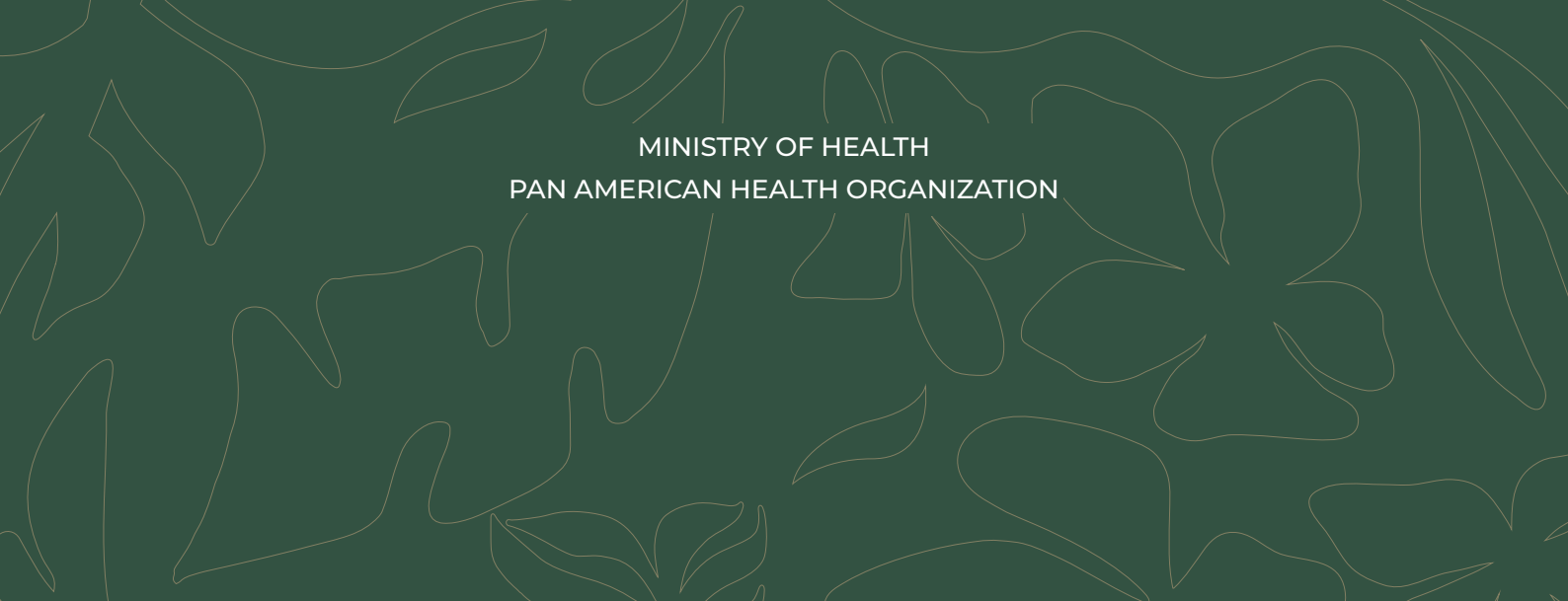




MINISTRY OF HEALTH
PAN AMERICAN HEALTH ORGANIZATION

SPECIAL REPORT ON SOCIAL PARTICIPATION IN HEALTH AND CLIMATE

SUPPORTING DOCUMENT FOR THE IMPLEMENTATION
OF THE BELÉM HEALTH ACTION PLAN

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2025 Ministry of Health.



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The process of developing the report included a total of three events at which academics, policymakers and activists were consulted on the overall framing and on potential case studies. The outline proposal for the report was initially presented in July 2025, during the 2025 Global Conference on Climate and Health, in Brasília, Brazil. Conference participants were invited to present comments and suggestions through a digital platform, and these were subsequently collected and used in the preparation of the report. Civil society experts and activists were invited to join two online consultation meetings, one of which was organised by ABRASCO for a Brazilian audience in September 2025 and one of which was organized by the WHO for an international audience in October 2025. We would like to thank all those who engaged so actively with the report's proposals in these different events, and who subsequently sent comments and suggested case studies.

