

Tomorrow's Stewards: The Case for a Unified International Framework on the Environmental Rights of Children

KAREN E. MAKUCH, SUNYA ZAMAN, AND MIRIAM R. ACZEL

Abstract

This paper evaluates an approach for strengthening environmental rights for children to safeguard child health. We focus on children as beneficiaries of environmental rights on account of their vulnerability to environmental impacts on their physical and mental health. Current legal frameworks, unless explicitly identifying children as beneficiaries, arguably tend to be adult-centric. Our goal here is to develop a comprehensive rights-based framework to ensure that children are protected against adverse environmental impacts. We argue that approaches that safeguard children's rights to life, health, and education should include environment-related issues, standards, and protections for those rights to be fully implemented. We propose employing sustainable development as a framework under which to develop an international treaty to promulgate the environmental rights of the child, thereby promoting health, environmental stewardship, and quality of life for children and future generations. We further argue that children's environmental rights extend beyond basic "needs"—such as clean air, clean water, sanitation, and a healthful environment, among others—to include the right to benefit from access to nature of a certain quality and the wealth of educational, recreational, developmental, and health benefits that come with ensuring protection of the environment for children.

KAREN E. MAKUCH is a lecturer in environmental law at the Centre for Environmental Policy, Imperial College, London, UK.

SUNYA ZAMAN is a PhD student and research assistant at the School of Community and Regional Planning, University of British Columbia, Vancouver, Canada.

MIRIAM R. ACZEL is a President's Scholar PhD candidate at the Centre for Environmental Policy, Imperial College, London, UK, and co-director of the Aczel Foundation for Research and Education in Science and Mathematics.

Please address correspondence to Karen E. Makuch. Email: k.e.makuch@imperial.ac.uk.

Competing interests: None declared.

Copyright © 2019 Makuch, Zaman, and Aczel. This is an open access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original author and source are credited.

Introduction

As children face increasing ecological and social challenges, such as pollution, health risks, climate change, land degradation, poverty, and lack of access to education, among others, advancing environmental human rights has never been more important. Further, a growing body of research that links reduced exposure or time spent outdoors to a decline in child mental well-being adds urgency to our argument.¹ The adverse impacts of environmental degradation breach both environmental and human rights.² Given that children have historically suffered from underrepresentation in environmental protection, an approach based on human rights may bring benefits in environmental advocacy.³ Though not all stakeholders are morally compelled to implement the environmental rights of children, we concede that some form of human rights-based legislation would arguably make it difficult for “offenders” to sidestep the moral obligation to safeguard the health and environmental well-being of children.⁴

Environmental rights, as defined by the United Nations Environment Programme, include both substantive and procedural rights.⁵ Substantive rights “include those in which the environment has a direct effect on the existence or the enjoyment of the right itself” and include both civil and political rights, as well as cultural and social rights, such as the rights to “health, water, food, and culture in addition to collective rights affected by environmental degradation,” including indigenous peoples’ rights.⁶ Procedural rights represent an important intersection between human rights law and environmental law, as they prescribe actions that states must take to enforce legal rights. They include access to information and participation in decision-making, access to justice, and other rights.⁷ Environmental rights can also be a useful precursor to safeguarding the health of children, particularly in the absence of a sound environmental regulatory framework.

For our purposes, we define a child in accordance with article 1 of the United Nations Convention on the Rights of the Child, which

states that “a child means every human being below the age of eighteen years unless under the law applicable to the child, majority is attained earlier.”⁸ Typically, children have not been independently or explicitly represented or considered in the setting of environmental standards, environmental law-making, or environmental rights discourse, yet they are its victims.⁹

We present five arguments in this paper:

1. Much of the multilateral legislation designed to address environmental issues ought to benefit the child as a distinct recipient, particularly if interpreted and applied purposefully with the child in mind, resulting in improved standards of health and well-being for the child and increased environmental protection and standards.
2. Children would benefit from higher environmental standards than those currently prescribed in international legal instruments, given that they are physiologically more vulnerable than adults to environmental pollution and other adverse environmental impacts.¹⁰
3. More concerted action is needed to safeguard the health of children relative to substantive environmental measures (such as access to clean water).¹¹
4. Providing children with environmental rights is a prerequisite to attaining sustainable development in the future as adults.
5. There are currently no international standards (and very few national ones) on the environmental rights of the child per se.

Background: Sustainable development as a framework for the environmental rights of children

The 1987 Brundtland Commission report, *Our Common Future*, articulated the concept of sustainable development within the international community, making explicit reference to “needs”:

Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future

*generations to meet their own needs. The concept of sustainable development does imply limits—not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities.*¹²

Furthermore, chapter 25 of the 1992 United Nations Conference on Environment and Development's nonbinding "action plan," or Agenda 21, specifically addresses children and youth in sustainable development. We argue that the health and well-being of current and future generations ought to be the focal point of any current legislation or policy developments that promote sustainability and positive environmental protection for the needs of children.¹³ Children *need* to breathe clean air. Children *need* clean drinking water. Children *need* access to nature because of its benefits for health and well-being. We interpret the concept of needs within the spirit of the Brundtland Commission, as this provides a useful link between human rights and environmental objectives, so that children might have lives of a certain environmental quality.

