

HUMAN RIGHTS AND NATURE-BASED STRATEGIES FOR ENVIRONMENTAL PROTECTION AND PREVENTING FUTURE PANDEMICS

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ABSTRACT

This article examines the proposed pandemic treaty, focusing on the Zero Draft released by the World Health Organization, and evaluates its effectiveness in preventing future pandemics. It argues that the current draft inadequately addresses environmental degradation as a key driver of zoonotic spillover and lacks robust mechanisms for implementing and enforcing legal obligations. The paper emphasizes the potential of human rights and rights of nature frameworks to strengthen environmental governance and advance the One Health approach, which integrates human, animal, and environmental health to mitigate pandemic risks. Drawing on rights-based approaches from other contexts, the article suggests these frameworks can drive meaningful policy reform and accountability to curb ecological destruction and biodiversity loss, thereby reducing disease transmission from nature. It critiques the Zero Draft for its limited incorporation of substantive rights, such as the right to health and a healthy environment, and procedural rights like participation and accountability. Furthermore, it highlights the absence of rights of nature, which could enhance environmental protection. The article concludes that a stronger emphasis on rights-based approaches in future drafts is essential to align with the One Health agenda, ensuring both human and environmental health are prioritized to prevent future pandemics. By addressing these gaps, the treaty could better tackle the root causes of zoonotic diseases and foster more effective global health governance.

Keywords: *Human Rights; Rights Of Nature; Environmental Governance; One Health; Pandemic Prevention*

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1. INTRODUCTION

The World Health Organization's (WHO) Intergovernmental Negotiating Body released the Zero Draft of a proposed pandemic instrument on February 1, 2023, which could potentially evolve into a formal WHO convention or agreement focused on pandemic prevention, preparedness, and response (World Health Organization, 2023). Discussions among member states are set to intensify at the 2024 World Health Assembly. The Zero Draft has garnered both commendation and critique. Some experts have praised its provisions, particularly those addressing intellectual property rights, transparency, benefit-sharing, and equity, noting that it surpasses expectations in these areas (Friedman et al., 2022; Deol, 2023). However, the draft falls short in several critical aspects, particularly in its approach to environmental protection through a rights-based lens, which is the primary focus of this article. By emphasizing human rights and the emerging concept of rights of nature, this paper argues that the instrument could better address environmental degradation—a key driver of zoonotic spillover—and strengthen the environmental pillar of the One Health framework, widely recognized as a vital approach to preventing future pandemics.

This article contends that the Zero Draft does not sufficiently integrate rights-based approaches to environmental protection, which are increasingly significant in mitigating ecological harm, biodiversity loss, and the resultant risk of disease transmission from animals to humans. Human rights, such as the right to health and the right to a clean, healthy, and sustainable environment, are deeply intertwined with environmental conditions. Similarly, the rights of nature framework, which grants legal standing to ecosystems, offers a novel way to prioritize environmental health. These approaches can bolster accountability and drive systemic policy changes to curb environmental damage, thus reducing the likelihood of pandemics. The One Health framework, which advocates for the interconnected health of humans, animals, and ecosystems, provides a normative foundation for these efforts, yet the Zero Draft's treatment of its environmental dimension remains inadequate.

To develop this argument, the article proceeds in several stages. First, it reviews existing literature on rights-based approaches to environmental protection and pandemic prevention, situating its contribution within the context of the Zero Draft. This review identifies gaps in scholarship, particularly the limited exploration of how rights-based frameworks can address zoonotic spillover in the context of the proposed treaty. Second, the article explores the growing recognition of the interdependence between environmental degradation and human rights, highlighting how environmental harm undermines rights such as the right to life, health, and a healthy environment. This section draws on global and regional human rights frameworks to underscore this relationship.

Third, the article critically evaluates the Zero Draft through the lens of rights-based approaches, identifying three key deficiencies: its failure to adequately incorporate substantive rights like the right to health and a healthy environment, the lack of

procedural rights ensuring participation and accountability, and the omission of rights of nature. These gaps weaken the draft's ability to address environmental drivers of pandemics effectively. Finally, the article assesses whether the Zero Draft aligns with the One Health approach, concluding that its environmental focus is insufficiently developed. It argues that by prioritizing rights-based approaches in future iterations, negotiators can create a more robust instrument that better serves both human and environmental health, ultimately enhancing global efforts to prevent future pandemics.

By integrating human rights and rights of nature, the pandemic instrument could foster stronger environmental governance, ensuring that states take proactive measures to mitigate zoonotic risks. This approach not only aligns with the One Health agenda but also leverages legal frameworks to hold states accountable for environmental stewardship. The article's analysis underscores the urgency of revising the Zero Draft to address these shortcomings, offering a pathway to a more effective and equitable global health framework.

