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**INVITED ARTICLE**

# Climate Justice and Health: Reconnecting Human, Ecological, and Planetary Well-Being

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## Key words

Climate justice, Planetary health, One Health, Ecological integrity, Health inequities, Structural injustice, Emerging infectious diseases, Antimicrobial resistance, Faith communities, Theology of oneness, New International Financial and Economic Architecture (NIFEA), Adaptation and resilience, Gender and climate vulnerability

## Abstract

Climate justice is a public health imperative because human well-being is inseparable from ecological integrity, planetary stability, and social equity. Climate change already harms health through extreme temperatures, climate-related disasters, food insecurity, and shifting infectious disease patterns, with the greatest burdens falling on communities that have least contributed to the crisis. Drawing on concepts of 'Planetary health' and 'One Health', the article argues that biological, social, and spiritual interdependence links the health of humans, animals, and ecosystems, exposing the illusion that human flourishing cannot be separated from the rest of creation. It shows how structural injustice, colonial histories, gender inequality, and weak health systems produce vulnerability, turning climatic and ecological hazards into avoidable illness, displacement, trauma, and antimicrobial resistance. The article calls for transformative and systemic responses that integrate decarbonization, ecological restoration, public health, just economic and financial architectures, and community-based resilience, rather than relying on isolated technical fixes or individual behaviour change. Faith communities are highlighted as vital partners for this transformation, bringing moral vision, social trust, and practical engagement that can connect scientific insight with lived experience and sustain hope in a wounded world. Reconnecting human, ecological, and planetary well-being is presented as the necessary foundation for protecting life with justice amid climate disruption.

## Introduction:

Climate justice is a public health imperative because the health of people, ecosystems, societies, and the planet is inseparable. Human health cannot flourish in isolation from ecological health, planetary stability, social justice, and structural equity. The climate emergency is not only an environmental crisis; it is also a health crisis, a justice crisis, and a moral crisis, and these expose and intensify inequalities in income, gender, race, geography, age, disability, displacement, and access to health systems. A credible public health response must therefore reconnect human, ecological, and planetary well-being within a framework of justice, responsibility, and care, while also recognizing the "One Health" insight that the health of humans, animals, plants, and ecosystems is closely linked and interdependent (IPCC 2022; WHO 2022; WHO 2026c).

Across the world, these realities are not abstract. They are lived daily in communities where drought reshapes diets, where floods disrupt access to care, and where extreme heat makes work dangerous or impossible. Health is experienced not only in clinics but in homes, fields, and places of worship, where relationships and local support systems often determine who copes and who is left behind.

## The illusion of separateness: human beings are biologically, socially, and spiritually embedded in creation.

Modern societies often behave as though human beings stand outside the natural world, as if the environment were merely a background resource for economic life. Yet this view is scientifically and morally misleading. Human beings are living organisms embedded in ecological systems that sustain air, water, food, immunity, and climate stability. The body itself is not a sealed unit but a living ecosystem, dependent on microbial life and on the integrity of wider biological systems. Scientific and ethical reflection alike therefore challenge the illusion that human flourishing can be separated from the flourishing of the rest of creation (IPCC 2022; Kurian 2024). Notably, the "One Health" *approach* recognises that the health of humans, ecosystems, domestic and wild animals is closely linked and interdependent (FAO, 2026; WHO, 2022). The "One Health" *framework* sharpens this point, by showing that health is not confined to individual bodies, but arises within an interconnected web linking humans, domestic and wild animals, plants, and the environment (WHO 2022; WHO 2026c). In this sense, biological life is relational at every level. This relational reality resonates deeply with theological understandings of oneness: that all creation is held together in an interdependent unity grounded in God. Human beings are not separate from the rest of creation, but part of a living whole, where the flourishing of one is bound to the flourishing of all. This can be illustrated in our own bodies. Current research estimates that the adult human body contains roughly 30 to 37 trillion human cells and about 38 to 40 trillion bacterial cells, a ratio close to 1:1, while broader microbial communities in the gut, skin, mouth, and airways help digest nutrients, train immunity, and protect against pathogens (Sender, Fuchs, and Milo 2016; Hatton et al. 2023; Human Microbiome Project Consortium 2012; Lloyd-Price, Abu-Ali, and Huttenhower 2016; NIGMS 2024). Environmental conditions such as diet, pollution, antibiotic exposure, and contact with natural ecosystems shape this internal ecology, so the health of the body cannot be detached from the health of the world it inhabits (Shreiner, Kao, and Young 2015; ECARF 2024). This interdependence is not only biological but also social. Human vulnerability and resilience are shaped by relationships, infrastructure, labor systems, housing, political power, and access to care. A flood, drought, or heatwave does not affect all people equally; its effects are filtered through systems of inequality. The idea of separateness also fails spiritually, because many faith traditions understand humanity within an ordered and relational creation rather than existing above it.