These meetings generated considerable interest from practitioners in submitting successful case studies of social participation in key areas addressed by the Belém Health Action Plan. In response to this interest, the WHO Climate Change and Health team has committed to establishing a repository of cases. By the time of this report's publication, a total of 16 potential cases – covering experiences from Africa, Asia, South America, Europe and the US – had already been submitted. Having received additional expressions

of interest in submitting case studies, the WHO and MoH have agreed to keep the submission window open until April 2026, with a view to sharing the results at the 63rd Sessions of the Subsidiary Bodies of the United Nations Framework Convention on Climate Change (SB63) to take place in Bonn, Germany, in June 2026, ahead of COP31. The questionnaire used for submitting the cases can be found on the WHO public consultation page here: <https://www.who.int/news-room/events/detail/2025/10/16/default-calendar/public-consultation-on-the-cop30-special-report-on--social-participation>.

Acronyms

ABRASCO: Associação Brasileira de Saúde Coletiva (Brazilian Association of Collective Health)

AI: Artificial Intelligence

ATACH: Alliance for Transformative Action on Climate and Health

ATMs: Automated Teller Machine

BHAP: Belém Health Action Plan

CBNRM: Community-based Natural Resource Management

CCCs: Community Care Centres

CF88: Constituição Federal de 1988 (Brazilian Federal Constitution of 1988)

CHWs: Community-based health workers

CLEA: Community-Led Ebola Action

CLS: Conselho Local de Saúde (Local Health Council)

CLTS: Community-Led Total Sanitation

COP: Conference of the Parties

DSEI: Distrito Sanitário Especial Indígena (Special Indigenous Health District)

ELSA-BRASIL: Estudo Longitudinal de Saúde do Adulto (Brazilian Longitudinal Study of Adult Health)

GCF: Green Climate Fund

GHG: Greenhouse Gas

GM/MS: Gabinete do Ministro/Ministério da Saúde (Minister's Office, Ministry of Health)

IBGE: Instituto Brasileiro de Geografia e Estatística (Brazilian Institute of Geography and Statistics)

IDS: Institute of Development Studies

IEC: Information, education and communication

IPCC: Intergovernmental Panel on Climate Change

LGBTQI+/LGBTQIA+/LGBTQIAP+: Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual, Pansexual, and others

MIDP: Mukuru Integrated Development Plan

MoH: Brazilian Ministry of Health

NCC: Nairobi City Council

PHC: Primary Health Care

PCCU: Preventivo do Câncer do Colo do Útero (Cervical Cancer Screening)

PNSIPN: Política Nacional de Saúde Integral da População Negra (National Policy for the Comprehensive Health of the Black Population)

PSA: Projeto Saúde e Alegria (Health and Happiness Project)

PNASQ: Política Nacional de Saúde Quilombola (National Policy for Quilombola Health)

REDD+: Reducing emissions from deforestation and forest degradation in developing countries

SAFs: Sistemas Agroflorestais (Agroforestry Systems)

SAMU: Serviço de Atendimento Móvel de Urgência (Mobile Emergency Medical Service)

SDGs: Sustainable Development Goals

SDI: Slum Dwellers International

SPA: Special Planning Area

SUS: Sistema Único de Saúde (Brazilian Unified Health System)

UBS: Unidade Básica de Saúde (Basic Health Units)

UBSI: Unidade Básica de Saúde Indígena (Indigenous Basic Health Unit)

UNA-SUS: Universidade Aberta do Sistema Único de Saúde (Open University of the Brazilian Unified Health System)

UN Women: United Nations Entity for Gender Equality and the Empowerment of Women

UNFCCC: United Nations Framework Convention on Climate Change

WATSAN: Water and Sanitation

WHA: World Health Assembly

WHO: World Health Organization

WOF: World Obesity Federation

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Foreword

Addressing climate change is, above all, a commitment to life. Health is at the forefront of both the impacts and responses to the climate crisis, and the urgency to act requires identifying existing solutions that can be scaled up globally. Therefore, Brazil has reaffirmed its determination to promoting international cooperation to building sustainable, inclusive, inable, equitable, and science-based solutions.

