

The Lancet Countdown on Health and Climate Change

# Policy brief for Brazil

2022



# Introduction

Climate change, one of the greatest threats to health in the 21st century, has wreaked health harm throughout the world through more extreme floods, droughts, forest fires, and the creation of areas that are newly suitable for infectious diseases.<sup>1</sup> In Brazil, climate change threatens to reverse the last decades of public health gains. Brazil is vulnerable to health crises as revealed by the loss of the lives of over 688,000 Brazilians in the COVID-19 pandemic.<sup>2</sup> Tragically, it is thought that 400,000 deaths could have been avoided with a stronger public health response,<sup>3</sup> including improving compliance in mask use and social distancing, and greater and earlier vaccination coverage, reinforcing the public health mantra that prevention is better than cure. As Brazil emerged from the pandemic, the subsequent recession has pushed more than 117 million people into food insecurity.<sup>4</sup> Recently, the change in national government reignited commitments

to addressing the twin climate change and biodiversity crises. Actions to address these changes in climate must also become a public health priority with a focus on prevention of health impacts through mitigation and adaptation.<sup>5</sup>

Despite increasing awareness of the health benefits of climate action, the 2022 global *Lancet* Countdown report found (I) a lack of resources to implement the national health adaptation plan for climate change, (II) insufficient mentions of health in the Brazilian Nationally Determined Contribution (NDC) which guides national climate action, and (III) poor availability of urban green spaces in Brazil.<sup>1</sup> Drawing on these three findings, this policy brief proposes practical steps to improve climate policy and action to protect and promote human health.

# Recommendations

1

**Allocate human and financial resources to address health adaptation to climate change.** In 2009, the Brazilian government developed the National Policy on Climate Change, which included a comprehensive assessment and plan for health adaptation. However, insufficient government resources have been allocated to implementing the plan. Subventions for human and financial resources, specifically for health adaptation, should be guaranteed in the National Policy on Climate Change.

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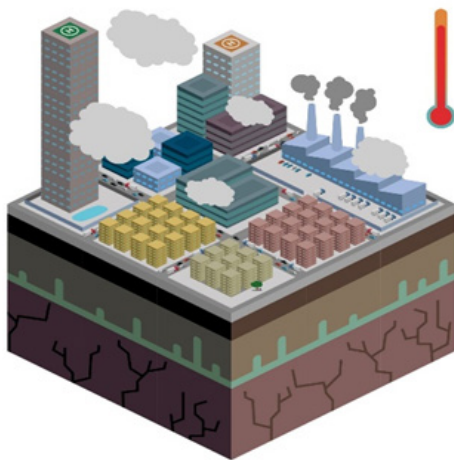
2

**Engage the Ministry of Health in the development of the Nationally Determined Contribution (NDC).** Through NDCs, countries put forward their contributions towards the collective commitments of the Paris Agreement. However, Brazil's NDC has little detail on how actions to reduce emissions or adapt to climate change could deliver health benefits, and how actions to protect health could also reduce greenhouse gas emissions and build climate-resilient health systems (co-benefits). In line with World Health Organisation (WHO) guidance, it is recommended that the Ministry of Health is included in the Inter-ministerial Committee on Climate Change and Green Growth (ICCCGG) to help strengthen the NDC and align climate and public health goals.

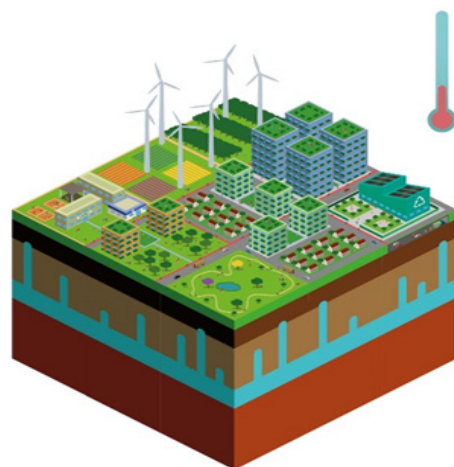
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3

**Increase planned urban green spaces and reduce inequities.** Brazilian cities have inadequate access to urban green spaces, which increases the risks of heat-related illness, among other harms. Increasing the number and extent of high-quality urban green spaces, especially in areas of social deprivation, has the potential to reduce exposure to extreme heat, air, and noise pollution; provide mental health benefits; promote physical activity; and reduce all-cause mortality.<sup>6</sup> A strategy to increase planned urban green spaces while ensuring equitable access should be included in the National Policy on Climate Change.



Infographic A: Urban planning neglects urban green spaces.



Infographic B: Planned urban green spaces promote community engagement, leisure, active transportation, health adaptation, and resilience to climate extremes.