Dominic McGoldrick suggests that "sustainable development can be structurally conceived as having a [three-] pillared, temple-like structure composed of international environmental law, international human rights law and international economic law ... The emergence of sustainable development has coincided with a broadly increasing consensus in international human rights."¹⁴ This interpretation of sustainable development aligns with our arguments for the environmental rights of children, as the attainment of human rights standards is contingent on the attainment of sustainable development standards, and vice versa.

Further, it can be argued that we have seen a revival of the link between human rights and the environment over the past few decades, spearheaded by regulatory and policy developments related to climate change (for example, the 2015 Paris Agreement).¹⁵ We are now seeing children striking from school to campaign against perceived inaction on climate change, as well as children suing governments for failure to respond to pressing climate needs, bolstered by support from the United

Nations (UN) Special Rapporteur on human rights and the environment.¹⁶ The international community is awakening to the notion of children as environmental actors and stakeholders.

Defining environmental rights

Environmental rights are important for securing the health of future generations, as they protect basic necessities needed for survival and to thrive, such as water and air.¹⁷ If we allow others to profit from polluting our natural resources at the expense of causing ill-health, there is inequity and needs cannot be met.¹⁸

We adopt an anthropocentric interpretation of environmental rights in order to treat a "decent," "healthy," "healthful," "clean," or "sound" environment as an economic and social right.¹⁹ This interpretation fits within our working framework of sustainable development, which requires developmental objectives to take cognizance of environmental, social, and economic matters. Sustainable development allows us to argue against uncontrolled and unaccountable environmental exploitation in order to meet the needs of the current generation, a large subgroup of which are children, while not environmentally, socially, or economically compromising the needs of future generations. According to the UN Special Rapporteur on human rights and the environment, a "safe, clean, healthy and sustainable environment is integral to the full enjoyment of a wide range of human rights, including the rights to life, health, food, water and sanitation. Without a healthy environment, we are unable to fulfil our aspirations or even live at a level commensurate with minimum standards of human dignity."²⁰ This anthropocentric definition portrays the environment as something that needs to be protected in order to be either readily or eventually available, accessible, and utilizable by humans.²¹ In the context of this work, we offer the standard of environment as being one that is "healthful": healthy in its own integral way, but giving of health to others, including children.

The Convention on the Rights of the Child

At the international level, the legal basis that is most appropriate for our arguments concerning the environmental rights of children is the 1989 United Nations Convention on the Rights of the Child.²² Currently, 196 countries are parties to the treaty, meaning that they agree to the legal restrictions and principles stated in the document. Although the convention does not explicitly mention environmental rights as a type of right, it does recognize environment-related rights.²³ Such rights can be argued to be encompassed by the following articles: article 2 (discrimination), article 16(1) (privacy, family, home), article 24 (health, water, environmental pollution, food), article 27(1) (social development), and article 29(1)(e) (respect for the environment). Four further articles include article 6 (development of child), article 22 (refugee child protection), article 23 (disabled children), and article 28 (education). Article 6 on the right to life provides the most substantial legal argument for the environmental rights of the child. If you cannot breathe clean air, drink clean water, and so on, how can you live? Further, articles 23 and 24 indicate that children should be given sufficient health care for survival and development, including special provisions for children with disabilities, again providing convincing reasons to demand some form of environmental safeguards for children to avoid ill health or barriers to a full life due to environmental concerns. Articles 28 and 29 endorse children's educational rights and develop educational goals that help children learn how "to live peacefully, protect the environment and respect other people."

Article 27 provides a convincing legal basis for the promotion of the environmental rights of the child. Article 27(1) requires state parties to "recognise the right of every child to a standard of living adequate for the child's physical, mental, spiritual, moral and social development." Current literature supports our assertion that promoting a child's environmental rights is necessary to ensure the child's physical, mental, spiritual, moral, and social development.²⁴ When the results of such studies are applied to article 27(1) of the convention, we can argue that the promulgation of environmental rights

and protection by state parties can advance the standards of living and development of the child. Fatma Zohra Ksentini, in her UN report on human rights and the environment, argues that the convention's articles outline environmental elements in the form of a child's rights to life, health, an adequate standard of living, and education.²⁵

The Convention on the Rights of the Child has been rapidly ratified by most of the world's countries, providing evidence of global interest in protecting children's rights *per se*.²⁶ Thus, the introduction of children's environmental rights could prove to be readily accepted worldwide, given the mounting international support for sustainable development and environmental protection (support for the 2015 Paris Agreement and the revised 2015 Sustainable Development Goals have encouraged the participation of youth in achieving the 17 Sustainable Development Goals).²⁷ States have already agreed on working definitions and standards on the "environment" in various multilateral environmental agreements. However, the Convention on the Rights of the Child enshrines rights that are *related* to environmental issues yet are not specifically designed to address the environmental rights of children.

