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Rudall, J.T.P.

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Article

# Rights-Based Approaches to Environmental Protection and Pandemic Prevention

Jason Rudall 

Grotius Centre for International Legal Studies, Leiden University, 2311 EZ Leiden, The Netherlands;  
j.t.p.rudall@law.leidenuniv.nl

**Abstract:** This article reflects on the proposed pandemic treaty negotiations, the content of the recently published Zero Draft and its prospects for success in preventing future pandemics from emerging at all. It argues that, as presently conceived, the proposed instrument does little to address environmental damage as the primary driver of zoonotic spillover, nor does it make sufficient provision for the implementation and enforcement of legal obligations. In particular, the piece suggests that human rights and rights of nature can and should feature more prominently in efforts to fully realize the One Health agenda and strengthen environmental governance with a view to mitigating the risk of future pandemics. Experience from rights-based approaches in other contexts suggests that they offer a promising conduit for achieving genuine policy reform and accountability regarding environmental degradation. Indeed, human rights and rights of nature can play an important role in mitigating ecological destruction, biodiversity loss and, in turn, preventing disease transmission from the natural world.

**Keywords:** human rights; rights of nature; environmental governance; One Health; pandemic prevention

## 1. Introduction

On 1 February 2023, the Intergovernmental Negotiating Body of the World Health Organization (WHO) published a “Zero Draft” of a pandemic instrument, which may evolve into a WHO convention or instrument on pandemic prevention, preparedness and response.<sup>1</sup> Negotiations are expected to commence in earnest among states at the 2024 World Health Assembly. The Zero Draft has already attracted both praise and criticism. Indeed, some have said that the Zero Draft goes further than was expected in many areas, with experts welcoming the provisions on intellectual property rights, transparency, benefit sharing and equity in particular (Friedman et al. 2022; Deol 2023). However, the Zero Draft also falls short in a number of respects and this article focuses on critiquing the present text from the perspective of a rights-based approach to environmental protection. This is significant because human rights and rights of nature are playing an increasingly important role in mitigating ecological destruction, biodiversity loss and, in turn, preventing the spillover of disease pathogens from the natural world. What is more, a greater emphasis on such approaches would assist with fulfilling the environmental dimension of the One Health normative framework, around which there is broad consensus that such an approach offers the best way of guiding initiatives seeking to prevent future pandemics.

In making these arguments, the present article begins by surveying the literature on rights-based approaches to environmental protection and pandemic prevention, including in the context of the new Zero Draft. This will help to situate my contribution and highlight that there are indeed existing gaps in the literature on the value of rights-based approaches



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<sup>1</sup> WHO, ‘Zero draft of the WHO CA+ for the consideration of the Intergovernmental Negotiating Body at its fourth meeting: WHO convention, agreement or other international instrument on pandemic prevention, preparedness and response (“WHO CA+”), A/INB/4/3, 1 February 2023.

to environmental protection in the context of pandemic prevention. Second, the article sketches the background of an increasingly intertwined relationship between environmental degradation and human rights, with an emphasis on the widening recognition that the latter are detrimentally impacted by the former. Third, this article appraises the Zero Draft in the light of emerging rights-based approaches to environmental protection, highlighting where the present text is lacking with respect to such approaches. In particular, the article directs its focus on three specific ways in which the Zero Draft is deficient in this context, namely its inadequate provision for the substantive rights to health or to a healthy environment, the notable absence of procedural rights with respect to participation and accountability and the failure to incorporate rights of nature. Finally, the article evaluates whether the Zero Draft lives up to the promise of the One Health approach and finds that the environmental dimension of this normative framework has been largely ignored. However, it is argued that, if negotiators can place a much greater emphasis on rights-based approaches as the draft text evolves, this will help to ensure all human beings and the environment as such are better served by a future pandemic instrument, which may in turn prevent the next pandemic.

## 2. Literature Review

Before appraising the Zero Draft from the perspective of rights-based approaches to environmental protection and zoonotic spillover, it is important to consider the existing academic literature in this context. In general, much scholarship has warned that the failure to prevent environmental harm greatly increases the risk of zoonotic spillover (see, e.g., [Farnese 2014](#); [Morin and Blouin 2019](#); [Emmenegger and Tschentscher 1994](#); [De Lucia 2015](#); [Mishra et al. 2021](#); [Gibb et al. 2020](#)). Many scholars have in fact highlighted how human activity that is detrimental to the environment plays a significant role in exacerbating the risk of deadly pathogens infecting human beings (see, e.g., [Rudall 2020](#); [Viñuales et al. 2021](#); [Duvic-Paoli 2020](#); [Pfäffle et al. 2015](#)). Some of the literature has also documented that the main anthropogenic causes of zoonotic disease spillover from animals are the increasing use and exploitation of wildlife, urbanization, the growing demand for animal protein, agricultural intensification, unsustainable travel, changes in food supply chains, pollution, overpopulation, habitat loss, land-use changes and climate change (see, e.g., [Duvic-Paoli 2020](#); [Gibb et al. 2020](#); [Han et al. 2016](#); [Wilson 2002](#); [Wu et al. 2016](#); [Garcia and Gostin 2012](#)). These all result in the loss of biological diversity, which in turn lowers resistance to pathogens that are circulating in animals because the genetic differences that hinder the transmission of these microbes are also lost. Of particular concern, some have estimated that a quarter of all terrestrial species could become extinct because of damage caused to our ecosystems ([Kolbett 2006](#)). These scholars have highlighted that this would amount to a dangerous loss of diversity, presenting a significantly easier path for pathogens to spread and making pandemics a much more likely occurrence.

Recent literature in this field has tended to focus on the policy and regulatory responses to COVID-19. For example, several authors have called for preventative approaches, including the strengthening of environmental governance, better regulation of the illegal wildlife trade or ameliorating other aspects of the human–animal–environment interface.<sup>2</sup> Other scholars have called for adherence to or reform of the present global health law framework, highlighting the need to respect the international health regulations during a pandemic, define key concepts under the law or develop the current legal regime (see, e.g., [Habibi et al. 2020](#); [Bartolini 2020](#); [Burci and Eccleston-Turner 2019](#); [Eccleston-Turner 2020](#); [Villarreal 2020](#); [Le Moli 2023](#)). There is a distinct body of scholarship that promotes the One Health approach, with several scholars highlighting the important role it can play in complementing the present global health framework or guiding reform initiatives and some even arguing that it might amount to a new international constitutional principle (see,

<sup>2</sup> (See, e.g., Rudall, 'The Natural Remedy for Zoonotic Diseases', *op cit*; [Viñuales et al. 2021](#); [Duvic-Paoli 2020](#); [Villarreal 2022](#); [Davies et al. 2022](#); [Whitford 2021](#); [Staiano 2020](#); [Weissgold et al. 2020](#)).

e.g., Peters 2021; Garcia and Gostin 2012; Negri and Eccleston-Turner 2022). Others again have called for the development of more proactive state obligations or the development of disaster risk reduction (see, e.g., Villarreal 2022; Toscano-Rivalta 2020).