# The impacts of climate change on health

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Climate change is causing significant health harms around the world.<sup>1</sup> Extreme weather events (including flood, droughts, and heatwaves) and the increased risk of pest outbreaks are threatening crop yields. Alongside impacts on supply chains, food prices, and economic losses, climate change is increasing the risk of food insecurity and malnutrition. Weather conditions are becoming more suitable for an increase in the range of infectious diseases such as Dengue, Zika, and Chikungunya. Heat stress and air pollution from fossil fuel use are associated with heart and respiratory disease and poor birth outcomes, and extreme events such as floods and hurricanes exacerbate mental illness.<sup>7,8</sup> Given these health threats, governments at national, state, and municipal levels must plan and adequately resource programs to support adaptation to this range of climate-related hazards.

Brazil's National Policy on Climate Change (Lei 12.187 de 29 de dezembro de 2009)<sup>9</sup> established sectoral plans for climate action, including the Health Sector Plan for Mitigation and Adaptation to Climate Change.<sup>10</sup> In 2016, the National Plan for Adaptation was

launched, strengthening relationships and communication between 11 different government departments (Agriculture, Infrastructure, Health, Water Resources, Biodiversity and Ecosystems, Industry and Mining, Natural Disasters, Coastal Zones, Food, and Nutrition Security, Cities, and Peoples and Vulnerable Populations), (instituted by Portaria nº150 de 10 de maio de 2016, of the Ministry of Environment).<sup>11</sup> However, despite the impacts of climate change on health there has been little progress on health adaptation plans since 2016.

The 2022 global *Lancet* Countdown report shows that, while Brazil has developed new health and climate policies and revised old ones, they have been inadequately funded and implemented (**indicator 2.1.1**). These plans must be reactivated and updated by the ICCCGG and adequately resourced so that Brazil can be better prepared for climate change and can adapt more effectively to impacts to protect health and well-being. Clear identification of funding streams for health sector adaptation is needed in the National Climate Change Plan.

## Ensure the involvement of the Ministry of Health in the development of the Nationally Determined Contribution and other climate committees.

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The 2022 global *Lancet* Countdown report on Health and Climate Change found only three mentions of health in Brazil's NDC (**indicator 5.4.2**). Even then, health is mentioned as a separate field of concern from climate change and the linkages between the two go unexplored. The importance of health and the co-benefits of climate action should be highlighted in the NDC and used as a decision tool to allocate limited resources. For example, prioritization of resources to reduce forest fires in the Amazon region (climate action) can simultaneously reduce death and illness from air pollution<sup>12</sup> (public health benefit), which consequently would also reduce healthcare costs, saving economic expenditure. An estimate of healthcare cost reductions due to climate action could help push for more resources being allocated towards climate mitigation.

Other examples of climate action which could be included in the NDC to benefit public health and well-being include investing in low- or zero-emissions public transport, retrofitting buildings to improve energy efficiency, transitioning from fossil fuels to renewables

such as wind and solar power, restoring degraded and deforested land,<sup>13</sup> implementing healthcare adaptation to climate change, and greening urban spaces.

The Brazilian climate change mitigation and adaptation landscape is expected to improve under the new presidency. In January 2023, the Minister of Environment and Climate Change committed to including environmental protection and enhancement in all federal policies.<sup>14</sup> One ambitious pathway to ensure co-benefits for health and climate action is to include the Ministry of Health in the Inter-ministerial Committee on Climate Change and Green Growth (ICCCGG). The committee should work to include a focus on public health in the NDCs to highlight the health co-benefits of climate change action and guarantee that synergistic targets are formulated, funded, and implemented. This change would also align with the World Health Organization's recommendations to include the Ministry of Health in high-level climate action and economic plans.<sup>15</sup>

# Increase equitable access to planned urban green spaces

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Heat waves and rising urban temperatures cause negative effects on human health and well-being. By 2050, more than 87% of the Latin American population is expected to be living in urban areas.<sup>16</sup> These areas experience greater heating than the areas around them through the urban heat island effect, which is caused by the high thermal mass of paved surfaces, low evapotranspiration, anthropogenic heat, and low ventilation, which leads to higher temperatures than the surrounding non-urbanized areas.<sup>17</sup>

The 2022 global *Lancet* Countdown report assessed the 32 Brazilian urban centres with more than 500,000 inhabitants for the level of greenness (indicator 2.2.3). None of these urban centres were found to have adequate quantity of urban green spaces (UGS), with 18 cities assessed as *low* UGS coverage and 14 as *very low*. This scenario shows limited access to the environmental, social, and health co-benefits of green spaces, including the promotion of increased physical activity, reduced air and noise pollution, reduced urban heat, improved mental health including through increased leisure and social interaction, and reduced overall mortality. Green spaces may also have additional uses such as community agriculture and gardening and provide regulatory services such as air purification, water and climate regulation, and carbon and stormwater storage.

Planned UGS are considered an appropriate way to reduce the urban heat island effect and provide shading and comfort to nearby occupants.<sup>18</sup> The insufficiency of UGS is associated with poor redensification policies in city centre areas, reducing access to green spaces

and increasing inequities. Nevertheless, an increase in UGS must be carefully planned using locally appropriate plant species and management to avoid creating a reservoir for vector-borne diseases. Moreover, UGS must be equitably distributed in urban areas to reduce the risks of gentrification, which would increase social inequalities.