Cross-border environmental problems and rights-based problems for children

Environmental issues frequently have a transnational reach.²⁸ For example, the "slash and burn" fires that were deliberately started to clear land for agricultural purposes in Indonesia resulted in air pollution in Malaysia, Singapore, Thailand, and the Philippines. With respect to human rights agreements, the application of the Convention on the Rights of the Child tends to be geographically confined to those state parties that are legally required to protect children within their own jurisdictions.²⁹ Environmental pollution or natural and human-induced disasters can harm children living in neighboring countries, yet the substantive provisions of the convention are arguably not interpreted widely enough to safeguard children beyond states' national jurisdictions. This is counter to the con-

vention's aim to protect the rights of the children of this planet as a whole.

Recommendations for strengthening the framework

State parties to the Convention on the Rights of the Child need to be open to providing assistance to children of neighboring countries rather than operating solely in their own countries. This could be done by amending articles to include the protection of children who are affected by transboundary environmental harm. The development of bilateral legislation to address the adverse effects of cross-border environmental harm on children, drawing on relevant multilateral environmental agreements, such as the Convention on Environmental Impact Assessment in a Transboundary Context, would be useful.³⁰ One pressing issue, for example, is air pollution, which would also require precise language concerning countries and their borders, particularly borders with a history of conflict (such as the India-Pakistan border and the Israel-Palestine border) and clauses on the cooperation of the wider international community. This inclusion could result in a comprehensive approach to the protection of children's environmental rights in which countries work together to promote the well-being of their children and the global commons and to implement the environmental principles of good neighborliness and cross-border cooperation, among others. This cooperative approach would allow competent authorities to share best practices and resources and allow collaborative thinking among local planners, environmental regulators, and child rights advocates based on rights and equity. Some of the environmental rights-based issues that could be addressed through such cooperation are discussed below.

Access to healthful nature for physical and mental health

Children's access to the natural environment varies around the world. Certain areas either lack green spaces altogether or have spaces that are polluted and hazardous to children's well-being and develop-

ment.³¹ For many children, the natural environment is not a recreational space for leisure activities but instead a place that demands intense physical labor due to poverty.³² Furthermore, children living in developing countries may deal with unsafe and unsanitary conditions, food insecurity, war, and natural disasters.³³ Disproportionate access to clean green spaces and exposure to environmental hazards can also stem from structural inequalities based on race, socioeconomic status, and gender.³⁴ A recent study conducted by Catherine Walker sheds light on the discrepancies between children's perspectives of the environment in India and the United Kingdom.³⁵ According to Walker, children's views differed based on the prevalence of their exposure to such hazards, geographical proximity to these hazards, and the steps taken to mitigate them. Such environmental inequalities may benefit from strengthening the application of existing human rights and working to dismantle structural inequalities by adopting an environmental justice lens. Additionally, Kim Ferguson et al. claim that the documented impacts of the physical environment on children's development in the Global South are limited and should be investigated in collaboration with children, government agencies, and community members.³⁶

In some parts of the world, children are increasingly less connected with the environment's healthful and health-giving qualities. Children may have access to certain types of natural areas, but these areas may not be healthful—for example, contaminated land sites or fields containing pesticides. There may be an absence of green spaces or a lack of access to such spaces due to social, economic, and other reasons.³⁷ Growing evidence suggests that a child's disconnection with nature prevents healthy mental and physical development, as well as responsible stewardship of the environment.³⁸

Nature deficit disorder and the link to children's health

Richard Louv's idea of "nature deficit disorder" contends that children's "alienation from nature" can result in "diminished use of the senses, atten-

tion difficulties and higher rates of physical and emotional illnesses.”³⁹ Moreover, there is ample evidence to suggest that adult memories of childhood experiences have significant impacts on an adult’s emotional stability.⁴⁰ Exposure to nature at a young age helps children develop their emotional responsiveness, a quality that contributes to their emotional well-being during adulthood.⁴¹ This further highlights the importance of the fact that the children of today will ultimately grow up to become the care-takers of the environment in the future. Studies have also shown that a child’s life course can have major impacts on adult life.⁴² Examples include a study by Nancy Wells and Kristi Lekies, in which 2,000 adults were interviewed regarding their environmental childhood experiences and current attitudes toward the environment.⁴³ The results indicated a positive relationship between those who had participated in environmental activities as children and environmentally friendly behaviors as adults. Research by the United Nations Children’s Fund reveals that children’s learning abilities and behaviors are enhanced when they study outdoors and that their mental well-being and happiness grows with increasing exposure to nature.⁴⁴ Below, we present arguments for the environmental rights of children as a means to promote their reconnection to healthful nature.

Four key categories that benefit from environmental rights

*“Children are born with a sense of wonder and an affinity for Nature. Properly cultivated, these values can mature into ecological literacy, and eventually into sustainable patterns of living.”*⁴⁵

Moving forward, we have divided “environmental rights” as they pertain to children into four categories, following research undertaken by the National Trust, a UK-based nongovernmental organization: (1) health and well-being; (2) education and awareness; (3) resilient communities; and (4) ecosystem services.⁴⁶

These four categories are associated with children’s most basic rights: adequate health care,

an education that includes general awareness of global issues, resilience in the face of natural and human-induced disasters, and protected ecosystem services for inter-generational equity.⁴⁷ The studies we cite below tend to use examples from developed countries. This does not mean that the findings and arguments do not apply to children in developing-country contexts, but rather that relevant studies may not have been undertaken to date.