2. LITERATURE REVIEW

Before evaluating the Zero Draft of the proposed pandemic instrument from a rights-based environmental protection perspective, it is essential to examine the existing scholarly literature on this topic. The body of research consistently highlights that neglecting environmental protection significantly heightens the risk of zoonotic spillover, where pathogens transfer from animals to humans (Farnese, 2014; Morin & Blouin, 2019; Emmenegger & Tschentscher, 1994; De Lucia, 2015; Mishra et al., 2021; Gibb et al., 2020). Numerous studies emphasize that human activities detrimental to the environment, such as deforestation, urbanization, and intensive agriculture, play a critical role in increasing the likelihood of deadly pathogens crossing into human populations (Rudall, 2020; Viñuales et al., 2021; Duvic-Paoli, 2020; Pfäffle et al., 2015). Scholars have identified key anthropogenic drivers of zoonotic disease transmission, including the exploitation of wildlife, urban expansion, rising demand for animal protein, agricultural intensification, unsustainable travel, changes in food supply chains, pollution, overpopulation, habitat destruction, land-use changes, and climate change (Duvic-Paoli, 2020; Gibb et al., 2020; Han et al., 2016; Wilson, 2002; Wu et al., 2016; Garcia & Gostin, 2012). These activities contribute to biodiversity loss, which weakens ecosystems' natural resistance to pathogens by reducing genetic diversity that typically hinders microbial transmission. Alarming, some research estimates that up to a quarter of terrestrial species face extinction due to ecosystem damage, significantly increasing the risk of pandemics by creating pathways for pathogens to spread more easily (Kolbett, 2006).

Recent scholarly work has largely focused on policy and regulatory responses to the COVID-19 pandemic. Several researchers advocate for preventive strategies, such as strengthening environmental governance, regulating the illegal wildlife trade, and improving the human-animal-environment interface (Farnese, 2014; Morin & Blouin, 2019). Others emphasize the need to reinforce or reform the global health law

framework, particularly by adhering to the International Health Regulations, clarifying legal definitions, or enhancing the current legal regime (Habibi et al., 2020; Bartolini, 2020; Burci & Eccleston-Turner, 2019; Eccleston-Turner, 2020; Villarreal, 2020; Le Moli, 2023). The One Health approach, which promotes integrated health strategies across human, animal, and environmental domains, has gained significant scholarly support. Some argue it could serve as a guiding principle for global health reforms or even emerge as a new international constitutional norm (Peters, 2021; Garcia & Gostin, 2012; Negri & Eccleston-Turner, 2022). Additionally, scholars have called for more proactive state obligations and the development of disaster risk reduction frameworks to address pandemic risks (Villarreal, 2022; Toscano-Rivalta, 2020).

Despite these insights, there is a notable gap in the literature regarding how rights-based approaches to environmental protection can specifically address zoonotic spillover in the context of pandemic prevention. While some research explores human rights in the context of pandemics, it primarily focuses on protecting rights during public health responses, such as ensuring vaccine equity, upholding the right to health, and addressing issues of equality and discrimination (Zweig et al., 2021; Jalloh, 2021; Scheinin, 2020; Zarifi & Powers, 2020; Desierto, 2021). Although there is growing attention to environmental protection through rights-based frameworks, comprehensive studies on their application to pandemic prevention remain limited. The recent release of the Zero Draft further underscores this gap, as no in-depth scholarly analysis has yet explored rights-based environmental approaches within this specific context. This article aims to address this shortfall by examining how human rights and rights of nature can enhance environmental governance to mitigate zoonotic risks, particularly within the framework of the proposed pandemic treaty.

By situating its contribution within these scholarly discussions, this article highlights the underexplored potential of rights-based approaches to strengthen environmental protections and prevent pandemics. It seeks to bridge the gap between environmental governance, human rights, and global health frameworks, offering a critical perspective on the Zero Draft's deficiencies and proposing ways to integrate these approaches for more effective pandemic prevention.

3. THE INTERCONNECTION BETWEEN HUMAN RIGHTS AND ENVIRONMENTAL DEGRADATION

This section seeks to underscore the critical linkage between human rights and environmental protection, emphasizing their relevance in preventing pandemics through a rights-based framework. It explores the growing acknowledgment that a healthy environment is essential for the realization of human rights, arguing that environmental degradation poses a significant threat to rights such as life, health, food, and water. By examining global and regional human rights frameworks, this section highlights the interdependence of environmental health and human rights, particularly in the context of zoonotic spillover and pandemic prevention. The failure of the Zero Draft of the WHO pandemic instrument to robustly incorporate these principles

represents a missed opportunity to address the environmental drivers of pandemics effectively.

The connection between environmental integrity and human rights has gained increasing recognition, with both domains now seen as mutually reinforcing. A clean and sustainable environment—characterized by unpolluted air, safe water, and rich biodiversity—is fundamental to the enjoyment of numerous human rights. These include well-established rights like the right to life and health, as well as emerging rights, such as the right to a clean, healthy, and sustainable environment. Conversely, environmental degradation undermines these rights, creating conditions that exacerbate vulnerabilities to zoonotic diseases, which are a primary cause of pandemics. This section draws on international and regional developments to illustrate this relationship and its implications for global health security.

The United Nations Human Rights Council has been instrumental in affirming the linkage between environmental health and human rights. The Special Rapporteur on Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy, and Sustainable Environment has emphasized that pollution and biodiversity loss directly impact human rights. The Special Rapporteur notes that ecosystems provide essential services—such as clean water, fertile soil, and stable climates—that underpin rights to life, health, food, and cultural practices. Environmental degradation, including deforestation and habitat destruction, compromises these services, threatening the ability of individuals and communities to enjoy their rights fully. States, therefore, bear a fundamental obligation to protect ecosystems and biodiversity to safeguard human rights, particularly in the context of preventing zoonotic spillover, which thrives in degraded environments (Gibb et al., 2020; Mishra et al., 2021).

