinction should serve as a wake-up call for individuals to consider the plausibility of a worldview that embraces these moral concerns. This perspective strives to establish the most all-encompassing moral framework attainable rather than imposing limitations on moral principles. Factors should be taken into account solely for specific segments of organic existence. The objective of ecological justice theory should involve contributing to endeavours aimed at averting significant extinctions.<sup>26</sup> Thus, according to these descriptions, the imposition of criminal penalties on corporations for restoring environmental functions in

<sup>24</sup> Chukwumerije Okereke and Mark Charlesworth, *Environmental and Ecological Justice, Advances in International Environmental Politics*, 2014 <a href="https://doi.org/10.1057/9781137338976">https://doi.org/10.1057/9781137338976</a>.

-

Tom Daems, 'Compatible Victims? Prison Overcrowding and Penal Reform in Belgium', *International Journal of Law, Crime and Justice*, 36.3 (2008), 153–67 <a href="https://doi.org/https://doi.org/10.1016/j.ijlcj.2008.04.001">https://doi.org/https://doi.org/10.1016/j.ijlcj.2008.04.001</a>>.

Prijo Dwi Atmanto and others, 'The Role of Ecological Justice on the Buffer Zone Management in Indonesia: Mediating Role of Satisfied and Motivated People Prijo Dwi Atmanto Gusti Ayu Ketut Rachmi Handayani Hartiwiningsih Lego Karjoko Abdul Kadir Jaelani', Croatian International Relation Review, 28.90 (2022), 348–66 <a href="https://doi.org/10.2478/CIRR-2022-0035">https://doi.org/10.2478/CIRR-2022-0035</a>>.

<sup>&</sup>lt;sup>26</sup> Jamie Baxter, Kristine Greenlaw, Explaining perceptions of a technological environmental hazard using comparative analysis, *The Canadian Geographer*, Vol 49 No 1, 2005

cases of environmental crimes, as stipulated in the Law on Environmental Protection and Management, is a measure adopted in Indonesian legal policy to prevent environmental damage and ensure that the penalties align with the objective of environmental protection.

#### Corporations environmental crime sanctions: ecological justice and legal certainty.

Criminal law, in the pursuit of its objectives, employs not just punitive measures but also occasionally resorts to activities. An action can serve as a sanction, but it does not possess a retaliatory character. The primary objective of taking action is to uphold societal security by mitigating the threat posed by individuals who are deemed perilous and are apprehended to engage in criminal activities.<sup>27</sup> Action penalties deviate from the fundamental concept of "what the punishment is for" in order to be more proactive in deterring the individuals responsible for the action. The primary objective of action sanctions is to assist the culprit in order to facilitate their transformation. Action and punishment are distinct in their objectives. Action serves a social purpose, whereas punishment focuses on administering consequences for the committed crime. Furthermore, punitive measures arise from the fundamental concept of safeguarding society and rehabilitating or addressing the wrongdoer.<sup>28</sup> The primary objective of implementing punishments is to serve an educational function.

Furthermore, when considering the notion of criminal aggravation with a focus on environmental preservation, it raises concerns about the suitability of including "confiscation of profits derived from criminal activities, "partial or complete closure of the business premises and/or operations," remediation of the consequences of criminal acts, compulsory performance of neglected obligations," and/or "placing the company under supervision" as supplementary penalties in the PPLH Law.<sup>29</sup> These sorts of penalties are more severe than incarceration, confinement, and fines in terms of quality. For instance, if an individual is penalised with the responsibility of rectifying all the repercussions of a criminal act due to its demonstrated severe harm to the environment, the expenses that need to be borne are significantly higher than being sentenced to a fine of 5 billion. Therefore, the sanctions stipulated in environmental laws and regulations should not be treated as a supplementary penalty but rather as an independent punitive measure. This would ensure that their implementation does not need to be combined with the primary punishment, such as a

-

<sup>&</sup>lt;sup>27</sup> Eran Itskovich and Roni Factor, 'Economic Inequality and Crime: The Role of Social Resistance', *Journal of Criminal Justice*, 86 (2023), 102065 <a href="https://doi.org/10.1016/j.jcrimjus.2023.102065">https://doi.org/10.1016/j.jcrimjus.2023.102065</a>.

