

Health and Climate Change in South America

The *Lancet* Countdown South America: increasing health opportunities by identifying the gaps in health and climate change research



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Summary

South America is experiencing the effects of climate change, including extreme weather events and changes in temperature and precipitation patterns. These effects interact with existing social vulnerabilities, exacerbating their impact on the health and wellbeing of populations. This viewpoint highlights four main messages from the series, which presented key gaps from five different perspectives of health and climate. First, there is an overall need for local analyses of priority topics to inform public policy, which include national and sub-national evidence to adequately strengthen responses and preparedness for climate change hazards and address relevant social vulnerabilities in South American countries. Second, research in health and climate is done in silos and the intersection is not clear in terms of responsibility and leadership; therefore, transdisciplinary research and action are key. Third, climate research, policies, and action need to be reflected in effective funding schemes, which until now are very limited. For adaptation and mitigation policies to be effective, they need a robust and long-term funding scheme. Finally, climate action is a big opportunity for healthier and more prosperous societies in South America, taking the advantage of strategic climate policies to face the challenges of climate change and tackle existing social inequities.

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Introduction

Anthropogenic climate change is having significant impacts on South America (SA), leading to higher ambient temperatures, stronger storms, heavy precipitation events, and droughts, among others.¹⁻³ All these changes

affect various aspects of natural ecosystems and human systems in the region, including mosquito niches, crop production and agricultural practices, damage to critical infrastructure and livelihoods, and the health and wellbeing of populations.²

However, the impacts of climate change on populations differ between and within countries due to existing differential social vulnerabilities and capacities

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for response and adaptation, which are strongly tied to financial investments and political engagement.^{3,4} In particular, basic public health services in SA often prove insufficient for actual population needs,⁵ with political instability exacerbating these hurdles.⁶ Additionally, limited institutional capacity hampers the implementation of climate and health policies, increasing the risk of inadequate responses. Such factors and dynamics might negatively affect populations, including an escalating risk of poverty, induced displacement, and several negative outcomes related to physical and mental health.

The increasing evidence on climate hazards and impacts on populations and the information presented in this series constitute a strong call for advancing climate and health research and action in SA. Now, bold responses to climate change that consider a systemic perspective are urgently needed to take advantage of the health opportunities that climate action presents. If research, policy, and action are synergistically aligned, South American countries may promote population health and wellbeing by, for example, improving air quality, diets, and urban environments. Of course, these responses do not instantaneously occur. They are purposely thought and planned based on focused research on health impacts, adaptation policies that limit health risks, health-enhancing mitigation actions, supportive funding strategies, and robust public engagement.

Collectively, the papers in this series presented key gaps from five different perspectives of health and climate to understand better how we can continue strengthening this field in SA, and subsequently improve population health in a changing climate. This viewpoint summarises four main messages of the series.

The need for local analyses of priority topics to inform public policy

The reviews in this series consistently reported a need for more local analyses of health and climate change. Overall, the global evidence mostly includes information from high-income countries, especially from the northern hemisphere.⁷ This situation is challenging for low- and middle-income countries when it comes to informing public policy for two main reasons. Firstly, climate change impacts are usually very local due to the interactions between climate hazards and local vulnerabilities; therefore, global evidence cannot be directly applied, and local analyses should be done to comprehend potential impacts. Secondly, given the local impacts, the areas or topics on health and climate-relevant to public health policies are different depending on epidemiological, demographic, and social scenarios. In this sense, all the reviews agree on the need for more local analyses to inform public policy, especially for priority topics. The reviews on *i*) impacts on physical and mental health and *ii*) mitigation and health co-benefits showed limited

information for SA, with even important gaps between and within SA countries.^{8,9} Similarly, the review on health adaptation showed that Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs) mainly include international evidence to provide background information for planning these policies, potentially affecting the appropriateness and effectiveness of these policies at the local level.¹⁰

One could genuinely ask, why does all this information matter? Why do differential research capacities and available evidence in health and climate matter? All these questions matter because understanding what, who, where, when, why, and how is the base for strengthening responses and preparedness for climate change hazards and addressing relevant social vulnerabilities in SA. This statement is supported by the experience from the *I Congreso Internacional de Investigación en Cambio Climático y Salud* (I International Conference on Climate Change and Health Research) carried out in Peru this August 2023.¹¹ On this occasion, researchers, policy makers, and the civil society agreed that more local information is needed and that main policy-relevant topics to further explore are the relationship between climate change indigenous communities; the effects of land use change, tree cover loss, and glacier retreat on population health; the projections of marine productivity and food security, and forced displacement due to climate change.