This perspective is further supported by the Human Rights Committee’s General Comment No. 36 on the right to life, which explicitly ties environmental protection to civil and political rights. The Comment articulates that states must address societal conditions that threaten life or prevent dignified living, including environmental degradation. It highlights that ecological harm, such as pollution or climate change, can have long-term consequences for both current and future generations, jeopardizing their ability to enjoy the right to life. The Committee has also ruled in multiple cases that a state’s failure to mitigate environmental damage can violate the right to life, reinforcing the urgency of addressing environmental threats as a human rights issue. These rulings underscore that unsustainable practices, such as those driving biodiversity loss and zoonotic spillover, pose significant risks to fundamental rights (Duvic-Paoli, 2020; Viñuales et al., 2021).

The recognition of the right to a clean, healthy, and sustainable environment as a distinct human right marks a significant milestone in global human rights law. In 2021, the UN Human Rights Council formally endorsed this right, followed by the UN General Assembly in 2022. These developments reflect a growing consensus that a healthy environment is a prerequisite for human well-being and that states have a

responsibility to maintain ecological conditions that support rights fulfillment. This right is particularly relevant to pandemic prevention, as environmental degradation—such as habitat destruction and wildlife trade—creates pathways for zoonotic pathogens to transfer from animals to humans. By prioritizing environmental protection, states can reduce these risks, aligning human rights obligations with global health objectives (Morin & Blouin, 2019; Farnese, 2014).

Regional human rights systems have further strengthened the connection between environmental health and human rights, offering valuable precedents for integrating these principles into pandemic prevention frameworks. The African Charter on Human and Peoples' Rights, under Article 24, explicitly guarantees the right to a “general satisfactory environment favorable to their development.” The African Commission on Human and Peoples' Rights has elaborated on this right, emphasizing that states must take proactive measures to prevent environmental harm and pollution. These measures include conducting environmental and social impact assessments before industrial projects, ensuring public access to the results, and protecting vulnerable communities from the adverse effects of environmental degradation. The Commission also underscores the importance of meaningful public participation in environmental decision-making, particularly for indigenous and marginalized groups, to ensure their rights are upheld (Farnese, 2014; Garcia & Gostin, 2012).

In the Inter-American human rights system, the linkage between environmental degradation and human rights violations is well-established. The Inter-American Commission on Human Rights has noted that environmental harm can infringe upon rights enshrined in the American Convention on Human Rights, including the rights to life, personal safety, and property. In a landmark advisory opinion, the Inter-American Court of Human Rights clarified that a healthy environment is essential for human rights realization, imposing obligations on states to prevent significant environmental harm, both domestically and transnationally. The case of *Lhaka Honhat Association (Our Land) v. Argentina* further highlighted the disproportionate impact of environmental degradation on indigenous communities, particularly from modern agricultural practices that cause pollution and threaten food security. This ruling emphasizes the need for targeted protections to address the vulnerabilities of communities living in fragile ecosystems, which are often hotspots for zoonotic spillover (De Lucia, 2015; Rudall, 2020).

The European Court of Human Rights has similarly recognized that environmental degradation can violate rights protected under the European Convention on Human Rights. Specifically, the Court has ruled that environmental harm may breach Article 8, which guarantees the right to respect for private and family life, home, and correspondence. In several cases, it has also linked environmental damage to violations of the right to life, reinforcing the direct relationship between ecological conditions and fundamental rights. Notably, the Court has indicated that states may be held accountable for transboundary environmental harm if it affects individuals' rights, expanding the

scope of state responsibility. These precedents highlight the critical role of environmental protection in upholding human rights and the potential for legal frameworks to address the environmental drivers of pandemics (Emmenegger & Tschentscher, 1994; Pfäffle et al., 2015).

Despite these advancements, the Zero Draft of the WHO pandemic instrument fails to robustly integrate rights-based approaches to environmental protection, a significant oversight given the role of environmental degradation in zoonotic spillover. The draft's limited engagement with human rights principles, such as the right to a healthy environment, undermines its ability to address the root causes of pandemics effectively. Incorporating these principles would provide a legal foundation for compelling states to mitigate environmental risks, such as deforestation, pollution, and biodiversity loss, which facilitate pathogen transmission. For example, recognizing the right to a healthy environment could guide states in regulating land-use changes and wildlife trade, both of which increase zoonotic risks. Similarly, a rights-based approach would empower communities to hold governments accountable for environmental stewardship, ensuring that pandemic prevention measures are both inclusive and effective (Mishra et al., 2021; Gibb et al., 2020).

The interdependence of human rights and environmental health is further underscored by the One Health framework, which emphasizes the interconnectedness of human, animal, and environmental health. Environmental degradation weakens ecosystem resilience, reducing biodiversity and increasing the likelihood of zoonotic spillover. By integrating human rights principles, the pandemic instrument could align with One Health, prioritizing ecosystem protection as a critical component of global health security. For instance, ensuring access to clean water and air—key determinants of the right to health—can reduce vulnerabilities to disease outbreaks. Similarly, protecting biodiversity supports ecosystem services that mitigate pathogen transmission, aligning human rights obligations with environmental governance (Garcia & Gostin, 2012; Negri & Eccleston-Turner, 2022).