The 30th Conference of the Parties (COP30) to the United Nations Framework Convention on Climate Change (UNFCCC) introduces an innovative approach by calling upon the international community to join in a global collective effort against climate change — a shared and supportive endeavour in defence of the common good and of life in all its forms. Inspired by the Brazilian native indigenous peoples' concept of “mutirão” (“Motirão” in Tupi-Guarani language), this effort embodies the spirit of cooperation that drives societies to face common challenges together.

In this sense, this Special Report on Social Participation in Health and Climate is produced by the Brazilian Association of Collective Health (ABRASCO, for its acronym in Portuguese) with the support of the Ministry of Health of Brazil, the World Health Organization (WHO) and the Pan American Health Organization (PAHO). It provides guidance to different approaches to strengthen governance on climate and health with social participation as a concrete expression of this collective effort. This is a strategic contribution to guide the implementation of the Belém Health Action Plan (BHAP), with emphasis on the promotion of equity, climate justice, and social participation.

Brazil reaffirms its role as a convener of integrated public policies, sustained by democratic dialogue, intersectoral cooperation, and the recognition of local knowledge, while also highlighting successful and innovative experiences from different parts of the world. We consider it fundamental to strengthen and utilize mechanisms for consultation, transparency, financing, and institutionalization of social participation, so that the communities most affected by inequalities and climate impacts can also be protagonists in building and implementing solutions that will shape a healthier and fairer future.

In presenting this report, the Ministry of Health also reaffirms that a just ecological transition and the protection of health require participatory governance and multilateral cooperation. This should be guided by active listening and shared management and, by strengthening health systems as key pillars to building resilient, sustainable, and equitable societies.

This collective effort seeks to inspire consistent and lasting action at all levels of governance and to broaden the engagement of civil society, the private sector, and the academic and philanthropic organizations in building resilient health systems and communities guided by the principles of equity and climate justice.

Ministry of Health.

Executive Summary

Climate change represents one of the greatest global crises of the 21st century, with profound impacts on human health and well-being, particularly among vulnerable populations. Extreme weather events, shifting disease patterns, and pressures on social and environmental determinants of health require health systems to adapt, ensuring resilience, equity, and climate justice. The convergence of environmental, social, and health challenges demands a systemic approach that integrates governance, intersectoral coordination, and community engagement.

Social participation is central to the design, implementation, and monitoring of climate-resilient health policies. Different forms of engagement – such as communication, consultation, collaboration, and co-ownership – enable individuals and communities to contribute with their local knowledge, lived experiences, and context-specific insights. Successful initiatives, such as the **Health and Happiness Project (Projeto Saúde e Alegria)** in the Brazilian Amazon and the **community-led urban planning in Mukuru, Nairobi**, demonstrate that participatory approaches lead to measurable improvements in public health, infrastructure, environmental sustainability, and social cohesion. When communities are empowered to co-produce adaptation strategies, interventions are more relevant, effective, and sustainable.

Historically marginalized populations – including women, Indigenous peoples, Afro-descendant communities (including Quilombolas, Brazilian traditional rural communities of African descent), residents of informal settlements, gender-diverse groups, people with disabilities and refugees – face disproportionate climate-related risks due to structural inequalities. Effective adaptation strategies must incorporate considerations of gender, race, class, and other social determinants, ensuring meaningful participation, recognition of territorial and cultural rights, and equitable access to resources and services. National policies – such as Brazil’s National Policy for Comprehensive Health of the Black Population (PNSIPN) and the development of the National Policy for Quilombola Health (PNASQ) – illustrate the importance of organized social mobilization in reducing disparities and promoting health equity.

Institutionalizing social participation within health systems, as exemplified by the Sistema Único de Saúde (SUS), the **Brazilian Unified Health System**, reinforces continuity, legitimacy, and accountability in policymaking. Mechanisms such as participatory councils, conferences, and deliberative forums allow communities to influence planning, implementation, and evaluation of health policies while fostering democratic governance. Embedding participation into institutional frameworks ensures that adaptation efforts are not merely symbolic but are sustained, inclusive, and transformative.