Research in health and climate is done in silos and the intersection is not clear

As climate change imposes large, multiple, and cascading challenges for natural ecosystems and human systems, the approach for facing climate change challenges should be, ideally, transdisciplinary, or at least interdisciplinary. However, this series demonstrates that research and policies in health and climate are done in silos,¹² with little connection between disciplines and sectors, including the public and private sectors, civil society, communities, and particularly important indigenous communities.

For example, the group on adaptation found that current plans only target climate-related diseases, with a notable oversight regarding more distal health impacts such as food insecurity and malnutrition, mental health effects, and displacement due to the changing climate.¹⁰ Furthermore, sectors such as biodiversity, environment, education, energy, housing, and tourism inadequately integrate health perspectives into their policies, resulting in a slower adoption of an integrated approach.

In order to bridge the gaps and promote a transdisciplinary approach to research and action, comprehensive changes across society, encompassing public and policy engagement, are imperative. While we are seeing increased research in climate-related diseases, the scientific evidence quantifying the feasibility of

mitigation and adaptation strategies remains limited in most South American countries. Furthermore, health and climate public engagement often downplay health concerns. This trend may largely stem from the complexity of the problem, a lack of understanding and interconnection of different sectors, with a predominant focus on environmental issues rather than health. It is crucial to prioritise health and wellbeing at the core of an integral response, a goal achievable through a “Health in all Policies” approach.¹³ This approach is essential for a robust public health climate policy and increasing awareness about the urgency of the problem and the magnitude of the needed response. One interesting example of how countries in SA are working on strengthening the health and climate interface is developed by the readiness project called “Increasing health sector’s capacities and strengthening coordination on climate action in Argentina at national and subnational levels”. This project is one of the first in its kind, highlighting that more research and action capacities and engagement are needed from different actors, not only governmental actors, but academia, private sector, local communities, among others.¹⁴

Implementing climate adaptation and mitigation strategies, quantifying health co-benefits, comprehending economic impacts, and assessing costs for implementing these strategies for South American countries are crucial for advancing health and climate. Effective health impact planning requires measurable indicators, active sector engagement, and transparent funding mechanisms. This is achievable through comprehensive intersectoral and transdisciplinary databases and observatories. These resources can bridge health and other data, facilitating the development of climate-resilient health systems capable of adapting and responding to climate emergencies.

A climate response that puts health and wellbeing in the centre cannot succeed within a fragmented system and siloed mentality. Various stakeholders from academia, government, the private sector, civil society, and even those from marginalised communities must be able to interact and engage in discussions to bring about change.¹² Health-climate research is the starting point for grasping the complex climate challenges, but it is through transdisciplinary cooperation, and nurturing partnerships that meaningful change can be achieved.

Climate research, policies, and action need to be reflected in effective funding schemes

There are two main challenges when it comes to analysing funding schemes for health and climate, which can be divided by funding for research to expand local knowledge, funding for long-term and sustainable adaptation and mitigation policies, and funding for local climate action. However, in this section we consider a more general approach.

Firstly, South American countries have struggled to access and allocate general funding for climate adaptation and health co-benefits. As the Lancet Countdown South America report³ and the group on adaptation showed in this series, climate policies (NDCs and NAPs) reflect a misalignment between country’s strategies (or plans) and adequate funding for health and climate. Additionally, international funds for policies and actions focused on the health and climate nexus have been very limited in SA.¹⁵ These two situations undermine structural, long-term, and sustainable changes needed for effective progress in climate adaptation and mitigation, leaving countries and communities to short-term funding that may not reach desired sustainable outcomes in the long-term.

Secondly, funding for health and climate comes from different sources; however, we do not have specific and clear information that reflects these efforts to date. Most international funding, for research, policies, or action, is publicly available through dedicated portals; however, accessing to information on national investments (or budget allocation) is difficult and unclear. On one hand, public records of funding calls are usually not easily trackable, limiting the understanding of national efforts in this area. On the other hand, national budgets do not clearly specify the amount of money allocated for health and climate, and therefore, we do not know if the budget allocation comes from specific ministries or sectors, if the allocated money is integrally used for its purpose, or if there are re-allocations. From our interactions with policy makers from different countries, we know that South American countries are already making special efforts in investing in health and climate adaptation, but the extent of these efforts at the regional level is not clear due to data limitations. Just as we advocate—or demand—for transparency in international funding, it is equally crucial to ensure that national funds items for health and climate are publicly visible in order to enhance political engagement and accountability.