As is becoming evident, little scholarly research directly addresses how rights-based approaches to environmental protection might help to prevent zoonotic spillover. In the context of human rights and pandemics, scholarly literature has mostly focused on the importance of protecting human rights while combating pandemics (see, e.g., Zweig et al. 2021; Jalloh 2021; Scheinin 2020; Zarifi and Powers 2020; Desierto 2021). The important questions of vaccine equity, the human right to health and related issues of equality and discrimination have been addressed in this scholarship. While a certain amount of attention has been devoted to the protection of the environment through rights-based approaches,<sup>3</sup> no in-depth study has yet been undertaken. What is more, given that the Zero Draft of the pandemic instrument has only recently emerged, no scholarly literature has to date extensively engaged with the issue of rights-based approaches to environmental protection in this particular context. The present article seeks to fill this gap.

### 3. Human Rights and Environmental Degradation

This section seeks to put the argument for a greater emphasis on rights-based approaches to pandemic prevention in its proper context. The relationship between the protection of the environment and the realization of human rights is increasingly recognized, and the two objectives are now widely conceived of as mutually dependent. Ensuring clean air, unpolluted water and the conservation of biodiversity is critical to the enjoyment of a range of human rights, including the right to life, the right to water, the right to food and many others. Indeed, the degradation of the environment not only poses a threat to well-established human rights such as the right to health but also undermines newly recognized rights like the right to a healthy environment. In this context, the UN Human Rights Council has placed an emphasis on the connection between a healthy environment and human rights,<sup>4</sup> while the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment has cautioned that pollution is one of the main causes of biodiversity degradation and that the loss of biodiversity negatively affects human rights.<sup>5</sup> In fact, the Special Rapporteur highlighted that “[b]iodiversity is necessary for ecosystem services that support the full enjoyment of a wide range of human rights, including the rights to life, health, food, water and culture. In order to protect human rights, States have a general obligation to protect ecosystems and biodiversity” (ibid., p. 21).

Significantly, the Human Rights Committee’s General Comment No. 36 on the right to life also addresses the importance of environmental protection for the enjoyment of civil and political rights such as the right to life.<sup>6</sup> The General Comment provides that “[t]he duty to protect life also implies that States parties should take appropriate measures to address the general conditions in society that may give rise to direct threats to life or prevent individuals from enjoying their right to life with dignity [including] degradation of the environment” (ibid., p. 26). Interestingly, it further highlights that environmental damage can impinge on the right to life of future generations (ibid., p. 62). And the Committee in several cases has found that a state’s failure to prevent environmental damage can in fact amount to a violation of the right to life.<sup>7</sup> In one of these cases, the Committee

<sup>3</sup> See, e.g., Rudall, ‘The Natural Remedy for Zoonotic Diseases’, *op cit*.

<sup>4</sup> See, e.g., HRC Resolution 16/11 (24 March 2011); HRC Resolution 7/23 (28 March 2008); HRC Resolution 10/4 (25 March 2009); HRC Resolution 18/22 (30 September 2011); HRC Resolution 9/1 (24 September 2008); HRC Resolution 12/18 (2 October 2009); HRC Resolution 18/11 (29 September 2011).

<sup>5</sup> UN General Assembly, *Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment*, UN Doc A/HRC/34/49 (2017), 3.

<sup>6</sup> Human Rights Committee, *General Comment no 36 (2018) on Article 6 of the International Covenant on Civil and Political Rights, on the Right to Life*, UN Doc CCPR/C/GC/36 (2018).

<sup>7</sup> HRCtee, *Portillo Cáceres v Paraguay*, Comm no 2751/2016, CCPR/C/126/D/2751/2016 (9 August 2019); HRC, *Teitiota v. New Zealand*, Comm no 2728/2016, CCPR/C/127/D/2728/2016 (24 October 2019).

said that “environmental degradation, climate change and unsustainable development constitute some of the most pressing and serious threats to the ability of present and future generations to enjoy the right to life.”<sup>8</sup> It is particularly notable that, in 2021, the Human Rights Council endorsed the human right to a healthy environment<sup>9</sup> and, the following year, the UN General Assembly followed suit by recognizing the existence of a human right to a clean, healthy and sustainable environment.<sup>10</sup>

Regional human rights systems have also made an important contribution to reinforcing the relationship between the environment and human rights. For example, Article 24 of the African Charter on Human and Peoples’ Rights recognizes that “[a]ll peoples shall have the right to a general satisfactory environment favourable to their development.”<sup>11</sup> The African Commission on Human and Peoples’ Rights has provided an interpretation of this provision’s scope and specified the particular actions that states should take. The Commission opined that the right to a general satisfactory environment requires positive action on the part of states, not least in taking measures to prevent environmental damage and pollution,<sup>12</sup> including ensuring third parties do not hamper the realization of the right (ibid., pp. 45–47). It also said that governments must facilitate scientific monitoring of endangered environments, conduct environmental and social impact assessments prior to commencing industrial projects (the results of which should be published widely), as well as provide relevant information to local communities affected by environmentally damaging activities (ibid., p. 55). Moreover, the Commission emphasized the importance of providing meaningful opportunities for individuals to participate in environmental and related decision-making processes (ibid.).

The Inter-American Commission on Human Rights has similarly observed that, within the framework of the American Convention on Human Rights, environmental degradation can give rise to infringements upon the rights to life, personal safety and integrity, as well as property.<sup>13</sup> What is more, the Inter-American Court of Human Rights has, in a landmark advisory opinion, emphasized that there is an inherent connection between the realization of human rights and the existence of a healthy environment.<sup>14</sup> The Court also opined that states should take measures to ensure significant environmental harm is not caused to individuals within and beyond their territory (ibid.). In its *Lhaka Honhat Association (Our Land) v. Argentina* case,<sup>15</sup> the Court underlined the importance of protecting the environment of indigenous peoples, especially from modern agricultural practices, which can cause significant environmental pollution and negatively impact the food security of such communities (ibid.).

The European Court of Human Rights has held that environmental degradation may amount to a denial of Article 8 of the European Convention on Human Rights, which includes the right to respect for private and family life, home and correspondence.<sup>16</sup> It is also notable that the Court has, in several cases, linked a denial of the right to life with en-

<sup>8</sup> HRCtee, *Teitiota v. New Zealand*, Comm no 2728/2016, CCPR/C/127/D/2728/2016 (24 October 2019), p. 9.4.

<sup>9</sup> HRC, Resolution 48/13 (8 October 2021).

<sup>10</sup> UN General Assembly Resolution on a Human Right to a Clean, Healthy and Sustainable Environment, UN Doc. A/76/L.75 (26 July 2022).

<sup>11</sup> African Charter on Human and Peoples’ Rights, 1981, 1520 UNTS 217.

<sup>12</sup> African Commission on Human Rights, *Social and Economic Rights Action Center (SERAC) and Center for Economic and Social Rights (CESR) v. Nigeria*, Case no. 155/96 (2001), p. 52.