In conclusion, the growing recognition of the linkage between human rights and environmental protection provides a compelling framework for addressing the environmental drivers of pandemics. International and regional human rights systems have established that a healthy environment is essential for the realization of rights to life, health, and other fundamental protections. The Zero Draft's failure to incorporate these principles represents a missed opportunity to leverage human rights law to strengthen environmental governance and prevent zoonotic spillover. By embedding rights-based approaches, the instrument could compel states to prioritize ecological integrity, reduce pandemic risks, and ensure accountability. This perspective is particularly critical in the context of One Health, which underscores the need for integrated policies to safeguard human, animal, and environmental health. Future drafts of the pandemic instrument must address these gaps to create a robust and effective framework for global health security.

4. THE PANDEMIC INSTRUMENT AND THE RIGHTS TO HEALTH AND A HEALTHY ENVIRONMENT

The Zero Draft of the proposed World Health Organization (WHO) pandemic instrument, developed by the Intergovernmental Negotiating Body, aims to establish a framework for pandemic prevention, preparedness, and response. However, it has faced criticism for its limited integration of human rights principles, particularly those related to environmental protection, which are critical for addressing zoonotic spillover—a key driver of pandemics. This section evaluates the Zero Draft’s shortcomings in incorporating two fundamental human rights: the right to health and the right to a clean, healthy, and sustainable environment. These deficiencies weaken the instrument’s ability to tackle the environmental roots of pandemics effectively. By adopting a more robust rights-based approach, the instrument could better address the ecological factors contributing to disease transmission, ensuring stronger global health governance (World Health Organization, 2023).

A primary critique of the Zero Draft is its inadequate recognition of the interplay between environmental conditions and the right to health. Article 4, titled “Guiding Principles and Rights,” acknowledges the right to health, defining it as “the enjoyment of the highest attainable standard of health, encompassing complete physical, mental, and social well-being, as a fundamental right for all individuals, regardless of age, race, religion, political beliefs, or socio-economic status.” While this inclusion is a positive step, the definition is narrowly framed, drawing primarily from the WHO Constitution’s conceptualization of health. This approach fails to incorporate the broader, more progressive understanding of the right to health articulated in international frameworks, such as Article 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR). The ICESCR defines the right to health as encompassing not only physical and mental well-being but also the underlying determinants of health, including environmental and industrial hygiene (Habibi et al., 2020).

The UN Committee on Economic, Social and Cultural Rights, in General Comment No. 14, further clarifies that the right to health includes access to safe water, adequate sanitation, safe working conditions, and a healthy environment. By adopting this expansive definition, the Zero Draft could emphasize the critical role of environmental factors in achieving health outcomes, thereby strengthening its approach to pandemic prevention. Environmental degradation, such as deforestation, pollution, and biodiversity loss, creates conditions that facilitate zoonotic spillover, increasing the risk of pathogens transferring from animals to humans (Gibb et al., 2020; Mishra et al., 2021). Explicitly linking the right to health to environmental protection would compel states to address these drivers as part of their obligations under the pandemic instrument, promoting policies that enhance ecological integrity to safeguard human health (Garcia & Gostin, 2012).

The Zero Draft’s omission of the right to a clean, healthy, and sustainable environment is equally concerning, given its growing recognition in international law.

In 2021, the UN Human Rights Council formally endorsed this right, followed by the UN General Assembly in 2022, signaling a global consensus on its importance. This right imposes obligations on states to maintain environmental conditions that support health and well-being, directly relevant to preventing zoonotic spillover. Including this right in the Zero Draft would clarify state responsibilities, such as implementing measures to curb habitat destruction, reduce pollution, and protect biodiversity—key factors in mitigating pandemic risks (Morin & Blouin, 2019; Farnese, 2014). It would also highlight the interdependence between the right to a healthy environment and the right to health, as both are essential for creating conditions that minimize disease transmission from animals to humans.

The absence of the right to a healthy environment in the Zero Draft represents a missed opportunity to leverage an emerging norm that could enhance environmental governance. For example, recognizing this right could guide states in prioritizing conservation efforts, regulating land-use changes, and controlling activities like wildlife trade that increase zoonotic risks. These measures are critical for addressing the root causes of pandemics, as environmental degradation disrupts ecosystems and facilitates pathogen transmission (Duvic-Paoli, 2020; Viñuales et al., 2021). A rights-based approach would provide a legal foundation for holding states accountable for implementing such measures, ensuring that environmental protection is prioritized as a core component of pandemic prevention.

The limited integration of these substantive rights undermines the Zero Draft's potential to address the environmental drivers of zoonotic spillover effectively. A broader interpretation of the right to health, as articulated in the ICESCR and General Comment No. 14, would emphasize the importance of addressing social and environmental determinants of health, such as access to clean air and water, which are essential for preventing disease outbreaks. Similarly, incorporating the right to a clean, healthy, and sustainable environment would align the instrument with recent global developments, providing a framework for states to fulfill their pandemic prevention commitments through environmental stewardship (Negri & Eccleston-Turner, 2022).

By failing to embed these rights, the Zero Draft misses the chance to create a robust framework that links human health with environmental health. Rights-based approaches would not only reinforce the importance of ecological integrity for human well-being but also empower communities to hold states accountable for mitigating zoonotic risks. For instance, recognizing the right to a healthy environment could lead to stricter regulations on activities that degrade ecosystems, such as deforestation and intensive agriculture, which are known to increase pandemic risks (Pfäffle et al., 2015; Rudall, 2020). Similarly, a comprehensive approach to the right to health would encourage states to address environmental factors that undermine health outcomes, fostering a holistic strategy for global health security.