<sup>&</sup>lt;sup>28</sup> Alexander Testa and Daniel Semenza, 'Criminal Offending and Health over the Life-Course: A Dual-Trajectory Approach', *Journal of Criminal Justice*, 68.February (2020), 101691 <a href="https://doi.org/10.1016/j.jcrimjus.2020.101691">https://doi.org/10.1016/j.jcrimjus.2020.101691</a>.

<sup>&</sup>lt;sup>29</sup> Rene Abcede and Weena Gera, 'Examining the Coherence of Legal Frameworks for Ecosystem Services toward Sustainable Mineral Development in the Association of Southeast Asian Nations', Ecosystem Services, 29 (2018), 228–39 <a href="https://doi.org/10.1016/j.ecoser.2017.04.003">https://doi.org/10.1016/j.ecoser.2017.04.003</a>>.

#### monetary fee.30

The debate surrounding the inclusion of environmental function restoration as an extra criminal penalty has been a longstanding topic of discussion. The PPLH Law governs many aspects related to environmental criminal crimes committed by enterprises.

- 1) Where an environmental criminal offence is committed by, for, or on behalf of a business entity, criminal prosecution and criminal sanctions shall be imposed on (a) the business entity and/or; (b) the person who gave the order to commit the criminal offence or the person who acted as the activity leader in the criminal offence.
- 2) If the environmental criminal offence is committed by a person who, by virtue of an employment relationship or by virtue of another relationship, acts within the scope of work of the business entity, the criminal sanction shall be imposed on the person who gave the order or the leader in the criminal offence regardless of whether the criminal offence is committed individually or jointly.
- 3) If criminal charges are brought against the person who orders or leads the criminal offence, the punishment in the form of imprisonment and fine shall be increased by one-third.
- 4) For criminal offences of legal entities, criminal sanctions shall be imposed on business entities represented by the management who are authorised to represent in and out of court in accordance with laws and regulations as functional actors.
- 5) Business entities may be subject to additional punishment or disciplinary action in the form of (a) forfeiture of profits obtained from criminal offences; (b) closure of all or part of the place of business and/or activities; (c) repair of the consequences of criminal offences; (d) obligation to do what is neglected without proper; and/or (e) placement of the company under guardianship for a maximum of 3 (three) years.<sup>31</sup>

The penalties for environmental criminal acts are explicitly defined in Law Number 32 Year 2009 on Environmental Protection and Management. Distinctive features of environmental criminal offences, as compared to regular criminal sanctions, include further penalties and additional investigations, among other factors: The regulation regulating the seizure of profits gained from criminal offences lacks precise guidelines concerning the advantages and purpose of the planned confiscation of profits. Additionally, the cessation of operations and/or closure of the establishment can be enforced by means of administrative penalties, such as the annulment of business permits by the State Administrative Court.<sup>32</sup>

Furthermore, the definition of repairs for criminal offences remains ambiguous,

<sup>&</sup>lt;sup>30</sup> Obani and Gupta.

Muhammad Natsir and Andi Rachmad, 'Penetapan Asas Kearifan Lokal Sebagai Kebijakan Pidana Dalam Pengelolaan Lingkungan Hidup Di Aceh', *Jurnal Magister Hukum Udayana (Udayana Master Law Journal)*, 7.4 (2018), 468 <a href="https://doi.org/10.24843/jmhu.2018.v07.i04.p05">https://doi.org/10.24843/jmhu.2018.v07.i04.p05</a>>.