<sup>13</sup> American Convention on Human Rights, 1969, 1144 UNTS 123. See, e.g., Inter-American Commission on Human Rights, *Maya Indigenous Community of the Toledo District v. Belize*, Case no 12.053, Doc OEA/Ser.L/V/II.122 Doc. 5 rev. 1 727 (2004).

<sup>14</sup> *The Environment and Human Rights (State Obligations in Relation to the Environment in the Context of the Protection and Guarantee of the Rights to Life and to Personal Integrity—Interpretation and Scope of Articles 4(1) and 5(1) of the American Convention on Human Rights)*, Advisory Opinion OC-23/17, Inter-Am. Ct. H.R. (ser. A) No. 23.

<sup>15</sup> *Indigenous Communities of the Lhaka Honhat Association (Our Land) v. Argentina*, Judgment, 6 February 2020, Inter-Am. Ct. H.R. (ser. C) No. 400.

<sup>16</sup> See, e.g., *Guerra and Others v. Italy*, ECtHR Application no 14967/89 (1998), p. 60; *López Ostra v. Spain*, ECtHR Application no 16798/90 (1994), p. 51; *Tătar v. Romania*, ECtHR Application no 67021/01 (2009); *Dubetska and Others v Ukraine*, ECtHR Application no 30499/03 (2011); *Dzemyuk v. Ukraine*, ECtHR Application no 42488/02 (2014).

vironmental damage.<sup>17</sup> Further still, the Court has said that “in exceptional circumstances, the acts of Contracting States performed outside their territory, or which produce effects there, may amount to exercise by them of their jurisdiction within the meaning of Article 1 of the Convention”, which could allow individuals located beyond a state’s jurisdiction to claim for a breach of their human rights caused by environmental pollution.<sup>18</sup>

As is evident, in both universal and regional human rights fora, the interdependent relationship between the state of the environment and the full realization of human rights has been increasingly established, and the precise contours of that relationship are continually being defined. It is therefore particularly surprising that, under the recent Zero Draft of the pandemic instrument, rights-based approaches to environmental protection are notably absent. This absence is explored in greater depth in the next section.

#### 4. The Pandemic Instrument and the Human Rights to Health and a Healthy Environment

As alluded to, the WHO’s Intergovernmental Negotiating Body has circulated a Zero Draft that may in the future become a WHO convention or agreement of some form on the prevention and response to pandemics.<sup>19</sup> There has been wide-ranging critique directed at the absence of provision for human rights protection in certain respects. Indeed, organizations such as Amnesty International, the Global Initiative for Economic, Social and Cultural Rights, Human Rights Watch and the International Commission of Jurists, as well as scholars, have expressed their concern that the Zero Draft “misses the mark on human rights.”<sup>20</sup> In this respect, a recommendation has been made for negotiators to place a greater emphasis on human rights in future iterations of the text (*ibid.*).

The present author contends that the Zero Draft fails to adequately develop a rights-based approach to environmental protection with a view to preventing zoonotic spillover events. This is particularly notable with respect to two substantive human rights that are directly affected by the state of the environment. First, the relationship between the right to health and environmental conditions is not sufficiently recognized in the text.<sup>21</sup> Article 4 of the Zero Draft provides for “Guiding Principles and Rights” and includes the right to health among these. However, the right to health is conceived of in the text as follows:

[t]he enjoyment of the highest attainable standard of health, defined as a state of complete physical, mental and social well-being, is one of the fundamental rights of every human being without distinction of age, race, religion, political belief, economic or social condition.<sup>22</sup>

In this context, the importance of a healthy environment to the full realization of the right to health should be emphasized. One way to achieve this would be for the definition in the Zero Draft to reflect a more progressive understanding of the right to health rather than relying on the limited conception that can be found, for example, under the WHO Constitution, which appears to have been the case.<sup>23</sup> A broader conception is that in

<sup>17</sup> *M. Özel et al v. Turkey*, ECtHR Application no 46221/99 (2015), pp. 170–1, 200; *Budayeva et al v. Russia*, ECtHR Application nos 15339/02, 21166/02, 20058/02, 11673/02, 15343/02 (2008), pp. 128–30, 133, 159; *Öneriyildiz v Turkey*, ECtHR Application no 48939/99 (2004), pp. 71, 89–90, 118.

<sup>18</sup> *Ilascu and Others v. Moldova and Russia*, ECtHR Application no 48787 (2004), p. 314.

<sup>19</sup> WHO, ‘Zero draft of the WHO CA+ for the consideration of the Intergovernmental Negotiating Body at its fourth meeting: WHO convention, agreement or other international instrument on pandemic prevention, preparedness and response (“WHO CA+”)’, *op cit.*

<sup>20</sup> Amnesty International, the Global Initiative for Economic, Social and Cultural Rights, Human Rights Watch and the International Commission of Jurists, ‘Pandemic Treaty Zero Draft Misses the Mark on Human Rights: Joint Public Statement’, 24 February 2023, <https://www.amnesty.org/en/documents/ior40/6478/2023/en/> (accessed on 16 May 2023); Friedman, Finch and Gostin, ‘Pandemic Treaty: The Conceptual Zero Draft’, O’Neill Institute for National and Global Health Law, Georgetown University, *op cit.*

<sup>21</sup> Civil Society Alliance for Human Rights in the Pandemic Treaty, ‘Human Rights Concerns in the Zero Draft of the WHO CA+’, <https://covid19advocacy.org/wp-content/uploads/2023/02/CSA-on-Human-Rights-in-the-Pandemic-Treaty-Human-Rights-Concerns-in-Zero-draft-of-the-WHO-CA.pdf> (accessed on 16 May 2023).

<sup>22</sup> Article 4, Zero Draft, *op cit.*

<sup>23</sup> Civil Society Alliance for Human Rights in the Pandemic Treaty, ‘Human Rights Concerns in the Zero Draft of the WHO CA+’, *op cit.*



Article 12 of the International Covenant on Economic, Social and Cultural Rights, which provides that the right to health is concerned with the “right of everyone to the enjoyment of the highest attainable standard of physical and mental health” and that this requires states to, *inter alia*, improve “all aspects of environmental and industrial hygiene.”<sup>24</sup> This has been complemented by the UN Committee on Economic, Social and Cultural Rights in its General Comment No. 14, which indicates that the right to health under the Covenant encompasses the underlying determinants of health like “food and nutrition, housing, access to safe and potable water and adequate sanitation, safe and healthy working conditions and a healthy environment.”<sup>25</sup> Drawing on this expanded understanding of the right to health would ensure that its fulfilment also involves the promotion of the socio-economic and environmental factors that create the conditions in which people can lead a healthy life.<sup>26</sup>

Second, in light of the major strides forward across many fora with respect to the emergence of the right to a clean, healthy and sustainable environment indicated above, it is also surprising that the Zero Draft makes no reference to this newly and universally endorsed right. The obligations this right places on states as far as health outcomes are concerned could have been clarified and leveraged in this context. In particular, the inclusion of the right might have helped to inform what states must do to fulfil their pandemic prevention commitments under the pandemic instrument. It would also have further reinforced the importance of environmental interventions that mitigate the risk of zoonotic spillover. What is more, the relationship between this right and the right to health, as well as their mutual dependence, could have been emphasized.<sup>27</sup> In this context, omitting the right to a healthy environment is a missed opportunity, not only for the pandemic instrument and the prevention of zoonotic spillover but also for the development of this nascent right.

