PUBLICAÇÃO 99

ISSN: 0101-9562
ISSN ELETRÔNICO: 2177-7055

# SEQÜÊNCIA

## Estudos jurídicos e políticos

Publicação do
**Programa de Pós-Graduação em Direito da UFSC**

VOLUME 46 ▪ ANO 2025

UFSC PPGD

SciELO

CAPES QUALIS A1

SEQÜÊNCIA – ESTUDOS JURÍDICOS E POLÍTICOS é uma publicação temática e de periodicidade quadrimestral, editada pelo Programa de Pós-Graduação Stricto Sensu em Direito da Universidade Federal de Santa Catarina – UFSC.

SEQÜÊNCIA – ESTUDOS JURÍDICOS E POLÍTICOS is a thematic publication, printed every four months, edited by the Program in law of the Federal University of Santa Catarina – UFSC.

Versão eletrônica: http://www.periodicos.ufsc.br/index.php/sequencia



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Ficha catalográfica

Seqüência: Estudos jurídicos e políticos. Universidade Federal de Santa Catarina. Programa de Pós-Graduação em Direito. n.1 (janeiro 1980)-.

Florianópolis: Fundação José Boiteux. 1980-.

Publicação contínua

Resumo em português e inglês

Versão impressa ISSN 0101-9562

Versão on-line ISSN 2177-7055

1. Ciência jurídica. 2. Teoria política. 3. Filosoia do direito. 4. Periódicos. I. Universidade Federal de Santa Catarina. Programa de Pós-graduação em Direito

CDU 34(05)

Catalogação na fonte por: João Oscar do Espírito Santo CRB 14/849

PUBLICAÇÃO 99

SEQÜÊNCIA

Publicação do
Programa de Pós-Graduação em Direito da UFSC

Estudos jurídicos e políticos

Ano XLIX
Volume 46

e104310
https://doi.org/10.5007/2177-7055.2025.e104310

ORIGINAL ARTCLE

# Climate injustice and fires in the Amazon: One Health in tackling violations of the human right to health caused by climate change

## *Injustiça climática e incêndios na Amazônia: Saúde Única no enfrentamento das violações do direito humano à saúde causadas pelas mudanças climáticas*

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**Abstract:** Climate injustice exacerbates the vulnerability of marginalized populations, as exemplified by the severe impacts on the human right to health experienced by communities in the Brazilian Amazon during the 2024 fires. This article investigates whether adopting the One Health approach in national policies, plans, and frameworks related to climate emergency and health can provide a more effective response to the violations of the human right to health resulting from climate change. The study evaluates the potential of the One Health framework to enhance state capacity in addressing climate-related health violations. A deductive research approach was employed, utilizing the monographic method and extensive review of doctrinal literature and national and international scientific articles. The research incorporated bibliographic and documentary methods. Findings affirm that integrating the One Health perspective into national policy frameworks significantly strengthens the state's ability to respond to health violations driven by climate change.

**Keywords:** Climate justice. Right to health. Climate change. One health.

**Resumo:** A injustiça climática exacerba a vulnerabilidade de populações marginalizadas, como exemplificado pelos severos impactos no direito humano à saúde enfrentados por comunidades na Amazônia brasileira durante os incêndios de 2024. Este artigo investiga se a adoção da abordagem Saúde Única em políticas, planos e marcos nacionais relacionados à emergência climática e saúde pode oferecer uma resposta mais eficaz às violações do direito humano à saúde decorrentes das mudanças climáticas. O estudo avalia o potencial da abordagem Saúde Única

para aprimorar a capacidade estatal de enfrentar violações climáticas relacionadas à saúde. Foi empregada uma abordagem de pesquisa dedutiva, utilizando o método monográfico e uma ampla revisão de literatura doutrinária e artigos científicos nacionais e internacionais. A pesquisa incorporou métodos bibliográficos e documentais. Os resultados confirmam que a integração da perspectiva Saúde Única em marcos políticos nacionais fortalece significativamente a capacidade do Estado de responder às violações à saúde impulsionadas pelas mudanças climáticas.