In summary, the importance of having robust funding schemes that are aligned with research, policies, and action relies on the issue presented by the group on economics of climate change, which highlighted that the impacts of climate change will be costly for South American countries,^{16,17} undermining the efforts and progress already done in terms of society development. In this sense, long-term and sustainable funding is critical for strengthening the progress on health and climate. This funding should be aligned with countries’ priorities and come from complementary and fair international and national sources, with a strong climate justice perspective. National budget allocation to health and climate needs to be independent of electoral political cycles and be seen as a national investment for the health and wellbeing of their current and future populations.

Climate action is a big opportunity for healthier and more prosperous societies in South America

Advancing climate action in SA is urgently needed to achieve the goals of the Paris Agreement, and, at the same time, it represents a substantial opportunity for healthier, more resilient, and prosperous societies. The evidence provided by this series highlights the substantial toll climate change has had on the health and wellbeing of populations across the region, and the main related gaps. The current effects extend to numerous human systems, aggravating potential adverse outcomes. Yet, the challenges climate change presents also unveil a landscape of possibilities.

As emphasised throughout this series, researching the health benefits of mitigation and adaptation policies across various sectors is essential for capitalising potential ways to enhance public health through climate action. If equipped with local research and empirical insights, South American countries could possess the means to shape robust adaptation and mitigation strategies.

Integral to this effort, and as exposed by the analysis done by the group on adaptation, is a deeper integration of health considerations within key policy documents that can steer climate action. These documents must embrace comprehensive evidence, indicators, government involvement, intersectoral collaboration, and sufficient funding allocation.¹⁰ A holistic and comprehensive approach to health and climate can guide South American societies towards improved living conditions for present and future generations, serving as a cornerstone for nurturing thriving societies amidst the evolving climate challenges.

Resonating with the findings of this series and central to climate action, is its contextualisation within a multisectoral framework founded with the pillars of climate justice and equity.¹⁸ Particularly vulnerable and economically disadvantaged groups of South American countries shoulder the heaviest burden of climate change's impacts. Ensuring their wellbeing requires the integration of climate justice within policy structures, anchored in understanding social determinants of health and the individual factors that underlie vulnerability.

As presented by the group focused on studying the economics of climate change, the prevalent influence of climate change on economic activities and labour markets has profound impacts on the informal sector. Given SA's distinction as holding one of the world's highest rates of labour informality,¹⁹ the imperative of mainstreaming climate justice into policy making entails a critical significance. This intersection between climate change and informality carries the potential for disruptions that can cascade across economies and societal structures. Ensuring that climate action is underpinned by justice and equity measures is a profound foundation

of a society's commitment to environmental wellbeing and the welfare of its most vulnerable members.

Lastly, enhanced education and a deeper comprehension of the subject matter is a key aspect underscored by the group on government and public engagement.¹² This extends to both political leaders and the general population as collective understanding advances the effectiveness of climate action. Ultimately, the endeavour to advance climate action in SA embodies both a pressing call and a source of hope. Guided by knowledge and innovation, this narrative can set a course towards a future where climate action, equity, and justice are not just in the promise of progress but a solid commitment to the wellbeing of all.

Conclusion

This series shows that SA has several challenges across five key domains in the intersection of health and climate change. On one hand, there is limited—and in some cases a lack of—basic information needed to track the impacts of climate hazards on population health, which makes decision-making and policy prioritisation very difficult. This gap in information and data consequently affects adaptation measures, which at the same time are also affected by other social, economic, and political factors. The overlapping social mediating factors in SA put the health and wellbeing of the populations at risk. Adequate public policies and finance mechanisms that maximise the benefits of mitigation and health co-benefits are needed across SA. Collaboration, good governance, and political will are necessary from the local to the regional level to further advance climate resilience and healthy societies.

Overall, this series shows that local evidence with a systemic perspective needs to be strengthened in SA. The Lancet Countdown South America, through its five working groups, seeks to provide evidence that goes from understanding main impacts of climate change on population health, in order to correctly inform adaptation and mitigation strategies, which will help optimise resource allocation and have clear communication and engagement. All this evidence is intended to support the region's public policies for future generations.

Contributors

All authors contributed to the overall paper structure and concepts and provided input and expertise to all sections. MYG, YPS, SH, and LBV conceptualized the viewpoint and participated in the drafting of the manuscript. Coordination, strategic direction, and editorial support were provided by MYG, SH and MR. DB and VPS performed critical revisions of the manuscript and contributed to the writing. All authors reviewed and agreed on the final version of the viewpoint.

Declaration of interests

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