Beyond substantive rights, the Zero Draft also falls short with respect to several procedural rights, such as those concerned with participation and accountability, to which the next section turns.

## 5. The Pandemic Instrument, Participation and Accountability

The participation of a wide range of stakeholders is also essential to the full realization of human rights and to the effectiveness of a pandemic instrument. This should be enhanced in the Zero Draft, particularly with respect to local communities who live in fragile environments, which can also be hotspots for zoonotic spillover. Indeed, public participation has become a cornerstone principle of international environmental law. And there is increasingly wide recognition of the importance of including all affected peoples in environmental decision-making. For example, Principle 10 of the Rio Declaration on Environment and Development of 1992 provides that “[e]nvironmental issues are best handled with the participation of all concerned citizens”, while an emphasis on public participation has featured explicitly in a range of treaties that concern environmental protection as well.<sup>28</sup> As such, the link between the right to participate in environmental decision-making and the health and well-being of present and future generations is clearly recognized in conventional practice. Overall, the principle of public participation is vital to

<sup>24</sup> Articles 12(1) and (2)(b), International Covenant on Economic, Social and Cultural Rights, 1966, 993 UNTS 3.

<sup>25</sup> UN Committee on Economic, Social and Cultural Rights, *General Comment no 14 (2000) on the Right to the Highest Attainable Standard of Health (Article 12)*, UN Doc E/C.12/2000/4.

<sup>26</sup> Civil Society Alliance for Human Rights in the Pandemic Treaty, ‘Human Rights Concerns in the Zero Draft of the WHO CA+’, *op cit*.

<sup>27</sup> Geneva Global Health Hub, ‘Digging into the Hardware of the Zero Draft’, <https://g2h2.org/posts/digging/> (accessed on 16 May 2023).

<sup>28</sup> See, e.g., Article 1, Convention on Access to Information, Public Participation in Decision-making and Access to Justice, 1998, 2161 UNTS 447; Article 16, Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1992, 1936 UNTS 269; Articles 5(1), 6(2), 8(1)(a)(iii), 9 and 10, Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1999, 2331 UNTS 202; Article 2(6), Convention on Environmental Impact Assessment in a Transboundary Context, 1991, 1989 UNTS 309; UN Convention on the Law of the Non-Navigational Uses of International Watercourses, 1997, 2999 UNTS 12.

ensuring the needs of vulnerable groups are heard and, in turn, facilitates the realization of many other dependent human rights.

As presently conceived, the Zero Draft provides inadequate means through which individuals, and particularly indigenous communities, can have their voices heard with respect to the development and implementation of the pandemic instrument. The direct participation of local communities and organizations that represent their interests should be guaranteed in the Zero Draft. This is particularly important under the provision on the development of global policies that intend to “recognize the specific needs, and ensure the protection of, persons in vulnerable situations, indigenous peoples and those living in fragile environments or areas.”<sup>29</sup> Despite a pledge to recognize their needs, indigenous peoples are not provided with any specific conduit through which to express these themselves. As a result, such communities are at risk of being effectively excluded from this important process.

Another major flaw in the Zero Draft is that there is presently no concrete structure to hold states to account for their obligations under the pandemic instrument. In this way, the instrument significantly lacks teeth. While Article 22 envisages “[o]versight mechanisms” to promote compliance, these are only to be considered and approved at the first meeting of the instrument’s governing body. There is of course a possibility that the governing body will impose a weak accountability mechanism, such as one that is only able to advise and assist on non-compliance. There are concerns that such a weak mechanism would undermine the substance of the agreement overall.<sup>30</sup> These have led to suggestions that a strong independent accountability mechanism endowed with the power to sanction non-compliance should be present in the pandemic instrument to ensure it is effective from the outset (*ibid.*). In all events, any mechanism that is created should have the mandate to appraise spillover prevention measures that states take under the pandemic instrument and be able to do so in light of the best available scientific evidence on environmental conservation and zoonotic spillover, as well as the full realization of human rights.

Beyond substantive and procedural human rights, this article suggests that rights of nature ought to play a role in future iterations of the pandemic instrument as well.

## 6. The Pandemic Instrument and Rights of Nature Approaches

In general, there is a need to develop a more holistic understanding of the interaction between and mutual dependence of nature and health. This demands a re-evaluation of how the environment is protected. There is much to learn from indigenous peoples and traditional knowledge in this respect, as such communities have long recognized that their health and well-being is interconnected with nature ([Garnier et al. 2020](#)). Indigenous peoples have also often considered that nature has personhood, illustrated for example by the notions of “Pacha Mamma” among certain groups in South America and Mother Earth among First Nations communities (*ibid.*). This resonates with recent developments in recognizing the legal personhood of nature and emerging theories that have sought to advance rights of nature approaches, such as earth jurisprudence, ecological jurisprudence, wild law, planetary boundaries and earth systems law (see, for e.g., [Gilbert et al. 2021](#)).

While the idea of legally recognizing rights of nature can be traced back some time (see, e.g., [Stone 1972](#)), it is only more recently that rights of nature have been expressly provided for in national legal systems. In essence, such frameworks provide legal rights and protections for ecosystems, species and other natural entities. This approach is a departure from the traditional view that nature is merely property to be owned, controlled and exploited by humans, a view that has been classically reinforced and perpetuated by international law.<sup>31</sup> Instead, the rights of nature movement represents a paradigm shift in which nature is granted legal standing and inherent rights.

<sup>29</sup> Civil Society Alliance for Human Rights in the Pandemic Treaty, ‘Human Rights Concerns in the Zero Draft of the WHO CA+’, *op cit.*

<sup>30</sup> Friedman, Finch and Gostin, ‘Pandemic Treaty: The Conceptual Zero Draft’, *op cit.*

<sup>31</sup> Rudall, ‘The Natural Remedy for Zoonotic Diseases’, *op cit.*; ([Natarajan and Khooday 2014](#); [Porras 2014](#)).



While the specific content of rights of nature recognized under certain domestic legal orders may vary from one jurisdiction to another, several common features can be identified. First, nature has a right to exist, thrive and regenerate its vital cycles and processes free from human interference or degradation. Second, nature has a right to maintain its habitat and ecosystem, including clean air, water and soil necessary for the health and well-being of its inhabitants. Third, nature has a right to maintain its ecological integrity, which involves the preservation of its biodiversity, interconnectedness and natural processes. Fourth, nature has the right to restoration and recovery in the event of damage or degradation caused by human activities. Finally, nature has a right to be represented in legal proceedings, allowing concerned individuals, communities or organizations to act as legal guardians or advocates for nature's interests. What is more, the rights of nature movement seeks to elevate the intrinsic value of nature, promote a more sustainable approach to environmental protection and move beyond traditional conservation practices that often prioritize human needs and economic considerations (UN Environment 2016).