Climate justice therefore begins with a recognition of reality: human beings are embedded in nature, dependent on one another, and morally accountable for how they inhabit the Earth (Kurian 2024; Green Hope Foundation and World Council of Churches 2023). From a theological perspective, the illusion of separateness is a distortion of this deeper unity. Faith traditions affirm that creation is one, sustained by divine presence, and that justice emerges from recognizing and restoring right relationships within this shared web of life.

## Climate change is a health crisis affecting the individual and society because of climate-related disasters, food insecurity and infectious diseases.

Climate change is already harming health through multiple and overlapping pathways. The Intergovernmental Panel on Climate Change concludes with high confidence that climate-related illness, premature mortality, malnutrition, and threats to mental health and well-being are increasing. Moreover, they are unevenly distributed across and within societies (IPCC 2022).

Extreme heat is one of the clearest examples, increasing the risks of heat exhaustion, heat stroke, cardiovascular stress, kidney injury, and death, especially among older adults, outdoor workers, poor households, and people with chronic disease (Kurian 2024). In many contexts, these risks are mediated through community life. When heat overwhelms health systems, it is often neighbors, families, and local networks who provide immediate care and support. The ability to respond is therefore shaped not only by infrastructure, but by the strength of community relationships. Extreme heat can often lead to climate-related disasters like fires. Climate-related disasters produce both acute and chronic health burdens. Fires, floods, storms, and droughts cause injuries, deaths, respiratory illness, water contamination, interrupted care, loss of medicines, and destruction of homes and health facilities. Their effects do not end when the event passes; they often leave long-term trauma, anxiety, grief, and economic insecurity (IPCC 2022; Kurian 2024). These impacts ripple through communities, affecting caregiving systems, social cohesion, and local economies. Recovery is rarely an individual process; it depends on collective resilience, shared resources, and trusted local leadership. Climate hazards are also becoming a major driver of involuntary migration and displacement, disrupting treatment continuity, nutrition, sanitation, and psychosocial stability for millions of people each year (IPCC 2022; Kurian 2024).

Food insecurity is another major pathway from climate disruption to illness because damage to crops, fisheries, soils, and water supplies reduces both the quantity and the quality of food, increasing the risks of undernutrition and micronutrient deficiency. According to the World Health Organization, climate change is expected to cause approximately 250,000 additional deaths per year between 2030 and 2050 from malnutrition, malaria, diarrhoeal disease, and heat stress, with the heaviest burden falling on vulnerable populations and communities with weak health systems (WHO 2023; Green Hope Foundation and World Council of Churches 2023).

Climate change also alters infectious disease dynamics. Shifting temperature, rainfall, humidity, and land use affect the survival and distribution of vectors and pathogens, contributing to changing patterns of malaria, dengue, Lyme disease, waterborne disease, and other climate-sensitive infections (IPCC 2022; Jones et al. 2008).

A climate-and-health analysis therefore cannot stop at greenhouse gas emissions and weather; it must also address disease ecologies, social vulnerability, and the unequal distribution of protection.