Key strategic recommendations to strengthen social participation in climate and health adaptation include:

- Investing in community-based preparedness and mobilization before crises occur.
- Building trust through continuous dialogue between communities, health authorities, and government institutions.
- Integrating co-design and co-implementation mechanisms into emergency and adaptation planning.
- Supporting community-led data collection and the development of inclusive governance structures.
- Negotiating planning and infrastructure standards that reflect local realities and social determinants of health.
- Monitoring inequalities and integrating equity analysis in decision-making processes.

In conclusion, social participation is not only a cornerstone of democratic governance but also a critical lever for climate-resilient, low-carbon, and equitable health systems. By empowering communities and integrating local knowledge with external technical expertise, health systems can enhance preparedness, mitigate climate-related health risks, and ensure that adaptation measures respond to both environmental and social determinants of health, ultimately promoting sustainable and inclusive resilience.

1. Introduction

The first scientific report on climate change and human health was published by the World Health Organization (WHO) in 1990, followed by successive assessments by the Intergovernmental Panel on Climate Change (IPCC) from the 1990s to the present (Franco Netto; Villardi, 2024). Despite this early recognition, the participation of the health sector in the Conferences of the Parties (COPs) remained limited for many years. Although representation from the health community has gradually increased, health issues have generally appeared in side events, rather than being incorporated into the main decision-making processes of the negotiations.

In Glasgow, at COP26 (2021), health gained greater visibility on the global climate agenda. The conference established the WHO Alliance for Transformative Action on Climate and Health (ATACH), signaling a stronger institutional commitment to the integration of climate and health.

At COP28 (2023) in Dubai, Health Day reinforced the recognition of health as an essential pillar of climate action. The Ministerial Declaration emphasized that “the climate issue is a health crisis” and that “health can drive awareness of the climate emergency”.

The health sector is now broadening its responsibilities beyond mitigation to include adaptation within its own operations. The WHO Global Strategy on Health (WHO 2025) and the continued work of ATACH demonstrate a more coordinated and structured global approach to aligning health systems with climate resilience.

The agenda for COP30 (2025) in Belém, Brazil, is focused on advancing financing strategies that promote a just transition and climate justice, supported by the Sustainable Development Goals (SDGs). Within this context, the Brazilian Ministry of Health (MoH) has developed the Belém Health Action Plan for the Adaptation of the Health Sector to Climate Change (BHAP), which aligns with national and global expectations for implementation-focused outcomes.

To support this process, the MoH and WHO commissioned a Special Report on Social Participation in Health and Climate. The report focuses on how to integrate health into the global climate agenda, highlighting the role of social participation in facilitating this process. It emphasizes leadership and governance on climate and health with social participation, grounded in the principles of health equity and the concept of climate justice. The document was developed collaboratively by the Ministry of Health of Brazil, Associação Brasileira de Saúde Coletiva (ABRASCO, Brazilian Association of Collective Health), the Institute of Development Studies (IDS) and the Brazilian women’s organization Criola.

The global evidence base on climate and health has grown rapidly, becoming increasingly interdisciplinary and cross-sectoral. A machine-learning analysis estimated that 15,963 studies on climate and health were published between 2013 and 2019 (Berrang-Ford et al., 2021). A more recent bibliometric study (Muhia et al., 2024) found that, despite this growth, 23% of journals had never published on the topic by 2022, and 73% had published five or fewer articles. Just ten journals — including BMJ, The Lancet, and The Lancet Planetary Health — accounted for nearly 46% of total publications, revealing a marked thematic and geographic concentration and underscoring persistent inequities in the dissemination of scientific knowledge.

Publication peaks in 2021 and 2022 were driven largely by joint editorials on climate and health released across more than 200 journals, illustrating the power of collaborative editorial initiatives to raise global visibility.

Global assessments consistently emphasise the health impacts of climate change and the co-benefits of mitigation, particularly regarding food systems, air pollution, and extreme weather events (Dasandi et al., 2022). However, further attention is required to address inequalities in health impacts, variations in health system capacity, and social participation in climate and environmental policy. Strengthening participation is critical for ensuring that adaptation measures respond to local realities and protect vulnerable populations.