**Palavras-chave:** Justiça climática. Direito à saúde. Mudanças climáticas. Saúde única.

## INTRODUCTION

The world is facing a climate emergency, marked by increasingly frequent and severe environmental crises. In Brazil, this scenario has been particularly evident in the widespread droughts and fires that have devastated large parts of the country, alongside severe flooding in the southern regions. Within this context of ongoing climate injustice, it is the most vulnerable populations that bear the heaviest burden of climate change impacts. In the Amazon region, these populations include Indigenous peoples, quilombolas, extractivists, artisanal fishermen, settlers, river dwellers, and family farmers.

This article addresses the following research problem: In light of national climate injustice, with a focus on the fires in the Brazilian Amazon, could the integration of the One Health approach into national policies, plans, and documents on climate emergency and health offer a more effective response to violations of the human right to health caused by climate change?

The central hypothesis is that the adoption of the One Health perspective in national frameworks can better equip the state to address these violations. The theoretical foundation combines the concept of climate injustice with the principles of One Health, which serve as the basis for formulating the hypothesis and analysis model. Consequently, this research employs the hypothetical-deductive method (Quivy & Campenhoudt, 1998).

The article's objectives are organized as follows: The first section examines the factual framework of the 2024 climate emergency, with a particular focus on the fires in Brazil and their impacts on the human right to health in the Amazon. The second section contextualizes these violations within the broader framework of national climate injustice. The third section identifies and analyzes key national policies, plans, and documents that address climate emergency and health issues directly or indirectly. Finally, the article discusses the concepts of Environmental Health and One Health, exploring the potential contributions of the One Health approach to mitigating violations of the human right to health in the context of climate change.

The relevance of this study lies in its focus on the substantial impacts of climate change on the human right to health, particularly in the Global South[1]. According to the 2024 Lancet Countdown on Health and Climate Change, populations worldwide are experiencing unprecedented threats to their health, survival, and well-being. Of the 15 indicators used to monitor health impacts related to climate change, 10 reached concerning new records in the latest report (The Lancet, 2024).

The research adopts a deductive approach, with a monographic method of procedure. The techniques employed include extensive bibliographic and documentary research, drawing from national and international scientific literature and relevant policy documents.

## 1. THE 2024 FIRES AND THEIR SOCIO-ENVIRONMENTAL AND HEALTH IMPACTS

The year 2024 witnessed a record number of fires devastating Brazilian biomes, significantly impacting the Amazon, Cerrado, and

[1] The term Global North-South serves as a metaphor to describe the disparities in development between countries. It reflects historical processes such as colonialism and neo-imperialism, as well as the resulting economic and social transformations that continue to perpetuate profound global inequalities (Dados & Connell, 2012).

Pantanal. From January to November, fire outbreaks in the Amazon increased by 43.7% compared to the same period in 2023, with even sharper increases in the Cerrado (64.2%) and the Pantanal (139%) (INPE, 2024). This alarming rise is linked to extreme drought conditions, resulting from the interplay of an intense El Niño event, deforestation, and the ongoing effects of climate change (WWF, 2024).

The drought experienced in 2024 was unprecedented, marking the most prolonged and severe in Brazil in the past 70 years, according to the National Center for Natural Disaster Monitoring and Alerts (CEMADEN, 2024). This phenomenon coincided with 2024 being recorded as the hottest year in history, with global average temperatures reaching 1.54°C above pre-industrial levels (WMO, 2024).

In November alone, 14,158 fire outbreaks were recorded in the Amazon, representing a 46.2% increase compared to the previous five years (INPE, 2024). The fires predominantly affected regions along access routes such as highways, highlighting the role of anthropogenic activities in the deforestation-fire nexus. Notably, São Félix do Xingu (PA), home to Brazil's largest cattle herd, and municipalities like Altamira (PA), Apuí (AM), and Novo Progresso (PA) were among the most affected areas, often linked to agricultural expansion and infrastructure development (INPE, 2024).

The scale of devastation was immense. According to figures compiled by the Environmental Satellite Applications Laboratory (Lasa), of the Federal University of Rio de Janeiro, and published by the Ministry of the Environment and Climate Change (MMA), an area of 13 million hectares of native forest in the Amazon (an area similar in size to England) was affected by fire between January 1 and October 20, 2024 (BRAZIL, 2024a).