In conclusion, the Zero Draft's limited engagement with the rights to health and a healthy environment weakens its ability to address the environmental roots of

pandemics. By adopting a broader definition of the right to health, as outlined in the ICESCR, the instrument could better highlight the role of environmental factors in health outcomes. Likewise, incorporating the right to a clean, healthy, and sustainable environment would align the instrument with emerging global norms, compelling states to prioritize ecological protection as a core component of pandemic prevention. These enhancements would strengthen the Zero Draft, ensuring it effectively tackles the environmental drivers of zoonotic spillover and promotes a comprehensive approach to global health governance.

5. THE PANDEMIC INSTRUMENT, PUBLIC PARTICIPATION, AND ACCOUNTABILITY MECHANISMS

The success of the proposed World Health Organization (WHO) pandemic instrument hinges on effective public participation and robust accountability mechanisms to address the environmental drivers of zoonotic spillover and prevent future pandemics. The Zero Draft, developed by the Intergovernmental Negotiating Body, falls short in these areas, lacking provisions for meaningful community involvement and enforceable state obligations. This section critiques the Zero Draft's deficiencies in fostering participatory processes and establishing accountability, emphasizing their critical role in mitigating environmental factors that increase pandemic risks and protecting vulnerable populations (World Health Organization, 2023).

Public participation is a cornerstone of international environmental law, recognized as essential for inclusive and effective decision-making. Principle 10 of the 1992 Rio Declaration on Environment and Development highlights that environmental issues are best addressed with the involvement of all concerned citizens, a principle reflected in numerous environmental treaties (Duvic-Paoli, 2020). This participatory approach is vital for safeguarding the health and well-being of present and future generations, particularly in areas prone to zoonotic spillover, such as fragile ecosystems. Engaging local and indigenous communities ensures that policies reflect their unique perspectives and address the environmental and social factors contributing to disease transmission risks. By prioritizing participation, the pandemic instrument could develop targeted strategies to reduce ecological degradation, such as deforestation and wildlife trade, which facilitate pathogen spillover (Gibb et al., 2020; Farnese, 2014).

However, the Zero Draft provides limited mechanisms for meaningful public participation, particularly for indigenous communities and those in vulnerable environments. While Article 4 acknowledges the needs of vulnerable populations, including indigenous peoples, it fails to establish concrete channels for their direct involvement in the instrument's development and implementation. This omission risks sidelining communities disproportionately affected by environmental degradation, undermining the instrument's ability to address their specific challenges (Morin & Blouin, 2019). To strengthen its framework, the Zero Draft should explicitly guarantee the participation of local communities and their representative organizations, ensuring

their insights shape global pandemic prevention policies. Such inclusion aligns with international norms on public participation and enhances the instrument's legitimacy and effectiveness (Garcia & Gostin, 2012).

Equally critical is the Zero Draft's lack of a robust accountability framework to enforce state compliance with environmental and health obligations. Effective accountability mechanisms are essential to ensure states implement measures to address environmental drivers of pandemics, such as habitat destruction and biodiversity loss (Mishra et al., 2021). Article 22 of the Zero Draft mentions "oversight mechanisms" to promote compliance, but these are vaguely defined and deferred to the first meeting of the instrument's governing body. This ambiguity raises concerns that the resulting mechanism may lack the authority to enforce compliance, potentially limiting it to advisory roles (Viñuales et al., 2021). A weak accountability framework would hinder the instrument's ability to drive meaningful action, allowing states to evade responsibilities without consequences.

A strong, independent accountability mechanism is essential to compel states to address zoonotic spillover risks effectively. Such a mechanism should have the authority to evaluate state efforts in preventing environmental degradation, using the best available scientific evidence on conservation and disease transmission. It should also assess compliance in the context of human rights obligations, ensuring states uphold their commitments to protect health and environmental rights (Negri & Eccleston-Turner, 2022). For example, it could monitor state actions to regulate land-use changes and wildlife trade, both of which increase pandemic risks (Pfäffle et al., 2015). By incorporating robust accountability measures, the Zero Draft could ensure states take proactive steps to mitigate ecological drivers of pandemics, enhancing global health security.

The absence of strong participation and accountability mechanisms in the Zero Draft weakens its potential to address the environmental roots of zoonotic spillover. Prioritizing public participation, particularly for indigenous and vulnerable communities, would ensure that policies are inclusive and responsive to local realities, reducing disease transmission risks (Rudall, 2020). Similarly, a robust accountability framework would hold states accountable for implementing effective prevention measures, aligning with international human rights and environmental law principles. These enhancements are critical for creating a pandemic instrument that effectively safeguards human and environmental health.

In conclusion, the Zero Draft's inadequate provisions for public participation and accountability represent significant shortcomings that limit its effectiveness in preventing pandemics. By prioritizing the inclusion of local and indigenous communities, the instrument could better address the environmental and social drivers of zoonotic spillover. Establishing a strong, independent accountability mechanism would ensure states fulfill their obligations to mitigate ecological risks. These changes

would align the Zero Draft with international norms, strengthening its capacity to promote global health security and prevent future pandemics.