This report was developed based on the integrative review method (Mendes, Silveira, & Galvão, 2008), allowing for the combination of theoretical and empirical studies of different types. The process involved six main stages: (1) defining the research question and search keywords; (2) establishing inclusion and exclusion criteria and sampling from the Scopus, MedLine, Lilacs, and Web of Science databases; (3) categorizing the information from the studies; (4) critically evaluating the results; (5) interpreting the findings; and (6) presenting the knowledge synthesis. The searches were conducted between September and October 2025, updating a 2023 review conducted by Roz Price and Tabitha Hrynck of the Institute of Development Studies (IDS) of work on climate and health published between 2015 and 2023 with a focus on the themes of *Climate and Health, Equity, Health System Adaptation* and *Social Participation*, and bringing in additional material published between 2023 and 2025 on *Approaches, Methodologies, and Strategies for Health Adaptation to Climate Change*.

For the final analysis—excluding documents with restricted access or unrelated to the topic—a total of 340 documents were reviewed, divided by subthemes: 7 documents on *Current Debates on Climate and Health*, 58 on *Climate and Health Equity* (with a focus on race and gender), 129 on *Health System Adaptation to Global Climate Change*, 45 on *Expanding the Participation of Marginalized Groups in Health Systems and Policies*, 47 on *Strengthening Participation for Accountable and Responsive Health*

Governance in Times of Crisis, and 33 on Institutionalizing Participation for Transformative Adaptation at Sectoral and Intersectoral Levels.

From the 2023–2025 analysis, the distribution was: 9 on *Dominant Approaches to Climate Change and Health*, 5 on *Top-Down Understandings and Approaches to Health Adaptation*, and 7 on *New Conceptual Frameworks and Thematic Gaps*.

While documented experiences of social participation in the climate and health nexus remain limited, this report draws on the available evidence and illustrative cases to support the implementation of the Belém Health Action Plan (BHAP) across all levels of governance. It aims to strengthen the integration of social participation into climate and health policies, contributing to equitable, resilient, and transformative adaptation pathways.

This report contributes to the debate on the importance of social participation in decision-making for public policies addressing health, environment, and climate crises. It is organized into nine sections: *Introduction; Climate, Health and Participation; Social Participation in Health Systems Adaptation: Concepts, Typologies and Cases; Enhancing the Participation of Marginalized Groups; Information, Knowledge and Participation; Participation and the Social Determinants Associated with Climate Change and Adaptation; Participation and Response to Health and Climate Emergencies; Institutionalizing Participation for Transformative Adaptation at Sectoral and Intersectoral Levels; and Moving Towards Transformative and Intersectoral Institutionalisation: challenges and opportunities*

2. Climate e Health

Climate change is one of the greatest global crises of the 21st century, with effects that go beyond environmental limits and impact multiple sectors of human and other species' lives. According to Vassari et al. (2022), climate change refers to variations in patterns of meteorological phenomena – such as precipitation, temperature, winds, and lightning – over relatively long periods. Emissions from fossil fuel combustion and aerosols are key drivers of global climate change, responsible for raising the global surface temperature, which between 2011 and 2020 was 1.1°C above the levels observed between 1850 and 1900 (IPCC, 2023).

Observed impacts include an increase in the global average temperature, melting of polar ice caps, rising sea levels, and a greater frequency and intensity of extreme weather events (Vassari et al., 2022). Causes include unsustainable energy use, environmental degradation, changes in production and consumption patterns, and lifestyles that prioritize wealth accumulation over environmental preservation (IPCC, 2023).

These impacts directly affect health, particularly among social groups in situations of vulnerability. Climate change intensifies extreme weather events, alters disease patterns, and increases pressure on the social and environmental determinants of health. Heatwaves, floods, droughts, and extreme events lead to sanitation crises, food insecurity, forced displacement, and mental health issues (WHO, 2023). Additionally, the destruction of urban infrastructure and public services amplifies negative health effects (Vassari et al., 2022).