Climate change goes beyond a question of atmospheric science; it is also a question of human rights. It jeopardizes the full enjoyment of fundamental rights, such as the right to life, food, housing and health. These impacts are more severe for people in vulnerable

situations due to factors such as geographical location, gender, age, race, poverty, disability or social status. It is an injustice that those who have contributed the least to the problem are the ones most affected by its effects (Robinson, 2014).

By the end of the century, depending on the rates of warming and population growth, 1 to 3 billion people will be living in regions lacking suitable climatic conditions for human beings (Xu et al., 2020). Although this scenario has not yet been consolidated, the reality of many populations living in the Global South, such as in the regions most affected by droughts in Brazil, already reflects a very unfavorable scenario for a full life. Therefore, a fundamental human right that is often violated in these contexts is the right to health.

The impacts of climate change on the right to health are widely recognized. The 2015 Lancet Commission on Health and Climate Change documents the direct effects on human well-being, such as heat stress, droughts, floods and an increase in intense storms, as well as indirect impacts such as air pollution, the spread of disease vectors, food and nutrition insecurity and mental health problems. The Commission's main conclusion is that fighting climate change could be the greatest global health opportunity of the 21st century. Thus, acting against climate change is justified both for health reasons and for environmental and economic reasons (Watts, 2015).

According to the Lancet Countdown 2024 report on health and climate change, heat-related mortality for people over 65 increased by a staggering 167% compared to the 1990s. This increase was 102 percentage points higher than the 65% that would have been expected without rising temperatures. Exposure to heat is also increasingly affecting physical activity and sleep quality, which in turn impacts physical and mental health. In 2023, exposure to heat put people practicing physical activities outdoors at risk of heat stress (moderate or greater) for 27.7% more hours than the average recorded in the 1990s, and resulted in a loss of 6% more hours of sleep compared to the average from 1986 to 2005 (The Lancet, 2024).

Around the world, people are also increasingly exposed to life-threatening extreme weather events. Hotter and drier weather conditions are increasingly favoring the occurrence of sand and dust storms. This data demonstrates the growing threat to public health posed by climate change, with direct implications for the quality of life and mental and physical well-being of vulnerable populations (The Lancet, 2024).

Human health is affected by heat both directly and indirectly. Human thermoregulation can be altered by prolonged exposure to extreme temperatures (Ahima, 2020) and heat-related disorders include cardiovascular, respiratory and renal diseases (Wellenius et al., 2017).

As for the indirect health effects of heat, drought and water shortages can impact health and well-being in a number of ways, which can include increased incidence of food-, water- and vector--borne diseases; malnutrition; and food insecurity. Drought can also intensify heat waves, leading to greater heat stress, and can increase the likelihood of other climate-related extreme events and their respective health impacts (Ebi et al., 2021).

Still on the indirect effects, it is worth mentioning the consequences of reduced air quality related to fires, such as an increased risk of hospitalization due to respiratory diseases (Machado-Silva et al., 2020).

The AR6 Synthesis Report: Climate Change 2023 by the Intergovernmental Panel on Climate Change (IPCC) highlights that climate change has affected human health globally, both physically and mentally in various regions, and is contributing to humanitarian crises, where climate disasters combine with high vulnerabilities. In all regions, extreme heat events have led to an increase in mortality and morbidity. Climate-related food- and water-borne diseases have become more frequent, as has the increase in vector-borne diseases due to the expanding range or increased reproduction of these vectors. Animal and human diseases, including zoonoses, are emerging in new areas (IPCC, 2023).

Some mental health challenges in affected regions are associated with higher temperatures, trauma from extreme events and the loss of livelihoods and culture. The impacts of climate change on health are mediated by natural and human systems, including economic and social aspects and the changes caused by these conditions. In addition, extreme weather and climate phenomena are increasingly driving population displacement, with small islands in the Caribbean and South Pacific being particularly affected due to the small size of their populations (IPCC, 2023).