Specific examples of the rights of nature approach can now be found in various parts of the world. Indeed, such rights were included in Ecuador's 2008 Constitution (Kauffman and Martin 2017). It recognizes that humans are part of nature and that nature is critical to our existence (Constitution of Ecuador 2008). In 2011, an Ecuadorian court granted a constitutional injunction to prevent excavation material from a road-widening project from being dumped in the Vilcabamba River on the basis of these rights.<sup>32</sup> Further, New Zealand and a local community known as the Whanganui tribe entered into an agreement in 2012 to recognize the legal personality of the Whanganui River. Its interests are now under the guardianships of the government and the tribe, and a related legislative framework serves to protect the ecosystem of the river (Tutohu Whakatupua 2012; Te Awa Tupua Act 2017). New Zealand's parliament has also passed the Te Urewera Act, which provides for the legal recognition of a national park in its own right (Te Urewera Act 2014). Further still, in 2010, Bolivia passed a pioneering law called the Law of the Rights of Mother Earth (Ley de Derechos de la Madre Tierra).<sup>33</sup> This law grants legal rights to nature and establishes a new legal framework for environmental protection and conservation. It recognizes nature as a living system that sustains and reproduces life, and it confers a set of rights to nature itself. Rights of nature approaches can also be found in Colombia, Bangladesh, India, Uganda and Spain, amongst others.<sup>34</sup>

Despite the propagation of rights of nature approaches in domestic legal systems, there has been little progress in multilateral fora. In the declaration on sustainable development entitled "The Future We Want" following the UN Conference on Sustainable Development held in 2012 in Rio de Janeiro, no explicit endorsement of rights of nature was made but an emphasis was placed on the importance of living in harmony with nature and recognizing the integral role of ecosystems in promoting sustainable development, as well as the need to strengthen international environmental governance and conserve biodiversity.<sup>35</sup> It is noteworthy that several UN General Assembly resolutions have shown a desire to develop rights of nature approaches<sup>36</sup> and the Universal Declaration on the Rights of Mother Earth that was the result of the World People's Conference on Climate Change and the Rights of Mother Earth attempts to further the rights of nature agenda at the international level but it is not a binding instrument.<sup>37</sup>

<sup>32</sup> Constitutional Injunction issued by the Appeal Court of Ecuador, Case no 11121-2011-0010 (2011) <https://mariomelo.files.wordpress.com/2011/04/proteccion-derechosnatura-loja-11.pdf> (accessed on 16 May 2023).

<sup>33</sup> Ley No. 071, Ley de Derechos de la Madre Tierra, 21 December 2010, <http://www.planificacion.gob.bo/uploads/marco-legal/Ley%20N%C2%B0%20071%20DERECHOS%20DE%20LA%20MADRE%20TIERRA.pdf> (accessed on 16 May 2023).

<sup>34</sup> Ecological Jurisprudence Monitor, <https://elgaworld.org/ecological-jurisprudence-monitor> (accessed on 16 May 2023).

<sup>35</sup> UN General Assembly Resolution 66/288 (27 July 2012), pp. 39–40.

<sup>36</sup> See, e.g., UN General Assembly Resolution 70/208, 'The Future We Want' (22 December 2015), preamble.

<sup>37</sup> See Global Alliance for the Rights of Nature, Universal Declaration for the Rights of Mother Earth, 22 April 2010, <https://www.garn.org/universal-declaration-for-the-rights-of-mother-earth/> (accessed on 16 May 2023).

Despite the fact that there is not yet any legally binding protection at the international level, the absence of any reference to rights of nature in the pandemic instrument represents a failure to recognize a growing domestic practice in this context. It is also a missed opportunity to employ another tool for the protection of the environment around which there is an increasingly broad consensus. Indeed, the inter-dependent relationship between rights of nature, the state of the environment and human health and rights should be recognized in the pandemic instrument.<sup>38</sup> This would, not least, help to amplify the need for states to take measures that effectively prevent, rather than just seek to cure, future pandemics. What is more, rights-based approaches to environmental protection would serve to advance One Health, which the next section explains in greater detail.

## 7. One Health and Rights-Based Approaches

The recognition and propagation of rights-based approaches to environmental protection can advance the One Health policy agenda and, *vice-versa*, I argue that One Health demands the recognition and propagation of rights-based approaches to environmental protection. The emerging concept of One Health is increasingly helping to integrate the various human rights that are concerned with health and which are dependent on environmental conditions (Garnier et al. 2020). One Health was originally conceived as a conceptual framework through which the political and regulatory disconnect between environmental, animal and human health could be reconciled. The concept implies collaboration across institutions, governance regimes and disciplines to optimize the health of people, animals and the environment, and it constitutes a critical normative framework for preventing and mitigating zoonotic disease spillover (UNEP and ILRI 2020).

There have been a number of attempts to develop and implement the One Health approach. For example, the 2004 Manhattan Principles on One World, One Health and the 2019 Berlin Principles on One Health aim to promote the well-being of ecosystems and address environmental issues such as climate change and antimicrobial resistance, as well as guide political leaders, civil society, the global health community and scientific institutions in adopting a comprehensive approach while preventing epidemic and epizootic diseases (Berlin Principles on One Health 2019; Manhattan Principles on One World, One Health 2004). More recently, the One Health High-Level Expert Panel defined One Health as “an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes the health of humans, domestic and wild animals, plants and the wider environment (including ecosystems) are closely linked and inter-dependent.”<sup>39</sup>

However, the One Health approach has presented various challenges in its implementation. While there has been some recognition of the importance of One Health,<sup>40</sup> concrete measures to advance it, particularly in the context of environmental protection, have thus far been lacking. Indeed, there remains much work to be done in mainstreaming the conservation of biodiversity, the promotion of ecosystem resilience and the propagation of environmental services for the purposes of preserving and promoting human health, as well as preventing zoonotic spillover. Concern has long been expressed about the lack of engagement with the environmental drivers of zoonotic spillover, and some have said that the environment has been ignored in the One Health triad (Essack 2018). This concern has resurfaced with respect to various initiatives that have emerged following the COVID-19 pandemic. For example, while the recently constituted One Health High-Level Expert Panel is tasked with improving scientific understanding around how diseases with the potential to trigger pandemics emerge and spread, its Terms of Reference indicate that the

<sup>38</sup> Geneva Global Health Hub, ‘Digging into the Hardware of the Zero Draft’, *op cit*.

<sup>39</sup> One Health High Level Expert Panel, <https://who.int/groups/one-health-high-level-expert-panel> (accessed on 16 May 2023).

<sup>40</sup> See, e.g., UNEA-3 Resolution on Environment and Health, Doc UNEP/EA.3/Res 4 (2017).

