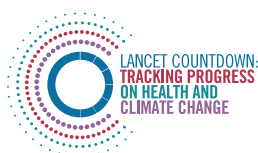


The Lancet Countdown on Health and Climate Change

Policy brief for Brazil

2023



Medicina
de Família e
Comunidade



Healthy and Sustainable Food Systems from Farm to Fork: Maximising health co-benefits from climate action

Introduction

So far, 2023 has been a year of meteorological extremes in the world and Brazil has not been the exception. Notable events include the historic winter heatwave that affected an extensive part of the country,^{1,2} the catastrophic floods in Rio Grande do Sul,³ and record-breaking droughts and wildfires in the Amazon region.^{4,5} These extreme weather events have impacted people's health and wellbeing not only by increased exposure to high temperatures and air pollution, but also by destroying households, livelihoods, and healthcare facilities. These events demonstrate some of the impacts of climate change on human health and elucidate why climate change is the greatest global health threat of the 21st century.⁶

However, there are signs that this daunting picture is galvanising collective action to turn this challenge into a great opportunity for health and wellbeing by, for instance, delivering cross-governmental policies that benefit society, the economy, and the environmental determinants of health. This vision is already driving the National Treasury of Brazil, along with the Ministry of the Environment and Climate Change, to make climate action a cross-cutting issue across governmental departments, including incentives towards a green economy.⁷ Nonetheless, action to tackle climate change and its health impacts is lagging, and needs to be urgently accelerated in order to protect the health and wellbeing of Brazilian populations. Many opportunities exist to deliver health-promoting climate change action that can ensure a prosperous and healthy future, including through the improvement and enhancement of local food systems.

Global food systems are one of the main drivers of climate change, accounting for 30% of global greenhouse gas (GHG) emissions.⁸ According to

2023 *Lancet* Countdown data, 57% of agricultural emissions in 2020 were derived from the production of red meat and milk (**indicator 3.3.1**). This figure is even higher if considering the deforestation driven by expansion of agricultural lands, a major driver of deforestation in Brazil.⁹ The excessive consumption of red meat, processed meat, and dairy products also causes preventable chronic diseases and premature death (**indicator 3.5.1**). These two complementary perspectives highlight the dual negative impacts of the current food systems: they affect the planet and people's health.

In order to transform food systems to make them healthy and sustainable, holistic governmental initiatives that promote equitable access to healthy and low-carbon food that meet local nutritional requirements are urgently needed. Such initiatives should aim to promote healthy food systems, from the point of primary agricultural production to food consumption – or, from farm to fork.

The 2023 *Lancet* Countdown Policy Brief for Brazil identifies the need to maximise the role of key health actors in promoting the Brazilian food guide, including community health workers, and for new and effective policy changes that align and integrate healthy food systems as part of climate change mitigation action. Drawing on evidence from the [2023 global report of the *Lancet* Countdown on Health and Climate Change](#),¹⁰ this brief analyses and connects indicators related to agricultural greenhouse gas emissions and food systems to provide synergistic, intersectoral, and evidence-informed policy recommendations. It provides two recommendations to tackle root causes of climate change and improve the socio-environmental determinants of health.

Healthy and Sustainable Food Systems from Farm to Fork

Maximising health co-benefits from climate action



Monoculture and Unsustainable Farming Methods

Increase in greenhouse gas emissions that intensify **Climate Change**

Altered health indicators as a result of **Climate Change**

Altered health indicators due to high consumption of **meat, processed meat, dairy products and ultra-processed foods**

Food Insecurity



Recommendation 01

Establish **sustainable food systems** with **low greenhouse gas emissions**



Recommendation 02

Establish strategies for adopting **healthy eating habits** that promote **food security, climate justice and social equity**



Figure 1. Recommendations for healthy and sustainable food systems in Brazil.

Recommendations

1

Establish sustainable food systems that include low-carbon agricultural practices to reduce greenhouse gases emissions and other environmental degradation.

Brazil's GHG emissions related to production of agricultural products is higher than those for consumption (either locally produced or imported). This disparity is associated with Brazil's elevated agricultural exports. While these are major contributors to Brazilian economy, the local damage to the environment and people's health is substantial. While the environmental impact occurs in Brazil, the consumption of local produce (and the driver of such impact) takes place elsewhere. Agricultural food production systems that assess and minimise agricultural GHG emissions are fundamental to building future solutions for sustainable and healthy food systems and a sustainable economy in Brazil.

2

Implementing strategies, based on the Brazilian Food Guidelines, to promote healthy eating habits, food security, climate justice, and social equity.