In the Brazilian Amazon, the health consequences of fires are evident. A study analyzing the effects of drought from 2000 to 2016 in Porto Velho revealed a 27% increase in hospitalizations due to respiratory diseases during drought years, underscoring the critical role of rainfall and humidity in mitigating health impacts (Machado-Silva et al., 2020).

In response to the 2024 fires, Brazil's National Situation Room for Climate Emergencies in Health conducted field missions in Pará, documenting health issues caused by smoke exposure, particularly among children and the elderly. The most commonly reported health problems included respiratory difficulties, eye irritation, nosebleeds, and mental health impacts (BRAZIL, 2024b).

The cascading health impacts of the 2024 fires underscore the urgent need for integrated and equitable responses to climate emergencies. Recognizing and addressing the disproportionate effects on vulnerable populations is essential for advancing climate justice and protecting fundamental human rights.

## 2 VIOLATIONS OF THE HUMAN RIGHT TO HEALTH WITHIN THE FRAMEWORK OF NATIONAL CLIMATE INJUSTICE

The harmful effects of disregarding nature and its resources result in significant negative externalities that impact the entire planetary

system, far beyond local or regional scales. Examples include climate change, air pollution, and health-related diseases, all of which compromise social well-being and quality of life for both current and future generations (Silva, Machado, & Jaborandy, 2024).

Since 1990, climate change has been increasingly recognized as a severe threat not only to human well-being but also to the very survival of humanity. Despite numerous international conferences and agreements, greenhouse gas emissions continue to rise, with the accumulation of carbon emissions reaching critical levels.

According to the AR6 Synthesis Report: Climate Change 2023, human activities—primarily the emission of greenhouse gases—have been unequivocally linked to global warming. The Earth's surface temperature increased by 1.1°C above pre-industrial levels (1850–1900) during the period 2011–2020. These rising emissions result from unsustainable energy use, land-use changes, and consumption patterns that differ significantly across regions, countries, and socioeconomic groups (IPCC, 2023).

The consequences of human-induced climate change include extreme weather and climate events, which are already causing widespread damage and loss, affecting both natural ecosystems and human communities (IPCC, 2023). Notably, the most vulnerable populations—those who have historically contributed the least to climate change—disproportionately bear the brunt of its impacts, thereby illustrating a stark reality of climate injustice.

Climate injustice is a core issue in contemporary discussions on environmental justice. Originating in the United States during the 1960s civil rights movement, the environmental justice movement highlighted the unequal distribution of environmental risks among economically and socially marginalized populations. In Brazil, this movement gained traction through unions in the chemical sector, which drew attention to the link between industrialization and environmental hazards (Fagundez, Albuquerque, & Filpi, 2020).

The effects of climate change extend beyond environmental degradation, significantly undermining fundamental human

rights. These include the right to water, food, shelter, health, and safety, as well as rights related to migration and resettlement. In the context of climate injustice, the rights of marginalized groups—those with limited institutional protection—are particularly vulnerable (Albuquerque, Fagundez, & Fabre, 2022). Developing nations, particularly in the Global South, face disproportionate climate impacts due to two primary factors: their geographic location in tropical regions and limited adaptive capacity[2]. These nations often lack the economic resources, robust infrastructure, and state capacity necessary to mitigate the effects of climate change. Small island nations, low-lying regions like Bangladesh, and arid zones such as the Sahel in Africa are among the most vulnerable (Keohane, 2018).

Climate justice seeks to address these disparities by linking human rights and sustainable development. It advocates for placing human dignity at the center of climate actions, ensuring that the burdens and benefits of climate policies are distributed equitably, and prioritizing the protection of the most vulnerable (Robinson & Shine, 2018).

In Brazil, the fires of 2024 exemplify domestic climate injustice. Vulnerable populations in the Amazon, such as indigenous peoples and forest-dependent communities, suffer the most significant consequences of climate change, despite contributing minimally to its causes. These communities face threats to their livelihoods, as their existence is deeply intertwined with ecosystems that are being increasingly degraded by deforestation and climate change.