## Ecological destruction directly impacts health.

Public health depends on more than hospitals and medicines; it depends on living ecological systems. Soil fertility underpins food production. Water systems shape sanitation and disease exposure Biodiversity supports resilience in agriculture, pollination, and ecosystem recovery. When soils are degraded, waters contaminated, and forests destroyed, the consequences are registered in human bodies through hunger, disease, stress, and displacement. Ecological destruction is therefore not a secondary environmental issue but a primary determinant of health (IPCC 2022; Kurian 2024). This is well illustrated by the loss of forests. Research on emerging infectious diseases shows that deforestation, agricultural expansion, wildlife trade, urbanization, and broader ecosystem disruption bring wildlife, livestock, and human populations into closer contact, increasing the risk of zoonotic spillover (Jones et al. 2008; UNEP and ILRI 2019; WHO 2026c). "One Health" literature estimates that roughly 60 to 75 percent of emerging infectious diseases are zoonotic (Jones et al. 2008; UNEP and ILRI 2019; Woolhouse and Gowtage-Sequeria 2005). Wild birds can carry large numbers of pathogens across continents, and domesticated animals can act as intermediate hosts or amplifiers, creating pathways for pathogens to move through food systems and into human communities (UNEP and ILRI 2019; WHO 2026c). Intensive animal agriculture can become an infectious disease trap because crowding, rapid animal turnover, and long supply chains create conditions in which viruses and bacteria circulate, recombine, and sometimes jump into humans (UNEP and ILRI 2019; WHO 2026c). Treating these diseases also becomes a challenge, as ecological destruction also intensifies health threats through antimicrobial resistance (AMR). Most antibiotics globally are used in animals rather than people, often in livestock production systems designed around crowding and disease prevention under stressful conditions (Nature Communications 2025; WHO 2022; WHO 2026c). A recent analysis cited in that document suggests that around 70 to 72 percent of antibiotics by weight are administered to livestock, and WHO and partner agencies identify the misuse and overuse of antibiotics in both medicine and agriculture as major drivers of antimicrobial resistance (Nature Communications 2025; WHO 2022; WHO 2026c). AMR is already estimated to cause about 1.27 million deaths annually and to contribute to nearly 5 million deaths worldwide (Browne et al. 2022; University of Oxford 2022). This extends the climate justice discussion because the same extractive and industrial systems that degrade land, water, and animal life also generate new burdens of drug-resistant disease that fall hardest on people with the least access to robust health care (WHO 2022; WHO 2026c). Water cannot be forgotten, as oceans, too, are part of the health equation. They absorb most excess global heating, and warming waters inten-

sify storms, increase flood risk, alter marine food webs, and threaten fisheries on which many communities depend. Coral reef decline, shifting fish populations, and wider biodiversity loss weaken food security and livelihoods, especially in coastal and low-income regions.

We therefore see that the erosion of biodiversity narrows the ecological relationships that support adaptation and resilience, making both ecosystems and societies more vulnerable to disruption (Cheng et al. 2019; Kurian 2024).

## Planetary health: the Earth system as the foundation of human flourishing

The idea of ”Planetary Health” gathers these realities into a single framework. It argues that human civilization depends on flourishing natural systems and that destabilization of climate, land, water, and biodiversity threatens the foundations of health itself (Whitmee et al. 2015; IPCC 2022). This perspective is important because it shifts public health away from a narrow emphasis on treatment and toward the ecological and social conditions that make healthy life possible. It also reminds policymakers that health is produced across systems, not only inside clinics. Such an understanding echoes a theological vision of oneness in which life cannot be reduced to isolated parts. Instead, it is understood as a dynamic and sacred interrelated whole, where ecological integrity, social justice, and human well-being are inseparable.