The World Health Organization (WHO) highlights that rising temperatures exacerbate cardiovascular and respiratory diseases, worsen air pollution, and favour the transmission of arboviruses such as dengue, Zika, chikungunya and malaria. Extreme events also produce indirect effects, including disruptions in food systems, increased zoonoses, and social consequences from forced migration and conflicts.

2.1 Social Vulnerabilities and Inequalities

Historically marginalized populations — including Indigenous peoples, traditional communities such as Quilombolas (Brazilian traditional rural communities of African descent) and other rural and coastal populations — face disproportionate risks. The concept of environmental racism highlights how structural inequalities shape patterns of exposure and adaptive capacity (Peregum, 2023). In Brazil, people living in urban peripheries and riverine areas, and women — especially those affected by intersecting conditions of race/ethnicity and class — experience cumulative and synergistic impacts of climate crises. These arise from overlapping vulnerabilities and exposures, compounded

by limited resilience and access to resources, reflecting intertwined forms of historical, social, racial, spatial and gendered exclusion (Criola, 2025).

Climate crises also exacerbate nutritional and food security issues. The Global Syndemic of Obesity, Undernutrition, and Climate Change highlights the interaction among food systems, urbanization, transport, and natural resource exploitation, contributing to population ill health (Swinburn et al., 2019). In Brazil, 31% of adults are obese, projected to reach 55% by 2030, with unequal impacts across race, gender, and social class (WOF, 2025; ELSA-BRASIL, 2023).

Women in situations of social and economic vulnerability — particularly Afro-descendant and Indigenous women in Brazil and other contexts marked by structural racism (Werneck, 2016) — face multiple barriers to accessing healthy food, education, employment, and political participation, amplifying the effects of climate emergencies (ONU-MULHERES, 2024; IBGE, 2023).

2.2 Adapting Health Systems to Climate Change

Beyond managing the growing complexity of epidemiological challenges, health systems worldwide are increasingly confronted—both directly and indirectly—with the adverse impacts of a changing climate (Ebi et al., 2020).

According to the literature, efforts to adapt health systems to the global environmental crisis must focus on intersectoral analysis and action (Rychetnik, Sainsbury & Stewart, 2019; Zida et al., 2017). This requires recognizing the interconnections between health and environmental change through a systems-thinking approach. A crucial component of this interface is the relationship among governance, public policy, and social participation, which must be central to national debates and State-level decision-making (Lugten & Hariharan, 2022). Without legal and organizational provisions to make institutions and decision-making processes permeable to social participation that guarantees social participation in policymaking, adaptation strategies risk lacking legitimacy and feasibility.

Adaptation also depends on the health workforce. Health and education systems must prepare future professionals and provide continuing education for those already in service and for communities. This includes occupational protection during crises (including mental health), as well as training for surveillance and emergency response. Communities—often the first to experience the impacts of climate change—must be empowered through participatory training and awareness programs (Tsakonas et al., 2024; Wabnitz et al., 2021; Wheat et al., 2022).

Climate-induced forced migration is expected to place additional pressure on health systems, requiring adaptations not only in infrastructure and human capacity but also in cultural competence. Systems must be prepared to address the diverse languages, cultural backgrounds, perceptions, and health needs of people displaced by environmental crises (Climigration Network, 2021; Valéry et al., 2019).

The resurgence and emergence of infectious diseases, particularly vector-borne ones, represent another major challenge (Bardosh et al., 2017; Matlack et al., 2024). In climate crisis contexts, infectious, chronic, mental, and nutritional conditions often coexist within socially and environmentally stressed populations, creating syndemic situations that are difficult and costly to manage. Effective adaptation in such settings will require greater financial investment and social participation (Eaton et al., 2022; Thompson et al., 2023; Borghi et al., 2024; Zida et al., 2017).

At the same time, the health sector itself contributes to climate change through waste generation and greenhouse gas emissions, an issue still insufficiently addressed by most countries (Pratt, 2022; Sherman et al., 2023).