Traditional populations in the Amazon, including indigenous peoples, quilombolas, extractivists, artisanal fishers, settlers, riverine communities, and family farmers, are particularly at risk. They

[2] As defined in Law No. 12.187/2009, which instituted the National Policy on Climate Change (PNMC), adaptation encompasses initiatives and measures designed to minimize the vulnerability of natural and human systems to the observed and anticipated impacts of climate change (BRAZIL, 2009).

face a range of environmental threats, including wildfires, prolonged droughts, intense rainfall, floods, and land degradation. Their dependence on biodiversity and natural resources heightens their vulnerability, especially given their limited capacity to migrate and insecure land tenure. Furthermore, these communities often live in isolated areas with restricted access to public services and markets. The impacts include declining fish stocks, disruption of livelihoods, increased prevalence of vector-borne diseases, and heightened risks of respiratory illness and poisoning due to smoke from fires (BRAZIL, 2016a).

Between January and August 2024, fires destroyed 3.08 million hectares of land allocated for indigenous peoples in Brazil, accounting for 27% of the total 11 million hectares burned nationwide. The effects on indigenous communities are severe, with respiratory illnesses disproportionately affecting the young and elderly. Fires have also disrupted access to territories, destroyed homes and crops, and undermined food security (Prazeres, 2024).

Climate injustice is evident both on a global and national scale. Internationally, nations in the Global South disproportionately bear the consequences of climate change, despite contributing the least to its causes. Domestically, marginalized groups—including indigenous peoples, Black communities, women, people living in poverty, persons with disabilities, and the elderly—suffer the heaviest burdens. These intersecting socio-economic and environmental vulnerabilities underscore the urgency of addressing climate injustice through inclusive and equitable policies.

## 3. EXISTING NATIONAL POLICIES ON CLIMATE EMERGENCY AND HEALTH

National policies addressing the climate emergency and health in Brazil integrate public health, human rights, and environmental

concerns through various frameworks, plans, and initiatives. The most significant include the National Climate Change Adaptation Plan (Plano Nacional de Adaptação à Mudança do Clima -PNA), the National Environmental Health Policy (Política Nacional de Saúde Ambiental- PNSA), the National Policy on Climate Change (Política Nacional sobre Mudança do Clima - PNMC), the National Health Surveillance System (Sistema Nacional de Vigilância em Saúde - SNVS), the National Situation Room for Climate Emergencies in Health (Sala de Situação Nacional de Emergências Climáticas em Saúde), and the Health Sector Plan for Mitigation and Adaptation to Climate Change (Plano Setorial da Saúde para Mitigação e Adaptação às Mudanças Climáticas).

The National Climate Change Adaptation Plan, established by Ordinance nº 50 on May 10, 2016, aims to reduce the country's vulnerability to climate change through risk management measures. Developed in collaboration with the federal government, state entities, civil society, and the private sector, the plan aligns with Brazil's commitments under the United Nations Framework Convention on Climate Change and the Conference of the Parties (COP). The National Climate Change Adaptation Plan provides guidelines and strategies to mitigate the adverse social, environmental, and economic impacts of climate change, while also proposing mechanisms for cross-sectoral collaboration. The plan is designed to address gaps identified in the national context and improve Brazil's capacity to adapt to climate risks. In 2024, Law nº 14.904 further refined the plan's institutional framework, introducing updated guidelines for climate change adaptation strategies (BRAZIL, 2024c).

Among the health-specific goals outlined in the plan is the aim to increase to 85% the proportion of Brazilian municipalities served by the National Program for Monitoring the Quality of Water for Human Consumption (Vigiagua) by 2019. Additionally, the plan aims to establish a network for studies, research, monitoring, and communication on climate and health to expand technical and scientific knowledge

and provide support for health situation analysis and decision-making within the Unified Health System (SUS) (BRAZIL, 2016b).

The National Environmental Health Policy aims to protect and promote human health by addressing socio-environmental factors through integrated actions involving government bodies and civil society. The policy prioritizes the development of environmental health monitoring systems, fostering health-promoting environments, and generating knowledge to support health interventions.