<sup>&</sup>lt;sup>32</sup> Qurbani, Rafiqi, and Rafiqi.

particularly in cases of environmental damage, as the extent of such repairs can be incalculable and may overlap with obligations for environmental restoration under civil law enforcement.<sup>33</sup> Additionally, the obligation to rectify neglect without legal rights is challenging to define, as it becomes arduous to fully restore environmental functions to their original condition in cases of severe pollution or environmental damage. Furthermore, the imposition of guardianship on the company for a maximum duration of 3 years necessitates the appointment of an environmental manager. This individual is responsible for reinstating the corporation's environmental management function to its pre-pollution or destruction state.<sup>34</sup> Essentially, this supplementary penalty aims to ensure the uninterrupted operation of the company. However, the specific details and structure of this arrangement have yet to be explicitly defined in the legislation.

In this case, the author implies that the imposition of additional criminal penalties in the form of restoration for criminal offences, specifically the restoration of environmental functions resulting from a criminal offence, is proposed as a primary sanction. This goes beyond mere supplementary penalties.<sup>35</sup> However, it is essential to note that the extent and specifics of the restoration for the criminal offence must be clearly defined beforehand in order for the sanctions to be applicable and legally certain, as the author initially stated. The sanction of "repair of criminal offences" is a well-known penalty for environmental crimes. It is legislated explicitly as a means to address and rectify criminal violations committed in the environmental context.<sup>36</sup>

Under specific environmental laws, judges have the authority to enforce specific measures on convicted polluters. These measures may include the requirement to rectify the harm caused, such as through reparations for criminal acts.<sup>37</sup> The purpose of such actions is to prompt the offenders to acknowledge their wrongdoing and facilitate their personal growth towards becoming law-abiding individuals. Criminals who are sentenced to restore the

<sup>33</sup> Laurence L. Delina, 'Indigenous Environmental Defenders and the Legacy of Macli-Ing Dulag: Anti-Dam Dissent, Assassinations, and Protests in the Making of Philippine Energyscape', *Energy Research and Social Science*, 65.September 2019 (2020), 101463 <a href="https://doi.org/10.1016/j.erss.2020.101463">https://doi.org/10.1016/j.erss.2020.101463</a>>.

<sup>&</sup>lt;sup>34</sup> Deise Tatiane Bueno Miola and others, 'Silent Loss: Misapplication of an Environmental Law Compromises Conservation in a Brazilian Biodiversity Hotspot', *Perspectives in Ecology and Conservation*, 17.2 (2019), 84–89 <a href="https://doi.org/10.1016/j.pecon.2019.04.001">https://doi.org/10.1016/j.pecon.2019.04.001</a>>.

Mara Tignino and Christian Bréthaut, 'The Role of International Case Law in Implementing the Obligation Not to Cause Significant Harm', *International Environmental Agreements: Politics, Law and Economics*, 20.4 (2020), 631–48 <a href="https://doi.org/10.1007/s10784-020-09503-6">https://doi.org/10.1007/s10784-020-09503-6</a>>.

Luciana Gomes Barbosa, Maria Alice Santos Alves, and Carlos Eduardo Viveiros Grelle, 'Actions against Sustainability: Dismantling of the Environmental Policies in Brazil', *Land Use Policy*, 104.October 2020 (2021), 105384 <a href="https://doi.org/10.1016/j.landusepol.2021.105384">https://doi.org/10.1016/j.landusepol.2021.105384</a>.

Eric Rahmanul Hakim, 'Penegakan Hukum Lingkungan Indonesia Dalam Aspek Kepidanaan', *Media Keadilan: Jurnal Ilmu Hukum*, 11.1 (2020), 43 <a href="https://doi.org/10.31764/jmk.v11i1.1615">https://doi.org/10.31764/jmk.v11i1.1615</a>.

polluted or damaged environment due to their actions gain direct experience of the challenges involved in returning the environment to its original state prior to the offence.<sup>38</sup> This firsthand understanding of the negative consequences of their actions is intended to prompt the offenders to recognise their errors and make efforts to better themselves, thereby preventing the repetition of similar mistakes.<sup>39</sup>

In the UUUPPLH, action sanctions, which involve restoring the environmental condition affected by criminal conduct, are optional. The discretionary penalties can impede the execution of environmental preservation. The reason for this is that perpetrators of environmental crimes are not always subjected to remedial sanctions, which are precisely among the sanctions that should be prioritised. Remedial sanctions involve actions that directly aim to repair and restore the environment to its original state prior to the occurrence of the criminal offence, thus promoting environmental conservation. Hence, it is essential to impose remedial sanctions as a mandatory consequence of the criminal offence, with the aim of establishing a consistent system of punishment that prioritises environmental preservation when dealing with firms that engage in environmental crimes.