Suboptimal diets are a major health risk factor for the Brazilian population, with thousands of deaths associated with overconsumption of red and processed meat, the imbalanced intake of processed grains, as well as the lack of intake of healthy vegetables. This is despite the publication of the 2014 Brazilian Food Guide, which is an internationally respected and model dietary guideline for the world.^{11,12} Thus, it is essential to develop effective strategies to implement and amplify the transformative potential of the Food Guide for the Brazilian population to promote climate and health action from farm to fork, including promoting the guide through key health actors such as community health workers.

1

Establish sustainable food systems that include low-carbon agricultural practices to reduce greenhouse gases emissions and other environmental degradation.

In 2021, Brazil was the world's largest exporter of soya (91 million tonnes) and the third largest producer of corn and beans (105 million and 2.9 million tonnes, respectively).^{13,14} In addition, the largest volume of beef exported in the world comes from Brazil, reaching 2.5 mega tonnes that same year.^{15,16} These levels of agricultural production, most of which were destined for commodity exports, drive land use change in Brazil and significantly contribute to GHG emissions.

In Brazil's Nationally Determined Contribution (NDC), the country commits to reaching net zero GHG emissions by 2050.¹⁷ Although the deadline looms closer, emissions are not being reduced at the rate necessary to reach this goal, with a large proportion of emissions still coming from the agricultural production sector. According to 2023 *Lancet* Countdown report, between 2000 and 2020, GHG emissions from the local production of agricultural products in Brazil increased by 23% (**Indicator 3.3.1**). In 2020, Brazilian agricultural emissions from food production were 1.2 times the emissions from food consumption, indicating that GHG emissions from production are higher than from consumption of food products. The highest proportion of GHG emissions comes from red meat and dairy products, representing 84% and 10% of total emissions from production of agricultural products, and 83% and 12% of total consumption of agricultural products. (**Indicator 3.3.1**). However, this data is an underestimate as it does not include emissions from land use change and deforestation. In the Brazilian case, these are two factors closely linked to agricultural production. According to data from the System for Estimating Greenhouse Gas Emissions and Removals (SEEG), if emissions from the Brazilian

agricultural sector were added to emissions from deforestation and changes in land use, they would correspond to 73% of the country's total emissions.¹⁸

This evidence is a call for action. If food systems are really intended to promote good health for all while protecting the planet, Brazil needs to transition to sustainable food systems focusing on three key areas: i) finance and human capital; ii) innovation; and iii) low-carbon agricultural practices.

Given the prominent role that agribusinesses play in Brazil, it is fundamental to increase financial investments and invest in human capital to monitor the commercial determinants of health.¹⁹ These determinantsⁱ are major drivers of unhealthy diets and unsustainable agricultural practices, resulting in a high burden of disease and environmental damage through land degradation, deforestation, and intentional wildfires for agricultural production.²⁰ These phenomena are intertwined with private sector activities (including industrial food production and agribusiness), much of which is driven by transnational corporations. Tackling these impacts will require robust public policies and regulations of commercial activities, that keep people's health and wellbeing – and the environment on which they depend – as a central priority.²¹

Additionally, some local initiatives also present good practices for the sector to promote innovation and integrate a nature-based solution perspective to help decrease agricultural emissions. Some examples are: the *Silvopastoral Systems*,²² a system of agricultural production in which trees, pasture, and cattle coexist in the same area and time, in an integrated way, reducing soil degradation and improving emission

ⁱ The commercial determinants of health are the complex and often negative links between the commercial sector and health, including problems like avoidable ill health and planetary damage.

balance, since they preserve and cultivate trees that capture carbon. Another example of this is *Pantanal cattle ranching*, which is also a system of production in which livestock coexists with native species of the Pantanal biome and provides benefits to both mitigation of greenhouse gas emissions as well as protecting and promoting biodiversity.²³

Finally, the agricultural production, distribution, processing, and selling of food products demand a considerable amount of energy. Therefore, to contribute to GHG emissions reduction from the agricultural sector, it is important to focus on energy transition to renewable energy sources that is just and accounts for – and respects – the needs of local populations. Such transition, if delivered keeping

people's livelihoods, health, and wellbeing at its core, would have major environmental benefits, while delivering significant health co-benefits to local residents. Integrating renewable energy in the agricultural sector has the potential to mitigate GHG emissions while tackling energy poverty and reducing the costs to agricultural production – all which contribute to reducing food insecurity.²⁴

In order to benefit local populations, the transformation of food systems also requires a consideration of dietary shifts that offer co-benefits for human and planetary health. This issue is addressed in the next recommendation.