This policy is still under development in Brazil and has yet to be fully implemented. However, Brazil has guidelines related to environmental health and various initiatives and regulations addressing the interface between the environment and health.The normative reference related to Environmental Health can be found in the Federal Constitution in articles 23, items II, VI, VII, and IX, article 196, article 200, and article 225 (BRAZIL, 1988).

Although its full implementation has not yet occurred, advances have been made in related policies as a result of the formulation of the National Environmental Health Policy. One example is Law nº. 12.305, of August 2, 2010, which established the National Solid Waste Policy (BRAZIL, 2010). The implementation of this policy has enabled various municipalities in Brazil to organize recycling cooperatives and establish adequate systems for selective waste collection. Additionally, it promotes social inclusion and generates employment for former street waste pickers or individuals with low levels of education. Another significant example is the strengthening of the National Environmental Education Policy, established by Law nº 9.795/1999, which encourages education, communication, information dissemination, and knowledge production at all levels and modalities of education in the country. The implementation of these policies contributes to promoting citizenship and social rights, expanding access to education and health for the Brazilian population (BRAZIL, 1999).

Instituted by Law nº 12.187 of 2009, the National Policy on Climate Change aims to promote actions to mitigate the effects of

climate change and adapt Brazil to these impacts. It aligns with the commitments the country has made in international agreements, such as the United Nations Framework Convention on Climate Change. The policy aims to reduce greenhouse gas (GHG) emissions and implement adaptation measures to protect social, economic, and environmental systems. Among the adverse effects of climate change considered in the law are impacts on human health and well-being (BRAZIL, 2009, art. 2, item II).

The National Health Surveillance System was established by Law nº. 8.080/1990 and comprises a set of actions and services to guarantee public health in Brazil, focusing on the prevention, monitoring, and control of diseases and health hazards. It involves collaboration among various entities and government bodies to coordinate and implement activities related to epidemiological, sanitary, environmental, and occupational health surveillance, as well as promoting health education and communication initiatives (BRAZIL, 1990).

The National Health Surveillance Policy, approved by Resolution nº 588/2018 of the National Health Council, provides guidelines for the operation of the National Health Surveillance System. As the normative framework defining the vision and strategic objectives of this system as an operational tool, this policy also encompasses knowledge, practices, and processes related to environmental health surveillance. The National Health Surveillance Policy is built upon key pillars, including health promotion, reduction of inequalities, social participation, and the integration of environmental, occupational health, sanitary, and epidemiological surveillance systems (BRAZIL, 2018).

Environmental Health Surveillance encompasses the activities of the Surveillance of Water Quality for Human Consumption (VIGIAGUA), Environmental Health Surveillance Related to Risks from Disasters (VIGIDESASTRES), and Surveillance of Populations Exposed to Chemical Contaminants (VIGIPEQ) (Brazil, 1990).

Additionally, there is the National Climate Emergency Health Room, linked to the Department of Health Surveillance and

Environment of the Ministry of Health, which serves as a central tool for coordinating responses to climate-related emergencies. Established by Ordinance nº. 4.923, on July 25, 2024, its mission is to address the challenges associated with extreme climate events, such as wildfires, water shortages, and other adverse climatic phenomena, in a swift and effective manner (Brazil, 2024d).

The National Climate Emergency Health Room plays a critical role in responding to climate emergencies in Brazil. Its responsibilities include planning and coordinating actions during crises, proposing rapid response protocols, liaising with public managers and entities, disseminating epidemiological information, providing training for healthcare professionals, and deploying medical teams when necessary. Moreover, it is tasked with preparing biweekly technical reports for the Minister of Health, detailing the epidemiological situation and ongoing measures (Brazil, 2024d).

The composition of the Health Room includes representatives from various departments of the Ministry of Health, such as the Department of Health Surveillance and Environment, which acts as the coordinator, along with other departments related to healthcare, science, technology, workforce management, and indigenous health. This integrated structure aims to ensure an effective and coordinated response to the demands generated by extreme climate events (Brazil, 2024d).

The Health Sector Plan for Mitigation and Adaptation to Climate Change was created to implement actions in mitigation and adaptation, emphasizing strengthening the healthcare services' capacity to respond to the impacts of climate change. The plan is structured into four main areas: Health Surveillance, Healthcare, Health Promotion and Education, and Health Research (Brazil, 2016c).