Health and well-being

Access to health-giving green spaces (safe, natural areas as opposed to polluted cities, for example) is known to increase outdoor activity, which in turn has the capacity to produce positive health-related outcomes.⁴⁸ Early exposure to outdoor activities leads to children following these habits during their adulthood, ensuring that they can become responsible future stewards of the environment.⁴⁹ Increased contact with nature can also improve mental well-being, which is a crucial aspect of a child’s physical development.⁵⁰

However, many environments where children live either do not offer access to healthful green spaces or may be hazardous, polluted, or overgrown.⁵¹

Education and awareness

Increased exposure to the natural environment enhances a child’s learning abilities. Child psychologist Aric Sigman coined the term “countryside effect,” finding that increased contact with nature improves a child’s concentration, reasoning, observational skills, and overall academic performance.⁵² According to the National Trust, a child experiences educational and developmental benefits in four impact categories: (1) cognitive, (2) affective, (3) interpersonal and social, and (4) physical and behavioral.⁵³ We argue that this can benefit the mental and physical health and development of the child.

Resilient communities

Children’s environmental rights can assist in building resilient communities.⁵⁴ Children who have had a strong connection with nature become adults who pass to their offspring positive traits ac-

quired from their exposure to the natural world.⁵⁵ Studies undertaken by researchers at the University of Leeds in the United Kingdom have shown that a parent's effort to raise positive environmental awareness in their children is more crucial than a school program in environmental education.⁵⁶ Additionally, children who are given an environmental education have a positive impact on their parent's environmental attitudes.⁵⁷

With extensive studies providing evidence that climate change has led to an increasingly high rate of unpredictable disasters, it is critical that we understand how to alleviate the effects of climate change on children and future generations.⁵⁸ Such effects include floods, cyclones, earthquakes, droughts, tsunamis, and other extreme weather events, which have led to fatalities, displacement, poverty, food insecurity, and habitat destruction.⁵⁹ Implementing child rights programming in DRR planning should include the participation of children in identifying disaster relief solutions in times of emergency. This in turn, decreases chances of exploitation and improves overall resilience.⁶⁰ Contingency planning and crisis management can be ensured by acknowledging the environmental rights to education and awareness, access to clean drinking water, access to information, and so on. David Selby and Fumiyo Kagawa note the significance of including practical DRR-based knowledge in school curricula, as well as conducting awareness-raising campaigns in order to strengthen the response capabilities of communities.⁶¹ Victor Marchezini et al. argue for the importance of involving youth and the education sector in participatory and community-based approaches to early warning systems.⁶²

The 2004 Indian Ocean tsunami illustrates how organizations such as Save the Children have used educational strategies for DRR purposes. Students attending the Ban Talaynork School in Ranong, Thailand, were encouraged to participate in evacuation plans and were taught how to cope with tsunamis in their school curricula. They were also given psychosocial rehabilitation treatments to aid their emotional and psychological recovery.⁶³ Children also have the ability to orchestrate di-

aster relief strategies without outside help. In the flood-prevalent area of the Go Cong Dong district in Vietnam, children devised a plan to develop an evacuation road so that they would not lose access to their schools or playgrounds during typhoon season.⁶⁴ The fact that education and awareness can change a life-or-death situation indicates that such knowledge is not only an environmental right but also a basic human right.⁶⁵ Education as an emergency response can provide information on diseases and hygiene, another basic environmental and human need.⁶⁶ Encouraging meaningful youth participation in disaster planning—and supporting it through a robust framework for children's environmental rights protection—can provide a long-term investment for resilient communities given that the youth of today will be the ones implementing DRR initiatives and actions in the future.⁶⁷

Ecosystem services

Ecosystems are a major factor contributing to people's economic, cultural, and spiritual well-being.⁶⁸ A healthy ecosystem ultimately leads to healthy children, adults, and future generations, and vice versa.⁶⁹ Employing children's environmental rights—including the rights to education, food, shelter, clean water and air, and sanitation—can protect ecosystem services for current and future generations, bringing both ecocentric and anthropocentric benefits.⁷⁰ The Waipa Foundation in Hawaii empowers residents, especially those with low incomes, to manage their environmental resources efficiently, employing a traditional environmental management system that incorporates “sub-divisions of land, from mountaintop to seashore, using streams as boundaries through activities with the local community and school children.”⁷¹ Growing organic food, educating children on environmental issues, and including them in environmental management strategies has helped protect ecosystem services, in turn providing a magnitude of co-benefits for children.⁷²

However, these four categories are not currently present in international and national frameworks because children are largely not recognized as “stakeholders.” A framework that acknowledges

children as official stakeholders and gives them the right to be heard, the right to participate, and the right to decision-making is a necessary next step. Fortunately, there have been a few recent lawsuits related to environmental issues in which children have won the right to be heard. For example, a case in the Philippines (*Oposa v. Factoran*) allowed 43 children to be heard regarding their concerns over timber leases and consequential deforestation.⁷³ Similarly, the *Chernaik v. Kitzhaber* case in the United States is another hopeful example of children and youth being allowed to fight for their current and future well-being.⁷⁴ Other examples include the children of Quebrada de Alajuela in Ecuador, who pointed out that a bridge connecting their village to a neighboring one was not strong enough to handle a flood, consequently saving the community from a potentially disastrous safety hazard.⁷⁵

Although there are many good examples of children being allowed to voice their opinions, there are also cases in which such rights have been disregarded. Therefore, promoting legal victories and informing the general public about them can provide a framework for similar lawsuits in the future. Furthermore, minors need effective guardians—that is, adults who are on the side of safeguarding the environmental rights of children. This is to make sure that in cases where children are considered to lack legal standing, they can be represented by advocates with access to the courts. Such advocates could be nongovernmental organizations, school teachers, or parents.