Despite growing literature and promising experiences—particularly since 2000—evidence indicates that most national health systems remain unprepared to cope with the impacts of climate change (Opoku et al., 2021; Rivas, David & Clark, 2019; Sambath et al., 2022; Sithole et al., 2021). Persistent gaps include:

- Lack of policies and technologies.
- Limited investment and financing capacity, particularly in low- and middle-income countries.
- Weak infrastructure and insufficient workforce training.
- Poor intersectoral coordination.
- Data scarcity; and
- Low prioritization of health within national adaptation plans (Ansah et al., 2024).

It is in response to this context that the Belém Health Action Plan (BHAP) has been developed, with specific recommendations organised according to three Action Lines (Surveillance and Monitoring, Evidence-based Policies, Strategies, and Capacity-building, and Innovation, Production and Digital Health) guided by the two cross-cutting principles of *Health Equity and the concept of Climate Justice* and *Governance with Social Participation*.

In addition to the specific recommendations contained in the BHAP, the incorporation of these cross-cutting principles and the concept of climate justice can make a potentially transformative contribution to enhancing the social legitimacy and effectiveness of the operational framework that the WHO has developed for guiding responses to the dual challenges of strengthening health systems' resilience and reducing their carbon-intensity and greenhouse gas emissions building upon earlier initiatives launched in 2007 (WHO, 2007) and consolidated in the 2023 operational framework (WHO, 2023) (Figure 1).



Figure 1. Operational Framework for Building Climate Resilient and Low Carbon Health Systems (WHO 2023)

While the BHAP and WHO Operational Framework provide comprehensive guidance for decision-makers seeking to secure greater resilience for their health systems and mitigate their climate impact, the literature emphasizes that effective adaptation demands systemic and cross-sectoral approaches, supported by strong governance, strategic financing, community engagement, robust legislation, and integration with sectors such as energy, agriculture, and urban planning (Mosadeghrad et al., 2023).

As Figure 2 illustrates, this will require health systems to look not only inwards to their own adaptation and mitigation strategies, but also outwards. This outward movement needs to operate in two directions: towards other policy sectors, through enhanced cross-sectoral dialogue and coordination, and towards society itself, through enhanced social participation.



Figure 2. Locating health system adaptation in relation to social participation and intersectoral policy coordination (authors' elaboration)

This report therefore argues that strong intersectoral coordination through strategies such as Health in All Policies (WHO 2023) is an essential complement to adaptation measures driven from within the health system, such as those set out in the BHAP. Above all, it argues that strengthening social participation should be a key priority, because of the need to build synergies with the adaptation initiatives that are already under way in society (at the individual, household and community levels) and ensure that the effort to develop climate resilient and low carbon health systems also contributes effectively to tackling the social and environmental determinants of ill-health and climate vulnerability.

Although knowledge of climate impacts on health systems is advancing, research on adaptive responses, intervention effectiveness, health outcomes, equity promotion, and participatory governance remains limited (Scheelbeek et al., 2021). There is a particular need for local and context-specific case studies to guide policymaking and implementation.

In summary, adapting health systems to climate change is a complex, multi-dimensional challenge. Progress depends on more applied research, robust impact assessments, stronger links between health, social, and climate policies, and expanded evidence on the effectiveness of adaptation strategies—especially in vulnerable contexts (Ansah et al., 2024; Mosadeghrad et al., 2023).

2.3 Climate, Health and Governance: Social Participation and Democratic Governance

The academic literature on the institutionalisation of social participation is expanding, particularly in the fields of public health and environmental governance. However, it remains underexplored in relation to health systems resilience and adaptation to climate change. Social engagement is essential for designing and implementing effective public policies; however, participation is not an end in itself. It must be contextually grounded and operationally supported to function effectively.

While there is growing evidence of normative and legal advances in creating democratic governance mechanisms, persistent challenges remain regarding their effectiveness, legitimacy, and sustainability, particularly in the face of the increasing demands of the global environmental crisis. Institutionalisation has been identified as a key condition for achieving good governance and social development—especially in low- and middle-income countries and during systemic crises (Haghighi & Takian, 2024).

This is of critical importance because in the current context of increasing political polarisation and declining levels of public trust – including in specific interventions such as vaccines as well as in the broader scientific structure of biomedicine and even in relation to health workers themselves – the effectiveness of health systems can be severely undermined by a failure to establish social participation mechanisms that are sufficiently legitimate, inclusive and binding.