“Planetary Health” asks what kind of Earth system is required for human flourishing. Stable temperatures, breathable air, reliable rainfall, fertile soil, fresh water, productive oceans, and biodiversity are not luxuries; they are material conditions of life, especially for communities whose well-being depends directly on local ecosystems. When those foundations are weakened, the resulting harms cascade across nutrition, disease, livelihoods, migration, and conflict. The “One Health” approach complements this framework by showing that such planetary disruptions are also expressed in changed relations among humans, animals, and microbial life (WHO 2022; WHO 2026c). Protecting health therefore requires protecting the Earth system itself while also addressing the interfaces through which ecological destruction becomes illness (Whitmee et al. 2015; WHO 2022).This framework also reframes responsibility. Ministries of health alone cannot solve climate-related illness if energy systems, agricultural policies, trade structures, and urban development models continue to undermine ecological stability. Governments must respond in a holistic manner, in cooperation with different stakeholders and with countries across the world.

“Planetary Health” and “One Health” both call for integrated governance linking decarbonization, conservation, public health, agriculture, and equity (Whitmee et al. 2015; WHO 2022). They are not metaphorical expansions of health but realistic recognitions that the fate of human beings depends on living natural systems and on the relationships between species within those systems.

## Climate injustice: unequal responsibility, unequal exposure, unequal capacity to adapt

Climate change is deeply unjust because those who contributed least to the crisis are often those who suffer first and most severely (IPCC 2022). The IPCC emphasizes that climate risks are unevenly distributed because of differences in exposure, vulnerability, and capacity to respond. At the same time, emissions are highly unequal, with the richest 10 percent of the global population responsible for about half of consumption-based carbon emissions while the poorest half contribute only a small fraction (Gore 2015; Kurian 2024). This makes climate change not only an environmental problem but also a question of distributive and historical injustice. The injustice has at least three dimensions. Responsibility is unequal, because high-income societies, fossil-fuel industries, and high-consuming groups have contributed disproportionately to greenhouse gas accumulation. Exposure is unequal, because poorer communities are more likely to live in flood-prone settlements, heat-exposed housing, drought-affected rural economies, and under-resourced urban areas. Adaptive capacity is unequal, because wealthier groups can ensure assets, relocate, cool homes, secure private care, and influence political decisions, while marginalized communities often cannot. Gender is one of the clearest axes along which this injustice operates, since women and girls frequently carry disproportionate burdens related to water collection, food insecurity, caregiving, reproductive health risks, disrupted education, and heightened exposure to violence in periods of environmental stress (Oxfam 2015; IPCC, 2022, AR6 WGII). The "One Health" perspective adds another dimension to this injustice by showing that vulnerable communities often face overlapping exposure to climate shocks, ecological degradation, zoonotic disease risk, and weak health systems (WHO 2022; WHO 2026c). Communities dependent on forests, fisheries, small-scale agriculture, or precarious urban environments are often pushed closest to the fault lines where environmental destruction, animal-human contact, food insecurity, and infectious disease converge (IPCC 2022; UNEP and ILRI 2019).

Climate justice must therefore include not only fair mitigation and adaptation but also protection from the unequal health burdens generated by degraded ecosystems and unsustainable production systems.

## Structural inequity: why vulnerability is produced by social and economic systems, not merely by geography.

It is tempting to explain climate vulnerability in purely geographic terms: island states are vulnerable because they are coastal, drylands because they lack water, and tropical cities because they are hot. Geography matters, but it does not explain why some populations die in heatwaves while others remain protected, why some communities recover after storms while others are

displaced for years, or why disease outbreaks become catastrophic in some regions and manageable in others. Vulnerability is produced by systems of poverty, discrimination, underinvestment, colonial extraction, and political exclusion (IPCC 2022; Watts et al. 2017)). Weak health infrastructure is one example. Communities with fewer clinics, fragile supply chains, limited surveillance, and inadequate financing are less able to anticipate and respond to climate-sensitive risks. Poor housing, insecure labor, lack of social protection, inaccessible transport, and unsafe water systems convert environmental stress into disproportionate illness and death. The same logic applies to zoonotic emergence and antimicrobial resistance: poorly regulated agricultural systems, inadequate public health oversight, and unequal access to prevention and treatment transform ecological pressures into avoidable health crises (WHO 2022; UNEP and ILRI 2019). Structural inequity explains why the same climatic or ecological hazard can have radically different outcomes depending on surrounding conditions of justice or injustice (Green Hope Foundation and World Council of Churches 2023; Jones et al. 2008).