Design and implementation

An internationally agreed framework for the environmental rights of children would benefit children and future generations in a multitude of ways. We propose utilizing sustainable development as a framework under which to develop an international treaty to promulgate the environmental rights of children, promoting health, environmental stewardship, and quality of life for children and future generations. Children's environmental rights extend beyond the most basic "needs"—clean air, clean water, sanitation, and healthy environment,

among others—to the right to benefit from access to nature and the wealth of educational, recreational, developmental, and health benefits that come with ensuring protection of the environment for children. As there are currently no prescribed standards on the environmental rights of children, we propose the development of an international framework to establish national and international minimum standards, leading to improved health, quality of life, and the enjoyment of basic children's rights. The framework could be structured similarly to the Paris Agreement, where signatories committed to reducing global greenhouse gas emissions, adapting to impacts of climate change, and providing financial assistance to developing countries affected by a changing climate.⁷⁶ Moreover, the framework could draw from the revised 2015 Sustainable Development Goals, which have encouraged the participation of youth in achieving the goals.⁷⁷

For those who believe the existing multilateral environmental agreements or human rights agreement would render such a framework redundant, we remind the reader that there is currently no international agreement that sets the standard for children per se as the beneficiaries of global environmental standards, rights, and safeguards.

Advocacy

There is arguably a need for national movements to progressively augment international lawmaking in the area of children's environmental rights. The first step in achieving such a movement requires the involvement of proactive citizens to encourage national governments to represent children at international negotiations. However, in order to ensure that citizens are proactive, effective dialogue must occur between them and their national governments.⁷⁸ According to James Blake, tensions have arisen among the various stakeholders involved in environmental rights protection due to the "value-action gap," when people do something different than what they said they would do.⁷⁹

Representation is different from participation with respect to political movements. There

have been cases where national governments have empowered children to voice their concerns over social issues during parliamentary hearings and consultative processes on policy.⁸⁰ In most of these cases, children do not have the right to exercise political power. India, however, allows children to exercise political power through children-based parliaments that were established in the 1990s.⁸¹ Here, child representatives have made changes to improve educational policies and incorporate better community services in their villages.⁸² Success stories like these can be a good model for other countries, even if not all countries have the same capacity to establish child parliaments. Thus, the first step is for citizens to be more responsive to the needs of children, ensuring that their power, struggles, and vulnerabilities are taken into account and recognized as “diverse social experiences.”⁸³ Through citizens’ response to the diverse experiences of children, governments can be influenced to represent children and develop agreements that address their specific needs.

The international community also has a responsibility to all children and not just those within their borders. To this end, the global commons should work together for the effective implementation of said agreement. Here, we can employ established principles of environmental law, such as the principle of common but differentiated responsibilities, again mirroring the Paris Agreement, with nations working collectively to equitably create and implement environmental rights for children. Countries that have historically caused more environmental harm (from which they have benefitted economically) would provide economic and capacity-building support to nations that are facing challenges, yet the environmental rights of children would be the common objective: reasserting moral obligations toward current and future generations of children, while also benefitting the environment. This approach demands the practical implementation of measures at the national level, investment, and regular monitoring and reporting on measures and standards. A central international secretariat could oversee progress, requiring reports of health-related data correlated with environmen-

tal measures, for example. To save resources at the national level, the national competent reporting authority could be the same body that reports to other relevant supranational organizations, such as the World Health Organization. Nongovernmental organizations and civil society groups could play a role as well, in the absence of national political will.

Concluding recommendations

One of the first steps is to incorporate children’s environmental rights within every country’s political agenda by adding well-defined *environmental rights for children* as separate provisions in laws and policies. Furthermore, the policy recommendations outlined above can be effectively implemented only through collaborative awareness and funding. One of the ways in which funding can be secured is by taxing the corporations that directly or indirectly cause harm to children through their unsustainable practices. This would require regulatory monitoring and enforcement, as companies may arguably avoid taxes and accountability for their actions through tax havens, transfer pricing, and other loopholes in existing policies.⁸⁴ Rules could be enforced through the suspension of licenses, prosecutions, legal instruments, and community pressure.⁸⁵ It should be noted that community pressure would require communication among a myriad of stakeholders to endorse a truly interdisciplinary approach to children’s environmental rights protection. Where public funds are lacking, there are some organizations that can help fund international children-related projects through private and philanthropic investment. Examples of these organizations include the Education for Development Foundation, Child Health Foundation, and the Global Fund for Children, which aim to support initiatives proposed by nongovernmental organizations and the general public.⁸⁶

International awareness should urgently be promoted through campaigns targeted toward guardians of children (this can include children themselves, parents and caregivers specifically, and schools, politicians, and communities more widely) in order to demonstrate how environmental harm

directly affects children. Awareness raising would not only enhance children's connection with nature by rooting it within local social and cultural contexts but also help the wider international community move toward a future that promotes the protection of children's environmental rights. Thus, it is through positive development, whether through nature or nurture, that the children of today can enjoy their environmental rights and ensure the same for the children of tomorrow.