6. THE PANDEMIC INSTRUMENT AND RIGHTS OF NATURE FRAMEWORKS

To effectively address the environmental drivers of zoonotic spillover and strengthen pandemic prevention, the proposed World Health Organization (WHO) pandemic instrument must adopt a holistic approach that recognizes the intrinsic link between human health and the natural world. The rights of nature framework, which grants legal standing to ecosystems and natural entities, offers a transformative approach to environmental protection that aligns with indigenous perspectives and emerging legal theories. These perspectives view nature as a living entity with inherent value, as exemplified by concepts like “Pacha Mama” in South America or “Mother Earth” among First Nations. This section critiques the Zero Draft of the WHO pandemic instrument for its failure to incorporate rights of nature approaches, arguing that their inclusion could enhance environmental governance, reduce zoonotic risks, and align with the One Health framework. By embedding these principles, the instrument could foster proactive measures to prevent ecological degradation and bolster global health security (World Health Organization, 2023).

The rights of nature framework marks a significant shift from the traditional view of nature as a mere resource for human exploitation, a perspective long entrenched in international law. Instead, it recognizes ecosystems, species, and natural entities as having legal personhood and inherent rights, such as the right to exist, thrive, and regenerate without human interference. These rights also include maintaining clean air, water, and soil; preserving biodiversity and ecological integrity; restoring ecosystems damaged by human activities; and ensuring legal representation for nature through community or organizational advocacy (De Lucia, 2015). This approach challenges anthropocentric conservation models that prioritize economic gain, promoting a sustainable paradigm that values nature for its intrinsic worth. By integrating these principles, the pandemic instrument could compel states to address environmental degradation—such as habitat destruction and biodiversity loss—that increases the risk of zoonotic spillover (Gibb et al., 2020; Mishra et al., 2021).

Several countries have successfully implemented rights of nature frameworks, demonstrating their practical applicability. Ecuador’s 2008 Constitution, for instance, recognizes nature as a vital component of human existence, granting it legal rights to exist, persist, and regenerate. In a landmark 2011 case, an Ecuadorian court halted the dumping of excavation material into the Vilcabamba River, citing these rights. Similarly, New Zealand granted legal personhood to the Whanganui River in 2012 through an agreement with the Whanganui tribe, appointing guardians to protect its ecosystem. In 2014, New Zealand’s parliament recognized Te Urewera National Park as a legal entity, ensuring its preservation as a living system. Bolivia’s 2010 Law of the Rights of Mother Earth establishes nature as a living entity with rights to life, regeneration, and restoration, setting a precedent for environmental protection. These

approaches have also gained traction in countries like Colombia, Bangladesh, India, Uganda, and Spain, reflecting a growing global movement to recognize nature's legal standing (Rudall, 2020).

Despite these domestic advancements, rights of nature have not been widely adopted in multilateral forums. The 2012 UN Conference on Sustainable Development's declaration, "The Future We Want," emphasized living in harmony with nature but stopped short of endorsing rights of nature explicitly. Some UN General Assembly resolutions have shown interest in these approaches, and the 2010 Universal Declaration on the Rights of Mother Earth, adopted at the World People's Conference on Climate Change, seeks to advance this agenda. However, this declaration lacks binding force, and no international treaty currently enshrines rights of nature (Morin & Blouin, 2019). The Zero Draft's failure to incorporate these principles represents a missed opportunity to leverage a growing body of domestic practice to strengthen environmental protection in the context of pandemic prevention.

The absence of rights of nature in the Zero Draft undermines its ability to address the environmental drivers of zoonotic spillover, such as habitat destruction, biodiversity loss, and unsustainable land use. Recognizing ecosystems' legal rights could compel states to adopt proactive measures to prevent ecological degradation, rather than merely responding to disease outbreaks after they occur. For instance, granting ecosystems the right to exist and thrive could lead to stricter regulations on activities like deforestation and wildlife trade, which increase pathogen transmission risks (Farnese, 2014; Pfäffle et al., 2015). Similarly, the right to restoration could mandate the rehabilitation of degraded habitats, reducing vulnerabilities that facilitate zoonotic spillover. These measures would align with the One Health framework, which emphasizes the interconnectedness of human, animal, and environmental health, ensuring that ecosystem resilience and biodiversity conservation are prioritized as critical components of global health security (Garcia & Gostin, 2012).

Indigenous knowledge, which often informs rights of nature frameworks, provides valuable insights into sustainable environmental practices that reduce disease risks. Indigenous communities have long recognized the interdependence of human well-being and nature, advocating for practices that maintain ecological balance. By incorporating these perspectives, the Zero Draft could foster policies that draw on traditional ecological knowledge to prevent zoonotic spillover (Negri & Eccleston-Turner, 2022). The failure to include rights of nature not only overlooks a promising tool for environmental governance but also weakens the instrument's ability to adopt a comprehensive, preventive approach to pandemics.

Integrating rights of nature would also enhance accountability by allowing communities to act as stewards or guardians of ecosystems, enabling them to hold governments and corporations accountable for environmental harm. This aligns with domestic frameworks, such as those in Ecuador and New Zealand, where legal mechanisms empower communities to advocate for nature's interests (Viñuales et al.,

2021). By embedding such mechanisms in the pandemic instrument, negotiators could ensure that states take concrete steps to mitigate zoonotic risks, complementing the Zero Draft's oversight provisions. This approach would also build on the momentum of domestic legal innovations, encouraging states to align national policies with emerging global norms for environmental protection and pandemic prevention.