This perspective has important implications for public health. Adaptation cannot be reduced to technical fixes while deeper drivers of vulnerability remain untouched. Incremental measures may help, but they are insufficient where economic and political systems continue to generate exposure and deny protection. A justice-based approach must therefore address labor rights, housing, public services, Indigenous land rights, gender equality, democratic accountability, and ecological governance alongside climate adaptation itself (IPCC 2022; Kurian 2024).

## A transformative response: the integration of responses across financial, agricultural sectors and the health sector for climate-resilience.

Because climate and health are linked through systems, responses must also be systemic. Individual lifestyle change has value, especially in high-consuming societies, but personal responsibility alone cannot transform energy grids, food systems, urban form, public transport, livestock production, or global finance. More integrated responses are needed across sectors and scales. The IPCC argues that incremental changes have proven insufficient and that broader frameworks are required to reduce climate-related risks to health and well-being (IPCC 2022). The key domains involved include the financial sector, the agricultural sector and the involvement of traditional knowledge. The global financial governance is an integral aspect of finding a way forward for Climate justice and the healing of the world and all creation. A way forward is shown by the New International Financial and Economic Architecture (NIFEA) initiative. It is an ecumenical commitment to realizing ethical, democratic, just and sustainable financial and economic systems, addressing critical areas including public finance and debt, regulation of the financial sector, and global economic governance (WCC 2014).

At the community level, practical responses can include agroecology, local food production, water conservation, biodiversity protection, afforestation, community gardens, and locally rooted resilience planning. These approaches can improve diets, strengthen livelihoods, reduce ecological degradation, and build social cohesion at the same time. Community initiatives are especially important when they are participatory and when they draw on Indigenous knowledge, women's leadership, and local ecological experience rather than imposing top-down solutions. In many settings, these responses are already being led by communities themselves. Women's groups, youth networks, Indigenous leaders, and faith communities are developing context-specific solutions rooted in lived experience. These efforts show that resilience is not only technical but relational, built on trust, participation, and shared responsibility. This has been further stressed in previous analysis. A "One Health" lens adds the need for safer animal husbandry, prudent antibiotic stewardship, habitat protection, and stronger local surveillance at the human-animal-environment interface (WHO 2022; UNEP and ILRI 2019; WHO 2026c). Institutions also need reform. Health systems should become climate-resilient and low carbon, with stronger early warning, heat action plans, emergency preparedness, disease surveillance, and accessible primary care.

Public policy, in order to have a transformative response, must go further by reducing emissions, investing in public infrastructure, protecting workers, funding adaptation, supporting those already experiencing loss and damage, and integrating public health with agricultural and environmental governance (IPCC 2022; WHO 2022), without forgetting financial governance. At the global level, accountability requires that wealthy states and major emitters provide meaningful finance and policy support rather than shifting the costs of climate disruption onto poorer countries and marginalized communities (Watts et al. 2017; IPCC 2022).

## Faith-based contribution is an invaluable resource to this transformative response through theology, pastoral care and community.

Faith communities bring distinctive resources to the climate and health agenda because they address values, identity, meaning, and moral responsibility. Religious traditions can challenge the habits of domination, excess, and indifference that normalize ecological destruction. They can also articulate a vision of the world as a shared household of life in which care for the vulnerable, stewardship of creation, and justice for future generations are inseparable, reflecting the theology of oneness. In this sense, faith-based engagement is not peripheral to climate response but part of the ethical transformation the crisis demands (Green Hope Foundation and World Council of Churches 2023; Kurian 2024). The theology of oneness emphasises that the Earth and all its inhabitants belong to a single community of life. Within this unity, care for creation, care of self, care for one another, and care for future generations are not separate responsibilities, but

expressions of the same moral calling. At the community level, religious leaders play a critical and often under-recognized role. They are trusted figures who accompany people through illness, loss, and uncertainty, and they shape both values and behavior. In many contexts, they are among the first to interpret crises, mobilize collective action, and provide moral guidance that resonates deeply within everyday life.