2 Implementing strategies, based on the Brazilian Food Guidelines, to promote healthy eating habits, food security, climate justice, and social equity.

Although global food production is still sufficient to feed everyone on earth, the global population is exposed to diverse forms of malnutrition in a food system that is unequal and that exceeds the planet's biocapacity. Brazil, despite significant progress, is one country that is still dealing with this issue. New 2023 *Lancet* Countdown data estimates that, in Brazil, the consumption of imbalanced and sub-optimal diets was responsible for more than 330,000 deaths in 2020 (Indicator 3.3.2). Amongst them, the consumption of a diet high in red meat, processed meat, and dairy products was associated with more than 76,000 deaths, representing almost a quarter of these deaths. Moreover, the intake of refined grains, which are basic ingredients in most ultra-processed foods, was associated with almost 49,000 deaths.

These findings emphasise the enormous health benefits that could be delivered through a shift towards a healthy diet rich in vegetables, fruits, whole grains, and low in animal products. Such dietary adjustments would not only reduce the burden of chronic non-communicable diseases,²⁵ such as heart disease, diabetes, and cancer, but also

hold the key to mitigating global climate change and environmental degradation. By promoting healthier eating patterns, as recommended in the Brazilian Food Guide, individual health and wellbeing can be enhanced, while reducing deforestation and de-wilding to make room for livestock land, and tackling the global syndemic of malnutrition, obesity, and climate change.

Taking the advantage of the globally recognised²⁶ Food Guide for the Brazilian Population, which includes recommendations for healthy eating habits while addressing social justice,²⁷ seems a good opportunity to advance in promoting healthy food systems for Brazil. However, several challenges need to be overcome. Data show a low level of uptake of its recommendations and there is a notable gap in the assessment of how the guide is understood by Brazilians, its overall effectiveness, and of how its implementation. In fact, evidence suggests that it is still difficult for users, both professionals and general public, to understand and apply its main recommendations.²⁸ In part, this difficulty is due to its food classification being based on levels of

processing which are harder to comprehend than previous perspectives on the classic types of foods.³⁷

To unlock the transformative potential of the Food Guide for the Brazilian Population, the government should invest in communication and translation strategies tailored to critical audiences, which successfully convey key messages about the guide's dual benefits for health and climate resilience, promoting win-win approaches to improve food systems from farm to fork. These initiatives should include empowering the network of more than 257,000 highly trusted community health workers that are in contact with millions of people in their homes and kitchens around Brazil every day.²⁹ These community health workers can play a pivotal role in inviting Brazilian families to follow the Dietary Guidelines for the Brazilian population,³⁰ thereby addressing the interconnected issues of climate change, health, and sustainable dietary habits.

Conclusion

Many nations, especially big commodity exporters like Brazil, face significant challenges regarding agricultural production and food systems as they have a pronounced impact on the country's GHG emission, environmental degradation, human nutrition, and overall health. The imperative to address these challenges involves promoting better, more equitable, healthier, and more sustainable food systems in the

In addition, interventions that support public schools to better implement the tool in their own food programmes,³¹ and incentivise the adoption of the guide in public institutions such as hospitals, educational institutions and the armed forces, can also help promote the shift to healthier diets in Brazil.³² Policies that could enact and implement such initiatives include the Regional and Territorial Development Policies and the National Food and Nutrition Policy.³³

Crucially, any efforts to promote dietary transition must be accompanied by serious and robust incentives and policies that ensure that nutritious and sustainable foods are widely affordable, readily accessible to all, and culturally appropriate.

country. Effective evidence-informed intersectoral policies such as the adoption of sustainable practices such as agroforestry, levered by an empowered Brazilian Food Guide, can mitigate, adapt, and create resilience to climate change from farm to fork, while improving equity, promoting healthy diets, and securing the health of Brazilian populations.

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THE OSWALDO CRUZ FOUNDATION (FIOCRUZ)

Institute of science and technology within the Brazilian Ministry of Health of Brazil. Its main purpose is to produce, disseminate and share knowledge and technologies aimed at strengthening and consolidating the Unified Health System (SUS), 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.

FEDERAL UNIVERSITY OF RIO GRANDE DO SUL (UFRGS)

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Think-tank and incubator for future models of new institutes of higher education and academia itself. The IEA-USP hosts Planetary Health Brazil (Saúde Planetária Brasil) which brings together the Brazilian community on planetary health, including the authors of this report.

FEDERAL UNIVERSITY OF HEALTH SCIENCES OF PORTO ALEGRE (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.

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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 52 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 2023 assessment visit <https://www.lancetcountdown.org/>

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The *Lancet* Countdown Latin 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