Panel does not have a specific mandate to consider international environmental governance in general.<sup>41</sup>

Unfortunately, the Zero Draft pandemic instrument has failed to develop the environmental pillar of One Health in any meaningful way. This is despite the fact that Article 18 of the Zero Draft is exclusively dedicated to One Health and calls for parties to strengthen their efforts at pandemic prevention. There is indeed much more that the Zero Draft could have done to address pandemic prevention at and beyond the human–animal–environment interface to tackle the origins of emerging infectious diseases more effectively.<sup>42</sup> Some have called for the pandemic instrument to pursue a “focus on deep prevention”, meaning that it should embrace an expansive understanding of pandemic prevention that includes the taking of measures to mitigate the risk of zoonotic spillover in the first place.<sup>43</sup> But expectations in this respect are unlikely to have been fully met.

The Zero Draft does not add or bring coherence to existing obligations under international environmental law, nor does it help to facilitate the implementation of such norms. There are no new hard obligations with respect to pandemic prevention in a deep sense. At first glance, the content of Article 18 appears to address the issues of prevention and closer integration with other instruments of environmental protection. For example, Article 18(3) seems to tackle the environmental drivers of zoonotic spillover in providing that

[t]he Parties will identify and integrate into relevant pandemic prevention and preparedness plans interventions that address the drivers of the emergence and re-emergence of disease at the human-animal-environment interface, including but not limited to climate change, land-use change, wildlife trade, desertification and antimicrobial resistance.

But on closer inspection, the language used is hortatory, neutering any new commitments that might otherwise have emerged in this context. In fact, the text of Article 18(3) provides no specificity with respect to the kind and magnitude of interventions expected to address the environmental drivers of zoonotic spillover, nor is any oversight or guidance from independent scientific experts or bodies envisaged. Similarly, no detail is given as to how biodiversity loss that exacerbates the risk of spillover should be mitigated or ameliorated by states. Given the scientific consensus on how environmental degradation exacerbates the likelihood of zoonotic spillover, it is submitted that states should be obliged to take measures where a significant risk is present.

Another major oversight in the Zero Draft is that it does not adequately address the integration or even interaction of institutions and bodies across international environmental and global health governance regimes. Article 18(5) purportedly addresses integration with other instruments of environmental governance in providing that

[t]he Parties commit to strengthen synergies with other existing relevant instruments that address the drivers of pandemics, such as climate change, biodiversity loss, ecosystem degradation and increased risks at the human–animal–environment interface due to human activities.

But the language of this provision is also more aspirational than concrete. The pandemic instrument must offer a regulatory bridge between the frameworks addressing the so-called “upstream prevention” of pandemics, such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the UN Framework Convention on Climate Change (UNFCCC) or the Convention on Biodiversity (CBD), and those addressing the so-called “downstream prevention” of pandemics, such as the International Health Regulations of 2005 (Le Moli et al. 2022). One significant contribution that the pandemic instrument ought to provide in this context is clarifying the modalities of information sharing across related surveillance mechanisms or expert bodies in the fields of environmental

<sup>41</sup> See One Health High-Level Expert Panel, <https://who.int/groups/one-health-high-level-expert-panel> (accessed on 16 May 2023).

<sup>42</sup> Geneva Global Health Hub, ‘Digging into the Hardware of the Zero Draft’, *op cit*.

<sup>43</sup> Viñuales, Moon, Le Moli and Burci, ‘A Global Pandemic Treaty Should Aim for Deep Prevention’, *op cit*.

and health governance, respectively. This would help with the identification of zoonotic spillover risks or hotspots and, in turn, facilitate more informed, targeted and efficient prevention and containment measures.

In general, a much more coordinated response from the different organizations involved in giving effect to the One Health approach is needed rather than the disaggregated approach that currently prevails. It has been suggested that an intergovernmental council aimed specifically at preventing pandemics should be developed to help remedy this fragmentation (IPBES 2020). Such an institution, for example, could take inspiration from the Intergovernmental Panel on Climate Change (IPCC) and ought to be provided for in future drafts of the pandemic instrument. This new council would propagate a One Health approach and work at the intersection of human, animal and environmental health. It could publish scientific research on the emergence of zoonotic diseases, identify areas where there is a significant risk of zoonotic pathogen spillover and elaborate a monitoring framework. Importantly, it could assist with clarifying the mutually dependent relationship between the state of the environment, human health and human rights as well as rights of nature, in addition to indicating where human rights or rights of nature are at risk of being violated and the danger this poses to the emergence of new pathogens from the natural world.

Further still, it has been argued that One Health ought to represent a more prominent pillar of the entire agreement, instead of being primarily elaborated in a single provision (Four Paws 2023). In this way, the pandemic instrument should, through One Health approaches, incentivize a mainstreaming of environmental conservation for the purpose of preventing pandemics, not least by underlining the importance of environmental health for human health.

These are all critical aspects of an effective One Health approach. While there is a desire to create an internationally binding instrument, the language used throughout the Zero Draft often dilutes this ambition.<sup>44</sup> Obligations should be unequivocally imposed and compliance measurable to ensure that states implement the systemic change that One Health demands and that is needed to prevent future pandemics. Better alternatives to the presently conceived provisions in the Zero Draft that concern One Health approaches have already been put forward. The European Union has proposed, for example, that the text refers to more specific commitments in relation to infection prevention and control, including the obligation to take measures that would ameliorate food and water hygiene, biosecurity and animal welfare (European Union 2023, Article A.1). An emphasis is also placed on developing pathogen surveillance, identification and notification, including in animals that present a particular zoonotic risk and with respect to vector-borne diseases (ibid., Article B.1 and 2). A further proposal is made with respect to the control of wildlife trade, in particular that parties should be obliged to prohibit trade in animal and plant species that may pose a scientifically proven higher risk of zoonotic diseases (ibid., Article C.1). What is more, the EU's proposal envisages the creation of an Implementation and Compliance Committee to promote and review implementation and compliance with the instrument (ibid., Article P.4), as well as an expert body that would provide scientific advice to the Conference of Parties (ibid., Article P.3). Overall, the specific language and suggested prevention measures in this proposal represent significant improvements on the presently conceived Zero Draft.

## 8. Conclusions

This article has sought to explore the potential of human rights and rights of nature in addressing ecological destruction, biodiversity loss and the transmission of diseases from the natural world. In this context, it has also appraised the recently published Zero Draft pandemic instrument. Unfortunately, the current proposal fails to adequately tackle environmental damage as the primary cause of zoonotic spillover, and it lacks teeth for implementing and enforcing legal obligations. This is a cause for real concern, not least

<sup>44</sup> Geneva Global Health Hub, 'Digging into the Hardware of the Zero Draft', *op cit.*

in light of the fact that there is no global instrument or mechanism with a dedicated mandate to address the origins of zoonotic disease spillover. Rights-based approaches offer a promising avenue for achieving meaningful policy reform on environmental protection and accountability for its degradation, as has been evident with respect to certain climate change litigation. Such approaches would also assist with the fulfillment of, and should be assisted by, the One Health policy agenda, and would in particular help to place a greater emphasis on the environmental dimension of this tripartite framework, which is much needed. Although rights-based approaches and One Health are not a panacea and have their own limitations, they are nevertheless effective normative tools that would help to guide policy-makers as they design more effective and inclusive pandemic prevention regulation. These tools would also help to bolster implementation efforts, providing a means for different communities to hold states and other actors to account.