#### 4. Conclusion

In the future, the regulation of remedial sanctions for corporate criminal offences can be achieved through various means. These include: a) implementing criminal sanctions for environmental restoration that incorporate effective measures and various forms of improvement, and b) making environmental restoration the primary criminal sanction, with due consideration for legal certainty and other relevant factors, in order to strike a balance between ecological justice and legal certainty. It is crucial to establish a consistent pattern of punishment for firms that commit environmental crimes and prioritise environmental conservation. This will help ensure legal certainty.

#### 5. References

Abcede, Rene, and Weena Gera, 'Examining the Coherence of Legal Frameworks for Ecosystem Services toward Sustainable Mineral Development in the Association of Southeast Asian Nations', *Ecosystem Services*, 29 (2018), 228–39 <a href="https://doi.org/https://doi.org/10.1016/j.ecoser.2017.04.003">https://doi.org/https://doi.org/10.1016/j.ecoser.2017.04.003</a>>

Akhmaddhian, Suwari, 'Discourse on Creating a Special Environmental Court in Indonesia to

Dimitris Stevis, 'Whose Ecological Justice?', Strategies: Journal of Theory, Culture & Politics, 13.1 (2000), 63–76 <a href="https://doi.org/10.1080/10402130050007520">https://doi.org/10.1080/10402130050007520</a>.

Saputra, et.al: Ecological justice in environmental criminal sanctions.......

<sup>&</sup>lt;sup>39</sup> Margarita Ignatyeva, Vera Yurak, and Natalia Pustokhina, 'Recultivation of Post-Mining Disturbed Land: Review of Content and Comparative Law and Feasibility Study', *Resources*, 9.6 (2020) <a href="https://doi.org/10.3390/RESOURCES9060073">https://doi.org/10.3390/RESOURCES9060073</a>.