The Zero Draft's silence on rights of nature represents a significant oversight, particularly given the scientific consensus that environmental degradation drives zoonotic spillover. By recognizing nature's legal rights, the instrument could promote policies that prevent ecological harm and reduce pandemic risks. For example, protecting biodiversity and restoring ecosystems could strengthen natural barriers to pathogen transmission, aligning with the One Health agenda's emphasis on environmental health (Peters, 2021). Future drafts should incorporate rights of nature principles to create a more robust and forward-thinking framework for global health governance.

In conclusion, the Zero Draft's failure to integrate rights of nature frameworks represents a missed opportunity to address the environmental roots of pandemics. These frameworks offer a transformative approach to environmental protection, recognizing nature's intrinsic value and its critical role in human health. Drawing on domestic examples from Ecuador, New Zealand, and Bolivia, the instrument could promote policies that prevent ecological degradation and reduce zoonotic spillover risks. By aligning with the One Health framework and incorporating indigenous knowledge, rights of nature principles would enhance the instrument's effectiveness in fostering proactive environmental governance. Future drafts must seize this opportunity to embed these principles, ensuring a comprehensive approach to pandemic prevention that safeguards human, animal, and environmental health.

7. ONE HEALTH AND RIGHTS-BASED FRAMEWORKS FOR PANDEMIC PREVENTION

The One Health framework, which underscores the interconnectedness of human, animal, and environmental health, provides a critical lens for addressing the environmental drivers of zoonotic spillover and preventing future pandemics. By integrating rights-based approaches—encompassing human rights and the rights of nature—this framework can be significantly strengthened, creating a robust mechanism to tackle the root causes of pandemics, such as habitat destruction and biodiversity loss. The Zero Draft of the World Health Organization's (WHO) proposed pandemic instrument, however, fails to fully leverage the One Health approach, particularly in its environmental dimension, and lacks a comprehensive integration of rights-based principles. This section critiques the Zero Draft's shortcomings in embracing One Health and argues that embedding human rights and rights of nature frameworks could enhance its capacity to prevent zoonotic spillover, fostering a more holistic and proactive approach to global health governance (World Health Organization, 2023).

The One Health concept seeks to bridge the regulatory and institutional gaps between human, animal, and environmental health, promoting interdisciplinary collaboration to optimize health outcomes across these domains. It recognizes that the health of humans, animals, and ecosystems is deeply interlinked, making it a vital normative framework for mitigating zoonotic diseases, which often originate at the human-animal-environment interface. Environmental degradation—such as deforestation, wildlife trade, and climate change—increases the likelihood of pathogen spillover, necessitating integrated policies that address these complex factors (Gibb et al., 2020; Mishra et al., 2021). Rights-based approaches, including the rights to health, a healthy environment, and the rights of nature, complement One Health by providing legal and ethical tools to protect ecosystems and hold states accountable for environmental harm, thereby reducing pandemic risks (Garcia & Gostin, 2012; Negri & Eccleston-Turner, 2022).

Efforts to operationalize One Health have included initiatives like the 2004 Manhattan Principles and the 2019 Berlin Principles, which advocate for ecosystem well-being and address environmental challenges such as climate change and antimicrobial resistance. These principles guide policymakers, scientists, and civil society in adopting comprehensive strategies to prevent epidemics and epizootic diseases. The One Health High-Level Expert Panel defines One Health as an integrated approach to sustainably balance and optimize the health of people, animals, and ecosystems, emphasizing their interdependence. This definition highlights the critical role of environmental health in global health security, as ecological degradation directly contributes to zoonotic spillover (Peters, 2021). However, implementing One Health remains challenging, particularly in prioritizing the environmental pillar—encompassing biodiversity conservation, ecosystem resilience, and environmental services—which is often overshadowed by human and animal health considerations (Morin & Blouin, 2019).

The Zero Draft's treatment of One Health reflects these challenges, failing to adequately develop its environmental dimension. Article 18, dedicated to One Health, calls for strengthened efforts in pandemic prevention but lacks binding obligations to address environmental drivers of zoonotic spillover, such as habitat loss, land-use changes, and pollution (Farnese, 2014). The instrument's vague language and absence of specific guidance on integrating environmental governance with health policies weaken its ability to compel states to act proactively. For example, Article 18(3) mentions integrating interventions into pandemic prevention plans to address factors like climate change, land-use change, wildlife trade, desertification, and antimicrobial resistance. However, the language is aspirational rather than prescriptive, lacking clarity on the scope or scale of required actions (Duvic-Paoli, 2020). This ambiguity undermines the instrument's potential to drive meaningful environmental reforms, such as regulating land use or protecting biodiversity, which are critical for reducing pathogen transmission risks (Pfäffle et al., 2015).

Furthermore, the Zero Draft does not foster sufficient integration between international environmental and health governance frameworks, a key component of One Health. Article 18(5) expresses a commitment to strengthen synergies with existing environmental instruments, such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the UN Framework Convention on Climate Change (UNFCCC), and the Convention on Biological Diversity (CBD). However, this commitment is expressed in non-binding, hortatory terms, lacking actionable measures to connect “upstream” prevention (e.g., environmental conservation) with “downstream” prevention (e.g., health regulations like the International Health Regulations) (Viñuales et al., 2021). A robust pandemic instrument should establish clear mechanisms for information sharing and collaboration across these regimes, enabling the identification of zoonotic spillover risks and facilitating targeted interventions. For instance, integrating surveillance systems from environmental and health sectors could help pinpoint high-risk areas and inform proactive strategies (Habibi et al., 2020).