References

1. R. Louv, *Last child in the woods: Saving our children from nature-deficit disorder* (Chapel Hill, NC: Algonquin Books, 2005).
2. A. Dobson, *Citizenship and the environment* (Oxford: Oxford University Press, 2003).
3. T. Kerns, "Ten practical advantages of a human rights approach to environmental advocacy," *Journal of Environmental Studies and Sciences* 3/4 (2013), pp. 416–420.
4. *Ibid.*
5. United Nations Environment Programme, *What are environmental rights?* Available at <https://www.unenvironment.org/explore-topics/environmental-rights-and-governance/what-we-do/advancing-environmental-rights/what>.
6. *Ibid.*
7. *Ibid.*
8. Convention on the Rights of the Child, G.A. Res. 44/25 (1989), art. 1.
9. Convention on the Rights of the Child, G.A. Res. 44/25 (1989); K. E. MacDonald (Makuch), "Sustaining the environmental rights of children: An exploratory critique," *Fordham Environmental Law Review* 18 (2006), pp. 1–65.
10. World Health Organization, *Effects of air pollution on children's health and development: A review of the evidence* (2005); European Commission DG Environment-funded study at the University of Brescia, "Monitoring air pollution effects on children for supporting public health policy: The protocol of the prospective cohort MAPEC study," *BMJ Open* 4/9 (2005).
11. United Nations Children's Fund, *The state of the world's children 2011: Executive summary* (2011).
12. G. H. Brundtland, *Our common future: Report of the 1987 World Commission on Environment and Development* (Oslo: United Nations, 1987), para. 27.
13. MacDonald (see note 9).
14. D. McGoldrick, "Sustainable development and human rights: An integrated conception," *International and Comparative Law Quarterly* 45/4 (1996), pp. 796–818.
15. A. E. Boyle and M. R. Anderson (eds), *Human rights approaches to environmental protection* (UK: Clarendon Press, 1996); D. Shelton, "Human rights, environmental rights, and the right to environment," *Stanford Journal of International Law* 28 (1991), p. 103; P. Cullet, "Definition of an environmental right in a human rights context," *Netherlands Quarterly of Human Rights* 13/1 (1995), pp. 25–40; United Nations Paris Agreement on Climate Change (2015), preambular para. 11.
16. *Juliana v. United States*, No. 6:15-CV-01517-TC, 2016 WL 6661146 (D. Or. Nov. 10, 2016); MacDonald (see note 8); Committee on the Rights of the Child, *Report of the 2016 general day of discussion: Children's rights and the environment*. Available at http://www.ohchr.org/_layouts/15/WopiFrame.aspx?sourcedoc=/Documents/HRBodies/CRC/Discussions/2016/DGDoutcomereport-May2017.docx&action=default&DefaultItemOpen=1.
17. H. S. Cho and O. W. Pedersen, "Environmental rights and future generations," in M. Tushnet, T. Fleiner, and C. Saunders (eds), *Routledge handbook of constitutional law, 1st edition* (London: Routledge, 2013), pp. 401–412.
18. T. Hayward, *Constitutional environmental rights* (Oxford: Oxford University Press, 2005).
19. M. Thorme, "Establishing environment as a human right," *Denver Journal of International Law and Policy* 19 (1990), p. 301.
20. United Nations Office of the High Commissioner, *Special Rapporteur on human rights and the environment*. Available at <https://www.ohchr.org/en/Issues/environment/SREnvironment/Pages/SREnvironmentIndex.aspx>.
21. M. Amérigo, J. I. Aragonés, B. de Frutos, et al., "Underlying dimensions of ecocentric and anthropocentric environmental beliefs," *Spanish Journal of Psychology* 10/1 (2007), pp. 97–103.
22. Convention on the Rights of the Child, G.A. Res. 44/25 (1989).
23. MacDonald (see note 9).
24. P. H. Kahn and S. R. Kellert (eds), *Children and nature: Psychological, sociocultural, and evolutionary investigations* (Cambridge, MA: MIT Press, 2002).
25. F. Z. Ksentini, *Human rights and the environment: Final report*, UN Doc. E.CN.4/Sub.2/1994/9 (1994).
26. S. E. Brice, "Convention on the rights of the child: Using a human rights instrument to protect against environmental threats," *Georgetown International Environmental Law Review* 7 (1995), pp. 587–611.
27. United Nations Framework Convention on Climate Change, *Historic Paris Agreement on climate change: 195 nations set path to keep temperature rise well below 2 degrees Celsius*. Available at <https://unfccc.int/news/finale-cop21>; J. Ellsmore, "Business and youth unite to unleash the sustainable development goals," *Forbes* (June 6, 2018). Available at <https://www.forbes.com/sites/jamesellsmoor/2018/06/06/business-and-youth-unite-to-unleash-the-sustainable-development-goals/#58a56de6399b>.
28. D. Pearce, H. Apsimon, and E. Ozdemiroglu (eds), *Acid*