The specific objectives of the plan aim to adapt the Unified Health System (SUS) to the challenges posed by climate change, with the goal of reducing population vulnerabilities. Key objectives include strengthening the preparation and response capacity of healthcare services, ensuring that the Unified Health System is equipped

to effectively address climate impacts. Additionally, the plan seeks to support the creation of a low-carbon economy within the healthcare sector by implementing mitigation actions that contribute to reducing greenhouse gas (GHG) emissions in healthcare services and product processes (Brazil, 2016c).

## 4. THE INTEGRATION OF ONE HEALTH IN CLIMATE CHANGE ADAPTATION AND MITIGATION FRAMEWORKS

Environmental Health, as defined by the World Health Organization (WHO), is a field that addresses the impacts of eco-geosocial interactions between humans and their environment on health, aiming to promote well-being, quality of life, and sustainability. This approach informs public policy development through available knowledge and active social participation (WHO, 1993). In Brazil, this concept is further extended by the General Coordination of Environmental Health Surveillance (CGVAM) and the Health and Environment Thematic Group of the Brazilian Association of Collective Health (Abrasco), which emphasize the interconnectedness of human health with both natural and human-made environmental factors. The creation of environmental health surveillance programs in Brazil reflects a growing response to health problems arising from exposure to environmental pollutants, aiming to control and reduce harm to human health through monitoring and regulation (Brazil, 2007).

Environmental Health goes beyond traditional ecological views by addressing the social determinants of health and highlighting the need for a comprehensive public health approach that encompasses impoverished populations and new diseases emerging from environmental factors (Leff, 2001). The concept of One Health shares similar objectives, offering a transdisciplinary and multisectoral approach that recognizes the interdependence of human, animal, and environmental health. Broadly defined by the U.S. Centers for Disease Control and

Prevention (CDC) and the One Health Commission, One Health aims to optimize health outcomes by acknowledging the interconnectedness of humans, animals, and plants, particularly in the context of climate change and environmental dynamics (Mackenzie & Jeggo, 2019).

One Health's relevance has grown in response to rapid climatic, environmental, and urban changes. It emphasizes the importance of understanding the links between human health, animal health, and environmental conditions. This approach aligns with the ecological conception that all natural components are interconnected, which directly links it to the field of Environmental Health (Fagundez, 2023). While both Environmental Health and One Health share common goals, their approaches differ: Environmental Health focuses primarily on the direct impact of environmental factors on human health, while One Health adopts a broader interdisciplinary perspective, integrating the health of humans, animals, and ecosystems. Given the complexity of climate change, which affects human health through various interconnected pathways, it is crucial to incorporate One Health into national climate and health policies.

The term One Health does not appear directly in Brazilian legislation, but the term "Environmental Health" is mentioned in various provisions and is referenced, as seen in the previous subsection, in articles of the Federal Constitution.

The One Health approach is supported by international organizations, such as the World Health Organization (WHO), the Food and Agriculture Organization (FAO), and the United Nations Environment Programme (UNEP), which form the One Health Quadripartite. This group aims to promote multisectoral strategies to reduce health risks at the human-animal-environment interface, and the One Health High-Level Expert Panel (OHHLEP) advises on strategies to prevent and mitigate health threats emerging from environmental and animal health (WHO).

One Health's potential for climate change mitigation and adaptation lies in its ability to address the interconnectedness of climate

change, environmental health, agriculture, wildlife, and human health. To effectively address these challenges, state and territorial health agencies can adopt One Health principles by creating interdisciplinary committees that foster collaboration across sectors, including public health, agriculture, wildlife management, and environmental protection (Davis & Youngbar, 2024). This transdisciplinary collaboration facilitates the development of holistic, preventive strategies rather than focusing solely on emergency responses.

Zhang et al. (2022) propose the establishment of a national Climate Change and One Health network to foster scientific collaboration and improve governance. Such networks would facilitate regional alliances and data sharing to monitor wildlife reservoirs and prevent the emergence of zoonotic diseases.