"One Health" reflections describe health in a wounded world. The wounding of bodies through disease and injury, the wounding of minds through anxiety and trauma, and the wounding of creation through exploitation and violence are inseparable realities (Kofinas 2026; WCC 2026). Armed conflict, greed, and struggles over resources devastate communities, poison land and water, and break trust, while unrestrained consumption, misuse of fertilizers, pesticides, and antibiotics damage ecosystems and threaten food security (Kofinas 2026; WHO 2026a; WHO 2026c). In theological terms, this is not simply a technical failure, but a broken relationship with creation in which human beings act as exploiters rather than as caregivers and stewards (Kofinas 2026).

Faith-based contribution can therefore take several forms. It can support healing through pastoral care and community health ministries; encourage stewardship through sustainable living, ecological education, and responsible care for land and animals; deepen solidarity with women, Indigenous peoples, displaced communities, and the poor; and exercise prophetic advocacy by challenging unjust policies and extractive economic practices. When equipped with accurate knowledge and supported through partnerships, religious leaders can also contribute directly to public health and climate responses. They can encourage preventive practices, address stigma, strengthen mental and spiritual resilience, and link scientific knowledge with community trust in ways that formal systems alone often cannot achieve. Theological language also helps resist despair. The biblical witness that creation belongs to God and that the suffering of one member affects the whole body reinforces both the scientific insight of interdependence and the moral obligation to act together for healing (Kofinas 2026; WCC 2026).

## Conclusion

Climate justice and health must be understood as one integrated agenda. Human health cannot be secured apart from ecological integrity, planetary stability, social equity, and the relationships that connect humans with animals, microbial life, and wider creation. Climate change reveals with brutal clarity, the direct impact of natural disasters, food security, infectious diseases, and ecological destruction on health and wellbeing. This leads us to the important framework to "Planetary Health", that sets the foundation of the Earth's systems that enable human flourishing. Climate injustice is further complicated by the fact that it is deeply entrenched in the inequalities in responsibility, exposure and capacity to adapt produced by social systems, not only geographical reasons.

A credible response therefore requires more than adaptation to worsening damage. It demands transformation of the unjust systems that expose vulnerable communities to the greatest harm while allowing the most powerful to benefit from ecological destruction (IPCC 2022). It also requires a "One Health" commitment to protect the interfaces between humans, animals, and ecosystems, to reduce the conditions that drive zoonotic spillover and antimicrobial resistance, and to stand with science in the work of healing a wounded world (WHO 2022; UNEP and ILRI 2019; WHO 2026a; WHO 2026c).

Reconnecting human, ecological, and planetary well-being is not an optional moral add-on to public health. It is a lived responsibility carried by communities, expressed through everyday choices, relationships, and systems of care. Faith communities and religious leaders are essential partners in this work, helping to sustain hope, mobilize action, and ensure that responses remain grounded in justice and solidarity. It is the necessary foundation for protecting life with justice in a time of climate disruption (IPCC 2022; Whitmee et al. 2015). It invites a renewed recognition of oneness—a commitment to live as part of an interconnected creation, where healing must be collective, and where justice is grounded in the shared dignity and interdependence of all life.

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**Gracia Violeta Ross** is a Bolivian social anthropologist and HIV advocate. Diagnosed in 2000, she mobilized communities to secure access to antiretroviral treatment, helped shape Bolivia's HIV legislation, and advanced financing for HIV care. She has represented Latin America in global health forums, including UNAIDS, the Global Fund, WHO, UN Women, UNITAID, the Medicines Patent Pool, and the Stop TB Partnership. A writer and speaker, Ross focuses on the right to health, leadership of communities, gender-based violence, using experience to challenge stigma and influence policy. Since 2022, she leads the HIV and pandemic work at the World Council of Churches.