- rain in Europe: Counting the cost* (London: Routledge, 2014).
29. H. M. Osofsky, "Learning from environmental justice: A new model for international environmental rights," *Stanford Environmental Law Journal* 24 (2005), p. 71.
 30. Convention on Environmental Impact Assessment in a Transboundary Context (1991).
 31. B. Hayward, *Children, citizenship and environment: Nurturing a democratic imagination in a changing world* (London: Routledge, 2012).
 32. J. Dyson, *Working childhoods: Youth, agency and the environment in India* (Cambridge: Cambridge University Press, 2014).
 33. B. Hayward (see note 34).
 34. J. H. Lee, D. Scott, and M. F. Floyd, "Structural inequalities in outdoor recreation participation: A multiple hierarchy stratification perspective," *Journal of Leisure Research* 33/4 (2001), pp. 427–449; K. A. Shores, D. Scott, and M. F. Floyd, "Constraints to outdoor recreation: A multiple hierarchy stratification perspective," *Leisure Sciences* 29/3 (2007), pp. 227–246; J. Byrne, J. Wolch, and J. Zhang, "Planning for environmental justice in an urban national park," *Journal of Environmental Planning and Management* 52/3 (1009), pp. 365–392.
 35. C. Walker, "Environment and children's everyday lives in India and England: Exploring children's situated perspectives on global-local environmental concerns," in A. T. D. Imoh, M. F. C. Bourdillon, and S. Meichsner (eds), *Global childhood beyond the North-South divide* (Switzerland: Springer, 2019).
 36. K. T. Ferguson, R. C. Cassells, J. W. MacAllister, and G. W. Evans, "The physical environment and child development: An international review" *International Journal of Psychology* 48/4 (2013), pp. 437–468.
 37. A.-C. Prévot-Julliard, R. Julliard, and S. Clayton, "Historical evidence for nature disconnection in a 70-year time series of Disney animated films," *Public Understanding of Science* 24/6 (2015), pp. 672–680.
 38. R. Louv, *Last child in the woods: Saving our children from nature-deficit disorder* (Chapel Hill: Algonquin Books, 2005).
 39. Ibid.
 40. A. Goodman, R. Joyce, and J.P. Smith, "The long shadow cast by childhood physical and mental problems on adult life," *Proceedings of the National Academy of Sciences* 108/15 (2011), pp. 6032–6037.
 41. Kahn and Kellert (see note 24).
 42. S. J. Hunt, *The life course: A sociological introduction* (London: Palgrave Macmillan, 2016).
 43. N. M. Wells and K. S. Lekies, "Nature and the life course: Pathways from childhood nature experiences to adult environmentalism," *Children Youth and Environments* 16/1 (2006), pp. 1–24.
 44. A. Nairn, B. Duffy, O. Sweet, et al., *Children's well-being in UK, Sweden and Spain: The role of inequality and materialism* (Ipsos MORI Social Research Institute, 2011).
 45. Z. Barlow, "Confluence of streams: An introduction to the ground-breaking work of the Center for Ecoliteracy," *Resurgence* (2004), pp. 6–9.
 46. National Trust, *Natural childhood report* (2012).
 47. Ibid.; Convention on the Rights of the Child, G.A. Res. 44/25 (1989), art. 24.
 48. A. C. K. Lee and R. Maheswaran, "The health benefits of urban green spaces: A review of the evidence," *Journal of Public Health* 33/2 (2011), pp. 212–222; V. Derr and K. Lance, "Biophilic Boulder: Children's environments that foster connections to nature," *Children, Youth and Environments* 22/2 (2012), pp. 112–143.
 49. W. Bird, *Natural fit: Can green space and biodiversity increase levels of physical activity?* (Royal Society for the Protection of Birds, 2004).
 50. C. H. Hillman, K. I. Erickson, and A. F. Kramer, "Be smart, exercise your heart: Exercise effects on brain and cognition," *Nature Reviews Neuroscience* 9/1 (2008), p. 58.
 51. Walker (see note 35).
 52. A. Sigman, *Agricultural literacy: Giving concrete children food for thought* (2007). Available at <https://slidex.tips/download/agricultural-literacy>.
 53. National Trust (see note 46).
 54. Ibid.
 55. G. De Fraja, T. Oliveira, and L. Zanchi, "Must try harder: Evaluating the role of effort in educational attainment," *Review of Economics and Statistics* 92/3 (2010), pp. 577–597.
 56. Ibid.
 57. L. Legault and L.G. Pelletier, "Impact of an environmental education program on students' and parents' attitudes, motivation, and behaviours," *Canadian Journal of Behavioural Science* 32/4 (2000), p. 243.
 58. Intergovernmental Panel on Climate Change, *Managing the risks of extreme events and disasters to advance climate change adaptation* (2018).
 59. F. M. Burkle Jr., G. Martone, and P. G. Greenough, "The changing face of humanitarian crises," *Brown Journal of World Affairs* 20 (2013), p. 19.
 60. International Save the Children Alliance, *In the face of disaster: Children and climate change* (London: International Save the Children Alliance, 2008).
 61. D. Selby and F. Kagawa, *Disaster risk reduction in school curricula: Case studies from thirty countries* (Paris: UNESCO and UNICEF, 2012).
 62. V. Marchezini, R. Trajber, D. Olivato, et al., "Participatory early warning systems: Youth, citizen science, and intergenerational dialogues on disaster risk reduction in Brazil," *International Journal of Disaster Risk Science* 8/4 (2017), pp. 390–401.
 63. P. McDiarmind, *In the face of disaster: Children and climate change* (London: International Save the Children Alliance, 2008).
 64. Ibid.; Asian Management Development Institute.