While this article has sought to highlight the important role that rights-based approaches can play in environmental protection and pandemic prevention, future research efforts ought to be aimed at how such approaches may be best articulated in the next draft of the pandemic instrument. If the world is to have any chance at preventing the next pandemic, a new pandemic instrument must not ignore that the realization of human rights and health depend on the realization of nature's rights and health.

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## References

- Bartolini, Giulio. 2020. The Failure of “Core Capacities” under the who International Health Regulations. *International & Comparative Law Quarterly* 70: 233.
- Berlin Principles on One Health. 2019. Available online: <https://oneworldonehealth.wcs.org/About-Us/Mission/The-2019-Berlin-Principles-on-One-Health.aspx> (accessed on 16 May 2023).
- Burci, Gian Luca, and Mark Eccleston-Turner. 2019. Preparing for the Next Pandemic: The International Health Regulations and World Health Organization during COVID-19. *Yearbook of International Disaster Law* 2: 261.
- Constitution of Ecuador. 2008. Preamble. Available online: <https://pdba.georgetown.edu/Constitutions/Ecuador/english08.html> (accessed on 16 May 2023).
- Davies, Kirsten, Michelle Lim, Tianbao Qin, and Philip Riordan. 2022. CHANS-Law: Preventing the Next Pandemic Through the Integration of Social and Environmental Law. *International Environmental Agreements: Politics, Law and Economics* 22: 577–97. [CrossRef]
- De Lucia, Vito. 2015. Competing Narratives and Complex Genealogies: The Ecosystem Approach in International Environmental Law. *Journal of Environmental Law* 27: 91–117. [CrossRef]
- Deol, Taran. 2023. WHO Publishes Zero-Draft of Pandemic Treaty: Equity, IPR Take Centre Stage. *Down to Earth*. February 3. Available online: <https://www.downtoearth.org.in/news/health/who-publishes-zero-draft-of-pandemic-treaty-equity-ipr-take-centre-stage-87478> (accessed on 16 May 2023).
- Desierto, Diane. 2021. Equitable COVID Vaccine Distribution and Access: Enforcing International Legal Obligations under Economic, Social, and Cultural Rights and the Right to Development'. *EJIL Talk!* February 2. Available online: <https://www.ejiltalk.org/equitable-covid-vaccine-distribution-and-access-enforcing-international-legal-obligations-under-economic-social-and-cultural-rights-and-the-right-to-development/> (accessed on 16 May 2023).
- Duvic-Paoli, Leslie-Anne. 2020. The COVID-19 Pandemic and the Limits of International Environmental Law. *Opinio Juris*. March 30. Available online: <http://opiniojuris.org/2020/03/30/covid-19-symposium-the-covid-19-pandemic-and-the-limits-of-international-environmental-law/> (accessed on 16 May 2023).
- Eccleston-Turner, Mark. 2020. The Declaration of a Public Health Emergency of International Concern in International Law. *Opinio Juris*. March 31. Available online: <http://opiniojuris.org/2020/03/31/covid-19-symposium-the-declaration-of-a-public-health-emergency-of-international-concern-in-international-law/> (accessed on 16 May 2023).
- Emmenegger, Susan, and Axel Tschentscher. 1994. Taking Nature's Rights Seriously: The Long Way to Biocentrism in Environmental Law. *Georgetown International Environmental Law Review* 6: 545.
- Essack, Sabiha Y. 2018. Environment: The Neglected Component of the One Health Triad. *Lancet Planetary Health* 2: 238–39.



- European Union. 2023. Outline of EU Textual Proposals in the Zero draft of the WHO Convention, Agreement or Other International Instrument on Pandemic Prevention, Preparedness and Response. Available online: <https://www.eeas.europa.eu/sites/default/files/documents/2023/EU%20proposals%20integrated%20into%20the%20ZD%2028%20March.pdf> (accessed on 16 May 2023).
- Farnese, Patricia. 2014. The Prevention Imperative: International Health and Environmental Governance Responses to Emerging Zoonotic Diseases. *Transnational Environmental Law* 3: 285–309. [CrossRef]
- Four Paws. 2023. Pandemic Treaty ‘Lacks Teeth’. Available online: <https://www.four-paws.org/our-stories/press-releases/pandemic-treaty-draft-lacks-teeth> (accessed on 16 May 2023).
- Friedman, Eric, Alexandra Finch, and Lawrence Gostin. 2022. *Pandemic Treaty: The Conceptual Zero Draft*. Georgetown: O’Neill Institute for National and Global Health Law, Georgetown University, December 5. Available online: <https://oneill.law.georgetown.edu/pandemic-treaty-the-conceptual-zero-draft/> (accessed on 16 May 2023).
- Garcia, Kelli K., and Lawrence O. Gostin. 2012. One Health, One World—The Intersecting Legal Regimes of Trade, Climate Change, Food Security, Humanitarian Crises, and Migration. *Laws* 1: 4–38. [CrossRef]
- Garnier, Julie, Sara Savic, Elena Boriani, Brigitte Bagnol, Barbara Häsler, and Richard Kock. 2020. Helping to Heal Nature and Ourselves through Human-rights-based and Gender-responsive One Health. *One Health Outlook* 2: 1–18.
- Gibb, Rory, David W. Redding, Kai Qing Chin, Christl A. Donnelly, Tim M. Blackburn, Tim Newbold, and Kate E. Jones. 2020. Zoonotic Host Diversity Increases in Human-dominated Ecosystems. *Nature* 584: 398–402. [CrossRef]
- Gilbert, Jérémie, Elizabeth Macpherson, Emily Jones, and Julia Dehm. 2021. The Rights of Nature as a Legal Response to the Global Environmental Crisis? A Critical Review of International Law’s ‘Greening’ Agenda. *Netherlands Yearbook of International Law* 52: 47–74.
- Habibi, Roojin, Gian Luca Burci, Thana C. de Campos, Danwood Chirwa, Margherita Cinà, Stéphanie Dagron, Mark Eccleston-Turner, Lisa Forman, Lawrence O. Gostin, Gorik Ooms, and et al. 2020. Do Not Violate the International Health Regulations during the COVID-19 Outbreak. *The Lancet* 395: 664–66. [CrossRef] [PubMed]
- Han, Barbara, Andrew Kramer, and John Drake. 2016. Global Patterns of Zoonotic Disease in Mammals. *Trends in Parasitology* 32: 565–77. [CrossRef] [PubMed]
- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). 2020. *Escaping the ‘Era of Pandemics’: Workshop on Biodiversity and Pandemics*. Bonn: IPBES.
- Jalloh, Charles. 2021. Pandemics and International Law: The Need to Strengthen International Legal Frameworks after the COVID-19 Global Health Pandemic. *American University International Law Review* 36: 979.
- Kauffman, Craig, and Pamela Martin. 2017. Can Rights of Nature Make Development More Sustainable? Why Some Ecuadorian Lawsuits Succeed and Others Fail. *World Development* 92: 130–32. [CrossRef]
- Kolbett, Elizabeth. 2006. *Field Notes from a Catastrophe: Man, Nature, and Climate Change*. New York: Bloomsbury, p. 87.
- Le Moli, Ginevra. 2023. The Containment Bias of the WHO International Health Regulations. *British Yearbook of International Law* 1. Available online: <https://academic.oup.com/bybil/advance-article/doi/10.1093/bybil/brad001/7040368> (accessed on 16 May 2023).
- Le Moli, Ginevra, Jorge E. Viñuales, Gian Luca Burci, Adam Strobeyko, and Suerie Moon. 2022. The Deep Prevention of Future Pandemics Through a One Health Approach: What Role for A Pandemic Instrument. *Global Health Centre Policy Brief* 2: 15. Available online: <https://repository.graduateinstitute.ch/record/300532?ga=2.259955912.313441605.1673521159-212410167.1662020097> (accessed on 16 May 2023).
- Manhattan Principles on One World, One Health. 2004. Available online: [http://www.oneworldonehealth.org/sept2004/owoh\\_sept04.html](http://www.oneworldonehealth.org/sept2004/owoh_sept04.html) (accessed on 16 May 2023).
- Mishra, Jitendra, Priya Mishra, and Naveen Kumar Arora. 2021. Linkages between Environmental Issues and Zoonotic Diseases: With Reference to Covid-19 Pandemic. *Environmental Sustainability* 4: 455–67. [CrossRef]
- Morin, Jean-Frédéric, and Chantal Blouin. 2019. How Environmental Treaties Contribute to Global Health Governance. *Globalization and Health* 15: 47. [CrossRef]
- Natarajan, Usha, and Kishan Khoday. 2014. Locating Nature: Making and Unmaking International Law. *Leiden Journal of International Law* 27: 573. [CrossRef]
- Negri, Stefania, and Mark Eccleston-Turner. 2022. One Health and Pathogen Sharing: Filling the Gap in the International Health Regulations to Strengthen Global Pandemic Preparedness and Response. *International Organizations Law Review* 19: 188–214.
- Peters, Anne. 2021. COVID-19 as a Catalyst for the (Re-)Constitutionalisation of International Law. In *Crisis Narratives in International Law*. Edited by Makane Moïse Mbengue and Jean D’Aspremont. Leiden: Brill.
- Pfäffle, Miriam, Nina Littwin, and Trevor N. Petney. 2015. The Relationship between Biodiversity and Disease Transmission Risk. *Research and Reports in Biodiversity Studies* 4: 9–20.
- Porras, Ileana. 2014. Appropriating Nature: Commerce, Property, and the Commodification of Nature in the Law of Nations. *Leiden Journal of International Law* 27: 641. [CrossRef]
- Rudall, Jason. 2020. The Natural Remedy for Zoonotic Diseases. *Yearbook of International Environmental Law* 31: 3. [CrossRef]
- Scheinin, Martin. 2020. To Derogate or Not to Derogate? *Opinio Juris*. April 6. Available online: <http://opiniojuris.org/2020/04/06/covid-19-symposium-to-derogate-or-not-to-derogate/> (accessed on 16 May 2023).
- Staiano, Fulvia. 2020. Wildlife Trafficking Under the Lens of International Law: A Threat to the Peace or a Serious Transnational Crime? *Cambridge International Law Journal* 9: 137–53. [CrossRef]