The fragmented approach to One Health implementation, with disparate organizations addressing human, animal, and environmental health, further limits its effectiveness. The One Health High-Level Expert Panel, for example, focuses on understanding disease emergence but lacks a specific mandate to address international environmental governance. To overcome this, proposals have emerged for an intergovernmental council dedicated to pandemic prevention, modeled on the Intergovernmental Panel on Climate Change (IPCC). Such a council could operate at the intersection of One Health’s three pillars, conducting research on zoonotic disease emergence, identifying high-risk areas, and developing monitoring frameworks (Le Moli, 2023). Importantly, it could clarify the interplay between environmental health, human rights, and rights of nature, highlighting how violations of these rights increase pandemic risks. Embedding such a council in the pandemic instrument would ensure a coordinated, science-driven approach to prevention, grounded in One Health and rights-based principles.

Rights-based approaches are integral to advancing One Health, as they provide legal mechanisms to protect environmental health and ensure state accountability. The right to health, as articulated in the International Covenant on Economic, Social and Cultural Rights, emphasizes the need for clean air, water, and ecosystems to support human well-being. Similarly, the right to a clean, healthy, and sustainable environment, recognized by the UN Human Rights Council and General Assembly, imposes obligations on states to maintain ecological conditions that prevent zoonotic spillover (Villarreal, 2022). The rights of nature framework, which grants legal standing to ecosystems, further aligns with One Health by prioritizing ecological integrity as a prerequisite for health security. These approaches compel states to adopt policies that prevent environmental degradation, such as regulating wildlife trade or restoring degraded habitats, thereby reducing zoonotic risks (Rudall, 2020; De Lucia, 2015).

The Zero Draft's limited engagement with One Health and rights-based approaches undermines its ambition to create a binding international instrument. To address this, One Health should be a central pillar woven throughout the instrument, rather than confined to a single article. The European Union's textual proposals for the Zero Draft offer a stronger model, advocating for specific commitments to infection prevention, including improving food and water hygiene, biosecurity, and animal welfare. The EU also proposes obligations for pathogen surveillance in animals and vector-borne diseases, as well as prohibiting trade in high-risk species. Additionally, it suggests establishing an Implementation and Compliance Committee and an expert body to provide scientific advice, enhancing accountability and evidence-based policymaking (Friedman et al., 2022). These proposals demonstrate how the Zero Draft could be strengthened to align with One Health and rights-based principles.

Integrating human rights and rights of nature into the One Health framework would empower communities to hold states accountable for environmental and health commitments. For example, recognizing the right to a healthy environment could guide states in implementing conservation measures that reduce zoonotic risks, while rights of nature frameworks could mandate ecosystem restoration to strengthen natural barriers to pathogen transmission (Toscano-Rivalta, 2020). These approaches also align with indigenous knowledge, which emphasizes sustainable practices that maintain ecological balance, offering valuable insights for pandemic prevention (Negri & Eccleston-Turner, 2022).

In conclusion, the Zero Draft's failure to fully embrace One Health and rights-based approaches represents a missed opportunity to address the environmental roots of pandemics. By integrating human rights and rights of nature, the instrument could compel states to prioritize ecosystem conservation and biodiversity protection, reducing zoonotic spillover risks. A robust One Health framework, supported by binding obligations and institutional coordination, would enhance the instrument's effectiveness. Future drafts should incorporate specific, enforceable measures to address environmental drivers, establish mechanisms for cross-sectoral collaboration, and embed rights-based principles to ensure a comprehensive approach to pandemic prevention. By doing so, the instrument can fulfill the promise of One Health, safeguarding human, animal, and environmental health for present and future generations.

8. CONCLUSIONS

This article has evaluated the potential of human rights and rights of nature frameworks to address environmental degradation, biodiversity loss, and zoonotic disease transmission within the context of the WHO's Zero Draft pandemic instrument. The analysis highlights critical deficiencies in the draft, particularly its failure to adequately address environmental degradation as a primary driver of zoonotic spillover and its lack of robust mechanisms for enforcing legal obligations. This gap is significant, as no global mechanism currently exists to specifically tackle the origins of

zoonotic diseases. Integrating rights-based approaches, including human rights and the emerging concept of nature's rights, offers a promising pathway to drive policy reform and enhance accountability for environmental harm, as evidenced in climate change litigation. These frameworks can strengthen environmental governance, reducing pandemic risks by prioritizing ecosystem protection.

By incorporating human rights and rights of nature, the pandemic instrument could better align with the One Health agenda, which emphasizes the interconnectedness of human, animal, and environmental health. This alignment would enable the instrument to address the root causes of zoonotic spillover, such as habitat destruction and unsustainable land use, more effectively. While rights-based approaches and One Health have limitations, they provide essential normative tools to guide inclusive and effective regulations for pandemic prevention. These frameworks also empower communities to hold states accountable, ensuring environmental and health commitments are met. Future drafts of the instrument must prioritize these approaches to create a comprehensive framework that addresses both ecological and social dimensions of global health security. Further research is needed to refine how these principles can be integrated into subsequent iterations to enhance the instrument's effectiveness in preventing future pandemics.

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