Available at: <http://weadapt.org/organisation/amdi>.

65. A. Boyle, "Human rights or environmental rights? A reassessment," *Fordham Environmental Law Review* (2007), pp. 471–511.

66. L. Peek, "Children and disasters: Understanding vulnerability, developing capacities, and promoting resilience—An introduction," *Children, Youth and Environments* 18/1 (2008), pp. 1–29.

67. L. Cumiskey, T. Hoang, S. Suzuki, et al., "Youth participation at the third UN world conference on disaster risk reduction," *International Journal of Disaster Risk Science* 6/2 (2015), pp. 150–163.

68. R. Haines-Young and M. Potschin, "The links between biodiversity, ecosystem services and human well-being," *Ecosystem Ecology: A New synthesis* 1 (2010), pp. 110–139.

69. H. Tallis, P. Kareiva, M. Marvier, and A. Chang, "An ecosystem services framework to support both practical conservation and economic development," *Proceedings of the National Academy of Sciences* 105/28 (2008), pp. 9457–9462.

70. G. C. Daily, S. Polasky, J. Goldstein, et al., "Ecosystem services in decision making: Time to deliver," *Frontiers in Ecology and the Environment* 7/1 (2009), pp. 21–28.

71. Waipa Foundation. Available at <http://www.waipafoundation.org/about>.

72. Tallis et al. (see note 69).

73. A. Oposa, Jr., "Intergenerational responsibility in the Philippine context as a judicial argument for public action on deforestation," Fourth International Conference on Environmental Compliance and Enforcement, Makati, Philippine Ecological Network (2000).

74. Our Children's Trust, *Active state legal actions: Oregon*. Available at <https://www.ourchildrenstrust.org/oregon>.

75. D. Walden, N. Hall, and K. Hawrylyshyn, *Global warning: Children's right to be heard in global climate change negotiations* (London: Plan UK, 2009).

76. United Nations Framework Convention on Climate Change (see note 27).

77. J. Ellsmore, "Business and youth unite to unleash the sustainable development goals," *Forbes* (June 6, 2018). Available at <https://www.forbes.com/sites/jamesellsmoor/2018/06/06/business-and-youth-unite-to-unleash-the-sustainable-development-goals/#58a56de6399b>.

78. A. Davies and F. Gathorne-Hardy, *Making connections: Community involvement in environmental initiatives* (Cambridge: CIES, 1997).

79. J. Blake, "Overcoming the 'value-action gap' in environmental policy: Tensions between national policy and local experience," *Local Environment* 4/3 (1999), pp. 257–278.

80. M. Brown and J. McCormack, "Placing children on the political agenda: New Zealand's agenda for children," in J. Goddard, S. McNamee, and A. James (eds), *The politics of childhood* (London: Palgrave Macmillan, 2005), pp. 185–207; L. Jamieson and W. Mukoma, "Dikwankwetla—Children in action: Children's participation in the law reform process

in South Africa," in B. Percy-Smith and N. Thomas (eds), *A handbook of children and young people's participation* (London: Routledge, 2009), pp. 95–104; K. Pells, "'No one ever listens to us': Challenging obstacles to the participation of children and young people in Rwanda," in B. Percy-Smith and N. Thomas (eds), *A handbook of children and young people's participation: Perspectives from theory and practice* (London: Routledge, 2009), pp. 196–203.

81. A. Bajpai, *Child rights in India: Law, policy, and practice* (Oxford: Oxford University Press, 2018).

82. J. Wall, "Can democracy represent children? Toward a politics of difference," *Childhood* 19/1 (2012), pp. 86–100.

83. *Ibid.*

84. C. N. Radavoi and Y. Bian, "Enhancing the accountability of transnational corporations: The case for 'decoupling' environmental issues," *Environmental Law Review* 16/3 (2014), pp. 168–182.

85. K. Murphy, "Enforcing tax compliance: To punish or persuade?," *Economic Analysis and Policy* 38/1 (2008), pp. 113–135.

86. Funds for NGOs, *Three grantmaking foundations that fund children's projects around the world*. Available at <http://www.fundsforngos.org/article-contributions/grantmaking-foundations-fund-childrens-projects-world>.