Practically, implementing the One Health approach implies that all actions aimed at preventing, predicting, detecting and responding to health threats must take into account the connections between human, animal and plant health and ecosystems. For example, this approach requires researchers and risk assessors to integrate and share knowledge from different areas (such as veterinary, environmental and human health sciences) when assessing the health risks related to certain disease vectors or contaminants. In addition, it requires risk managers and policymakers to address the source of the problems in order to prevent and mitigate health risks, such as by reducing human pressures on the environment (Bishen, 2024).

The importance of including the concept of One Health in the context of climate change mitigation and adaptation is related to the intrinsically interdisciplinary and dynamic nature of climate change. Climate change affects the environment as a whole and, consequently, the health of human and non-human animals. Human health is not an isolated issue and to be properly addressed in adaptation measures it must take into account the connection between all the links in the web of life, promoting an integrated and holistic vision.

Given the context of climate injustice in the country, in which the population of the Amazon most affected consists of the most vulnerable peoples, such as indigenous peoples, quilombolas and other traditional communities, One Health is able to address the imbalances that perpetuate this injustice insofar as it addresses the mentality that guides the ways of life of these populations. By recognizing the interconnection between natural and social systems, it is able to deal with the issue of health in the context of climate change, as it adequately addresses the complexity characteristic of climate change.

To enhance the effectiveness of Brazil's national climate change policies, including the Health Sector Plan for Mitigation and Adaptation to Climate Change and the National Plan for Adaptation to Climate Change, it is essential to adopt a One Health framework. This approach would expand the scope of these plans by fostering interdisciplinary collaboration, ensuring that climate change adaptation and mitigation strategies address the broader interconnected impacts on human, animal, and environmental health. The integration of One Health into national policies is not only necessary for improving public health resilience to climate change but also for advancing health equity in the face of climate-related challenges.

## CONCLUSION

The droughts and fires that ravaged the Brazilian Amazon in 2024 underscore the urgency of addressing climate change through comprehensive national action plans. The most vulnerable populations, disproportionately affected by these climatic shifts, are at the forefront of what can be characterized as climate injustice. Within this context, the human right to health is among the most egregiously violated.

This article commenced by analyzing the national climate emergency of 2024, focusing on the fires in the Brazilian Amazon and the concomitant violations of the human right to health. The second

section explored the concept of climate injustice as an extension of environmental injustice, elucidating the unequal and disproportionately adverse impacts of climate change on the Amazon region. The third section examined the key national policies, plans, and frameworks that address climate change and its implications for the human right to health.

In the fourth section, the research aimed to address the central inquiry by exploring the concepts of Environmental Health and One Health, evaluating how these frameworks might contribute to mitigating the violations of the human right to health associated with climate change. The article's hypothesis has been substantiated, as the potential of integrating the One Health approach into national policies, plans, and documents has been confirmed, thereby strengthening the state's capacity to confront the health-related impacts of climate change.

The article also successfully met its specific objectives by examining the factual context of the climate emergency in the Brazilian Amazon, detailing the violation of the human right to health in the face of climate change, and unpacking the conceptual framework of environmental/climate justice within the region. Moreover, it explored critical national frameworks such as the National Plan for Adaptation to Climate Change, the National Environmental Health Policy, the National Policy on Climate Change, the National Health Surveillance System, the National Situation Room for Climate Emergencies in Health, and the Health Sector Plan for Mitigation and Adaptation to Climate Change. Additionally, the paper discussed the potential contributions of the One Health framework in enhancing national efforts to protect the right to health in the context of climate change.

This article aims to contribute to the scholarly discourse by emphasizing the critical importance of safeguarding the human right to health in the face of climate change, given the extensive harm to human well-being and societal functioning. Furthermore, it seeks to demonstrate the significant value of the One Health framework,

advocating for its application as a holistic and interdisciplinary approach to addressing the complex health challenges posed by climate change. Such a comprehensive strategy is essential for ensuring the protection of public health and the promotion of sustainable, equitable responses to the global climate crisis.

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Received: 12/19/2024
Accepted: 09/18/2025