- Resolve Environmental Disputes', *Bestuur*, 8.2 (2020), 129 <a href="https://doi.org/10.20961/bestuur.v8i2.42774">https://doi.org/10.20961/bestuur.v8i2.42774</a>>
- Athayde, Simone, Alberto Fonseca, Suely M.V.G. Araújo, Amarilis L.C.F. Gallardo, Evandro M. Moretto, and Luis E. Sánchez, 'Viewpoint: The Far-Reaching Dangers of Rolling Back Environmental Licensing and Impact Assessment Legislation in Brazil', Environmental Impact Assessment Review, 94.August 2021 (2022) <a href="https://doi.org/10.1016/j.eiar.2022.106742">https://doi.org/10.1016/j.eiar.2022.106742</a>
- Atmanto, Prijo Dwi, Gusti Ayu Ketut Rachmi Handayani, Hartiwiningsih, Lego Karjoko, and Abdul Kadir Jaelani, 'The Role of Ecological Justice on the Buffer Zone Management in Indonesia: Mediating Role of Satisfied and Motivated People Prijo Dwi Atmanto Gusti Ayu Ketut Rachmi Handayani Hartiwiningsih Lego Karjoko Abdul Kadir Jaelani', *Croatian International Relation Review*, 28.90 (2022), 348–66 <a href="https://doi.org/10.2478/CIRR-2022-0035">https://doi.org/10.2478/CIRR-2022-0035</a>
- Barbosa, Luciana Gomes, Maria Alice Santos Alves, and Carlos Eduardo Viveiros Grelle, 'Actions against Sustainability: Dismantling of the Environmental Policies in Brazil', *Land Use Policy*, 104.October 2020 (2021), 105384 <a href="https://doi.org/10.1016/j.landusepol.2021.105384">https://doi.org/10.1016/j.landusepol.2021.105384</a>>
- Bratman, Eve, and Cristiane Bená Dias, 'Development Blind Spots and Environmental Impact Assessment: Tensions between Policy, Law and Practice in Brazil's Xingu River Basin', Environmental Impact Assessment Review, 70.March 2017 (2018), 1–10 <a href="https://doi.org/10.1016/j.eiar.2018.02.001">https://doi.org/10.1016/j.eiar.2018.02.001</a>>
- Daems, Tom, 'Compatible Victims? Prison Overcrowding and Penal Reform in Belgium', *International Journal of Law, Crime and Justice*, 36.3 (2008), 153–67 <a href="https://doi.org/10.1016/j.ijlcj.2008.04.001">https://doi.org/10.1016/j.ijlcj.2008.04.001</a>
- Delina, Laurence L., 'Indigenous Environmental Defenders and the Legacy of Macli-Ing Dulag: Anti-Dam Dissent, Assassinations, and Protests in the Making of Philippine Energyscape', *Energy Research and Social Science*, 65.September 2019 (2020), 101463 <a href="https://doi.org/10.1016/j.erss.2020.101463">https://doi.org/10.1016/j.erss.2020.101463</a>>
- Earnhart, Dietrich, and Sandra Rousseau, 'Are Lawyers Worth the Cost? Legal Counsel in Environmental Criminal Court Cases', *International Review of Law and Economics*, 60 (2019), 105857 <a href="https://doi.org/10.1016/j.irle.2019.105857">https://doi.org/10.1016/j.irle.2019.105857</a>
- Ferreira, Marcos Alan, and Anna Beatriz Gonçalves, 'Criminal Governance and Systems of Parallel Justice: Practice and Implications in Brazilian Urban Peripheries', *International Journal of Law, Crime and Justice*, 68 (2022), 100519 <a href="https://doi.org/https://doi.org/10.1016/j.ijlcj.2021.100519">https://doi.org/https://doi.org/10.1016/j.ijlcj.2021.100519</a>
- Hakim, Eric Rahmanul, 'Penegakan Hukum Lingkungan Indonesia Dalam Aspek Kepidanaan', Media Keadilan: Jurnal Ilmu Hukum, 11.1 (2020), 43