In recent years, several studies demonstrate the positive impacts of green infrastructure on urban microclimates.<sup>18</sup> However, uncertainties remain about the most effective green infrastructure. A recent study conducted in Foz do Iguaçu, Brazil, proposed the creation of green spaces from forest fragments in the urban territory.<sup>19</sup> The proposal promoted the identification and description of forest fragments based on their suitability for creating urban green spaces. To reduce or avoid increasing inequality, the study proposed that the fragments classified as suitable for creating urban green spaces should be the regions without already created areas, followed by those with lower green area index. Similar practices should be adopted in different Brazilian regions to optimize the provision of ecosystem services and contribute to more liveable and healthy cities.

To implement these strategies, Brazil has a National Fund on Climate Change and a National Green Program under the governance of the ICCCGG that oversees the creation and consolidation of green criteria and guidelines. Thus, it is recommended that they focus on increasing the quantity, quality, and accessibility of urban green spaces in Brazil, prioritising disadvantaged and deprived areas, while taking the characteristics of each region of Brazil and all its biomes into consideration.<sup>20</sup>

## Conclusion

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Climate change will exacerbate food insecurity, housing instability, and heat wave exposure, among other problems. It is imperative to allocate human and financial resources to tackle this issue comprehensively. The new federal government has expressed the will to include environmental concerns in all policies, which must include health, in alignment with the World Health Organization's recommendation to include the

Ministry of Health in all high-level climate and economic planning. These policies should also support climate and health-benefiting urban redesign. This is a unique opportunity to highlight the potential role of climate and health action co-benefits to accelerate public support towards investing and implementing the transition to a healthier and climate-smart nation.

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## Organisations and acknowledgements

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### **THE POSTGRADUATE PROGRAM IN SCIENCE EDUCATION, CHEMISTRY OF LIFE AND HEALTH (PPGECI)**

The PPGECI is a consortium between the Federal University of Rio Grande do Sul, Federal University of Santa Maria and Federal University of Pampa. It investigates social practices present in laboratories and classrooms of universities and schools, regarding the education of science, biochemistry, environment and health related areas.

### **THE OSWALDO CRUZ FOUNDATION (FIOCRUZ)**

FIOCRUZ is an institution of science and technology in health and it is part of the Brazilian Ministry of Health, its main purpose is to produce, disseminate and share knowledge and technologies aimed at strengthening and consolidating the Unified Health System (SUS), so contributing to the improvement of the health and life quality of the Brazilian population.

### **THE BRAZILIAN SOCIETY OF FAMILY AND COMMUNITY MEDICINE (SBMFC)**

SBMFC includes family physicians working in the public health system (Sistema Único de Saúde) who are responsible for the delivery of the Family Health Strategy (Estratégia Saúde da Família), and primary and general medical care services.

### **TELESSAÚDERS-UFRGS**

TelessaúdeRS-UFRGS is a unit of research, telemedicine and telehealth of the Post-Graduate Program of Epidemiology of the Federal University of Rio Grande do Sul (UFRGS). It develops innovative strategic programs and new technologies to qualify Primary Health Care in Brazil.

### **INSTITUTE OF ADVANCED STUDIES OF THE UNIVERSITY OF SÃO PAULO (IEA-USP)**

The IEA-USP is a think-tank and incubator for future models of new institutes of higher education and even the academia itself. It researches and studies science, technology, arts and other areas of knowledge, to stimulate new ideas, analysis of social issues and development of public policies.

### **UFCSPA**

Located in Porto Alegre, capital city of the state of Rio Grande do Sul, Brazil, the Federal University of Health Sciences of Porto Alegre (UFCSPA) is a Federal Institute of Higher Education, in operation since March 1961. To date, UFCSPA is the only federal higher education institution in Brazil specialized in Health Sciences. Its mission is to produce and share knowledge and educate professionals in the fields of Health Sciences with humanistic values and social responsibility.

### **THE LANCET COUNTDOWN**

The *Lancet* Countdown: Tracking Progress on Health and Climate Change is a multi-disciplinary collaboration monitoring the links between health and climate change. It brings together lead researchers from 43 academic institutions and UN agencies in every continent, publishing annual updates of its findings to provide decision-makers with high-quality evidence-based recommendations. For its 2022 assessment visit <https://www.lancetcountdown.org/2022-report/>

### **THE LANCET COUNTDOWN SOUTH AMERICA**

The *Lancet* Countdown South America exists to promote research on health and climate change in the region, to encourage regional engagement on how climate change is affecting health across the continent, and challenge countries to respond in line with the evidence. It is the only academic centre in South America specifically researching climate change and health and is based at the Clima centre at Universidad Peruana Cayetano Heredia (UPCH) in Lima, Peru.