- Stone, Christopher. 1972. Should Trees Have Standing? Towards Legal Rights for Natural Objects. *Southern California Law Review* 45: 450.
- Te Awa Tupua Act. 2017. Available online: <http://www.legislation.govt.nz/act/public/2017/0007/latest/whole.html> (accessed on 16 May 2023).
- Te Urewera Act. 2014. Available online: <http://www.legislation.govt.nz/act/public/2014/0051/latest/whole.html> (accessed on 16 May 2023).
- Toscano-Rivalta, Marco. 2020. Disaster Risk Reduction in Light of the COVID-19 Crisis: Policy and Legal Considerations. *Questions of International Law* 70: 37.
- UN Environment. 2016. *Frontiers Report: Emerging Issues of Environmental Concern*. Nairobi: UNEP, p. 142.
- UN Environment—UNEP and International Livestock Research Institute—ILRI. 2020. *Preventing the Next Pandemic: Zoonotic Diseases and How to Break the Chain of Transmission*. Nairobi: UNEP and ILRI.
- Villarreal, Pedro. 2020. “Can They Really Do That?” States’ Obligations under the International Health Regulations in Light of COVID-19. *Opinio Juris*. March 31. Available online: <http://opiniojuris.org/2020/03/31/covid-19-symposium-can-they-really-do-that-states-obligations-under-the-international-health-regulations-in-light-of-covid-19-part-i/> (accessed on 16 May 2023).
- Villarreal, Pedro. 2022. Pandemic Risk and International Law: Laying the Foundations for Proactive State Obligations. *Yearbook of International Disaster Law* 3: 154–79. [CrossRef]
- Viñuales, Jorge E., Suerie Moon, Ginevra Le Moli, and Gian Luca Burci. 2021. A Global Pandemic Treaty Should Aim for Deep Prevention. *The Lancet* 397: 1791–92. [CrossRef]
- Weissgold, Bruce, P. Knights, S. Lieberman, and R. Mittermeier. 2020. How We Can Use the CITES Wildlife Trade Agreement to Help Prevent Pandemics. *Scientific American*. August 23. Available online: <https://www.scientificamerican.com/article/how-we-can-use-the-cites-wildlife-trade-agreement-to-help-prevent-pandemics/> (accessed on 16 May 2023).
- Whakatupua, Tutohu. 2012. The Crown-Whanganui. Available online: [http://www.wrmtb.co.nz/new\\_updates/TuutohuWhakatupuaFinalSigned.pdf](http://www.wrmtb.co.nz/new_updates/TuutohuWhakatupuaFinalSigned.pdf) (accessed on 16 May 2023).
- Whitford, Amanda. 2021. COVID-19 and Wildlife Farming in China: Legislating to Protect Wild Animal Health and Welfare in the Wake of a Global Pandemic. *Journal of Environmental Law* 33: 57–84. [CrossRef]
- Wilson, Edward. 2002. *The Future of Life*. New York: Knopf, p. 51.
- Wu, Xiaoxu, Yongmei Lu, Sen Zhou, Lifan Chen, and Bing Xu. 2016. Impact of Climate Change on Human Infectious Diseases: Empirical Evidence and Human Adaptation. *Environment International* 86: 14–23.
- Zarifi, Sam, and Kate Powers. 2020. Human Rights in the Time of COVID-19—Front and Centre. *Opinio Juris*. April 6. Available online: <http://opiniojuris.org/2020/04/06/covid-19-human-rights-in-the-time-of-covid-19-front-and-centre/> (accessed on 16 May 2023).
- Zweig, Sophia, Alexander J. Zapf, Chris Beyrer, Debarati Guha-Sapir, and Rohini Haar. 2021. Ensuring Rights while Protecting Health: The Importance of Using a Human Rights Approach in Implementing Public Health Responses to COVID-19. *Health and Human Rights Journal* 23: 173.

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