- <a href="https://doi.org/10.31764/jmk.v11i1.1615">https://doi.org/10.31764/jmk.v11i1.1615</a>
- Ignatyeva, Margarita, Vera Yurak, and Natalia Pustokhina, 'Recultivation of Post-Mining Disturbed Land: Review of Content and Comparative Law and Feasibility Study', *Resources*, 9.6 (2020) <a href="https://doi.org/10.3390/RESOURCES9060073">https://doi.org/10.3390/RESOURCES9060073</a>
- Itskovich, Eran, and Roni Factor, 'Economic Inequality and Crime: The Role of Social Resistance', *Journal of Criminal Justice*, 86 (2023), 102065 <a href="https://doi.org/10.1016/j.jcrimjus.2023.102065">https://doi.org/10.1016/j.jcrimjus.2023.102065</a>
- Karjoko, Lego, I Gusti Ayu Ketut Rachmi Handayani, and Willy Naresta Hanum, 'Legal Policy of Old Wells Petroleum Mining Management Based on Social Justice in Realising Energy Sovereignty', *Sriwijaya Law Review*, 6.2 (2022), 286–303 <a href="https://doi.org/10.28946/slrev.Vol6.Iss2.1745.pp286-303">https://doi.org/10.28946/slrev.Vol6.Iss2.1745.pp286-303</a>
- Khalif, Muhammad, FX Hastowo Broto Laksito, and Andriamalala Laurent, 'Role and Position of Indonesian Medical Disciplinary Honour Council: Fair Medical Dispute Resolution', *Journal of Law, Environmental and Justice*, 1.3 (2023), 185–201 <a href="https://doi.org/10.62264/jlej.v1i3.15">https://doi.org/10.62264/jlej.v1i3.15</a>
- Kharisma, Dona Budi, 'Urgency of Financial Technology (Fintech) Laws in Indonesia', International Journal of Law and Management, 63.3 (2021), 320–31 <a href="https://doi.org/10.1108/IJLMA-08-2020-0233">https://doi.org/10.1108/IJLMA-08-2020-0233</a>
- Loughnan, Arlie, and Tony Ward, 'Emergent Authority and Expert Knowledge: Psychiatry and Criminal Responsibility in the UK', *International Journal of Law and Psychiatry*, 37.1 (2014), 25–36 <a href="https://doi.org/10.1016/j.ijlp.2013.10.002">https://doi.org/10.1016/j.ijlp.2013.10.002</a>
- Mancano, Leandro, and Deborah Russo, 'Punishment of Criminals', in *Encyclopedia of Violence, Peace, & Conflict (Third Edition)*, ed. by Lester R Kurtz, Third Edit (Oxford: Academic Press, 2022), pp. 539–51 <a href="https://doi.org/https://doi.org/10.1016/B978-0-12-820195-4.00160-6">https://doi.org/https://doi.org/10.1016/B978-0-12-820195-4.00160-6</a>>
- Miola, Deise Tatiane Bueno, Ana Paula Marinho, Roberta Lima Campos Dayrell, and Fernando Augusto Oliveira Silveira, 'Silent Loss: Misapplication of an Environmental Law Compromises Conservation in a Brazilian Biodiversity Hotspot', *Perspectives in Ecology and Conservation*, 17.2 (2019), 84–89 <a href="https://doi.org/10.1016/j.pecon.2019.04.001">https://doi.org/10.1016/j.pecon.2019.04.001</a>
- Natsir, Muhammad, and Andi Rachmad, 'Penetapan Asas Kearifan Lokal Sebagai Kebijakan Pidana Dalam Pengelolaan Lingkungan Hidup Di Aceh', *Jurnal Magister Hukum Udayana (Udayana Master Law Journal)*, 7.4 (2018), 468 <a href="https://doi.org/10.24843/jmhu.2018.v07.i04.p05">https://doi.org/10.24843/jmhu.2018.v07.i04.p05</a>>
- Obani, Pedi, and Joyeeta Gupta, 'Legal Pluralism in the Area of Human Rights: Water and Sanitation', *Current Opinion in Environmental Sustainability*, 11 (2014), 63–70 <a href="https://doi.org/10.1016/j.cosust.2014.09.014">https://doi.org/10.1016/j.cosust.2014.09.014</a>>

- Okereke, Chukwumerije, and Mark Charlesworth, *Environmental and Ecological Justice, Advances in International Environmental Politics*, 2014 <a href="https://doi.org/10.1057/9781137338976">https://doi.org/10.1057/9781137338976</a>
- Qurbani, Indah Dwi, Ilham Dwi Rafiqi, and Ilham Dwi Rafiqi, 'Prospective Green Constitution in New and Renewable Energy Regulation', *Legality: Jurnal Ilmiah Hukum*, 30.1 (2022), 68–87 <a href="https://doi.org/10.22219/ljih.v30i1.18289">https://doi.org/10.22219/ljih.v30i1.18289</a>>
- Rahadian, Januar, and Silas Oghenemaro, 'Monodualistic and Pluralistic Punishment Politics in Criminal Code Reform: Lessons from Indonesia', *Journal of Law, Environmental and Justice*, 1.3 (2023), 225–43 <a href="https://doi.org/10.62264/jlej.v1i3.17">https://doi.org/10.62264/jlej.v1i3.17</a>
- Saputra, Rian, Muhammad Khalif Ardi, Pujiyono Pujiyono, and Sunny Ummul Firdaus, 'Reform Regulation of Novum in Criminal Judges in an Effort to Provide Legal Certainty', *JILS* (Journal of Indonesian Legal Studies), 6.2 (2021), 437–82 <a href="https://doi.org/10.15294/jils.v6i2.51371">https://doi.org/10.15294/jils.v6i2.51371</a>
- Saputra, Rian, M Zaid, and Devi Triasari, 'Executability of the Constitutional Court's Formal Testing Decision: Indonesia's Omnibus Law Review', *Journal of Law, Environmental and Justice*, 1.3 (2023), 244–58 <a href="https://doi.org/10.62264/jlej.v1i3.18">https://doi.org/10.62264/jlej.v1i3.18</a>
- Satria, Hariman, 'Penerapan Pidana Tambahan Dalam Pertanggungjawaban Pidana Korporasi Pada Tindak Pidana Lingkungan Hidup', *Jurnal Yudisial*, 10.2 (2017), 155 <a href="https://doi.org/10.29123/jy.v10i2.18">https://doi.org/10.29123/jy.v10i2.18</a>
- Shanty Saleh, Indah Nur, and Bita Gadsia Spaltani, 'Environmental Judge Certification in an Effort to Realize the Green Legislation Concept in Indonesia', *Law and Justice*, 6.1 (2021), 1–18 <a href="https://doi.org/10.23917/laj.v6i1.13695">https://doi.org/10.23917/laj.v6i1.13695</a>>
- Stevis, Dimitris, 'Whose Ecological Justice?', *Strategies: Journal of Theory, Culture & Politics*, 13.1 (2000), 63–76 <a href="https://doi.org/10.1080/10402130050007520">https://doi.org/10.1080/10402130050007520</a>
- Suwadi, Pujiyono, Priscilla Wresty Ayuningtyas, Shintya Yulfa Septiningrum, and Reda Manthovani, 'Legal Comparison of the Use of Telemedicine between Indonesia and the United States', *International Journal of Human Rights in Healthcare*, ahead-of-print (2022) <a href="https://doi.org/10.1108/IJHRH-04-2022-0032">https://doi.org/10.1108/IJHRH-04-2022-0032</a>>
- Tegnan, Hilaire, Lego Karjoko, Jaco Barkhuizen, and Anis H Bajrektarevic, 'Mining Corruption and Environmental Degradation in Indonesia: Critical Legal Issues', *Bestuur*, 9.2 (2021), 90–100 <a href="https://doi.org/10.20961/bestuur.v9i2.55219">https://doi.org/10.20961/bestuur.v9i2.55219</a>
- Testa, Alexander, and Daniel Semenza, 'Criminal Offending and Health over the Life-Course: A Dual-Trajectory Approach', *Journal of Criminal Justice*, 68.February (2020), 101691 <a href="https://doi.org/10.1016/j.jcrimjus.2020.101691">https://doi.org/10.1016/j.jcrimjus.2020.101691</a>>
- Tignino, Mara, and Christian Bréthaut, 'The Role of International Case Law in Implementing the Obligation Not to Cause Significant Harm', *International Environmental Agreements:*

- *Politics, Law and Economics,* 20.4 (2020), 631–48 <a href="https://doi.org/10.1007/s10784-020-09503-6">https://doi.org/10.1007/s10784-020-09503-6</a>
- Wu, Haitao, Yufeng Xia, Xiaodong Yang, Yu Hao, and Siyu Ren, 'Does Environmental Pollution Promote China's Crime Rate? A New Perspective through Government Official Corruption', *Structural Change and Economic Dynamics*, 57 (2021), 292–307 <a href="https://doi.org/https://doi.org/10.1016/j.strueco.2021.04.006">https://doi.org/https://doi.org/10.1016/j.strueco.2021.04.006</a>>
- Zhou, Kuo, Haotian Luo, Diyu Ye, and Yunqing Tao, 'The Power of Anti-Corruption in Environmental Innovation: Evidence from a Quasi-Natural Experiment in China', *Technological Forecasting and Social Change*, 182 (2022), 121831 <a href="https://doi.org/https://doi.org/10.1016/j.techfore.2022.121831">https://doi.org/https://doi.org/10.1016/j.techfore.2022.121831</a>