This was recognised by the recent World Health Assembly resolution on *Social Participation for Universal Health Coverage, Health and Well-Being*, which not only highlighted the longstanding emphasis on community participation and empowerment as part of the primary health care approach but also expressed concern at “the erosion of trust, particularly during the COVID-19 pandemic, as well as the negative impacts of health-related misinformation, disinformation, hate speech and stigmatization, on multiple media platforms, on people’s physical and mental health” (WHO, 2024a).

One key strategy for strengthening participatory governance is participatory monitoring, integrating indicators of vulnerability, resilience, and equity into surveillance and planning routines (Speranza et al., 2017). This transforms civil society into an active agent of verification and collective learning, promoting accountability and transparency in public management.

The principle of equity in the context of climate change impacts demands recognition of historical inequalities and the inclusion of race, gender, and class perspectives – among others – in the design and implementation of public policies. Women and communities affected by intersecting social, racial and racism, and economic vulnerabilities – including Indigenous Peoples and traditional communities – must have meaningful participation in

decisions, ensuring that climate responses respect local knowledges and practices while promoting social justice.

3. Social Participation in Health System Adaptation: Concepts, Typologies and Cases

In this report, we follow the Belém Health Action Plan (BHAP) in using the term ‘Social Participation’ as an inclusive descriptor for both direct and mediated participation by individuals and groups. The WHO Handbook on Social Participation for Universal Health Coverage (WHO, 2024b) explains that in this term “the prefix ‘social’ alludes to individuals, populations, and communities but can also be associated with civil society”, and that ‘Social Participation’ is used in preference to ‘Engagement’ because in the latter it is government that is “actively doing the ‘engaging’ to ensure that people ‘participate’” (Rajan et al. 2021).

For more than half a century, theorists and practitioners have recognised that not all forms of social participation are equal, and that a key factor in differentiating them is the degree of agency and ownership over the process that is exercised by governments and citizens respectively. Building on the pioneering work of Sherry Arnstein (1969), many authors have developed tools such as ‘participation ladders’ to differentiate between more top-down engagement or superficial forms of outreach and broader, deeper and more empowering social participation.

In this report, we draw on this literature to recommend differentiating between communication, consultation, collaboration and co-ownership as forms of social participation.

Communication is an essential element of social participation, but it usually originates with health system actors and seeks to ensure that the populations they serve are adequately informed and willing to comply with the behavioural and other recommendations of medical and climate science.

Consultation is a form of social participation that is commonly used to generate data on public preferences and perceptions and improve the design of interventions. However, it does not usually involve joint implementation or health system actors making a binding commitment to abide by the results of the consultation.

Collaboration is a more actively engaged form of social participation that often involves health system actors and civil society or community groups planning and implementing activities together but does not usually involve a strong form of downwards accountability or social oversight.

Co-Ownership is a stronger form of social participation within which activities are not only carried out together by health system, civil society and community actors, but also

designed and prioritised jointly, as part of binding agreements to which those involved can hold each other mutually accountable.

In this report we also emphasize the importance of recognising *self-organisation* as a form of participation – one that is initiated by communities, social groups and civil society organisations rather than by health system or government actors. The effectiveness of adaptation strategies will depend on health systems' ability to identify, respond to and support initiatives originating from the societies within which they are embedded – and to harness the situated knowledges, solidarity networks and forms of social energy that are already being dedicated to tackling the complex challenges intensified by climate change.

The precise nature of the activities will vary in relation not only to the form of social participation that is involved but also to the specific aspect of health system adaptation and resilience on which each activity focuses.

The table below presents some examples of the activities that might form part of action in the different areas of the WHO Operational Framework, according to the different forms of social participation that they might involve.

Table 1. Examples of different types of social participation in relation to the WHO Operational Framework

Building Block	Framework Area	Communication	Consultation	Collaboration	Co-Ownership	Self-Organisation
Leadership & Governance	<i>Climate-Transformative Leadership and Governance</i>	Culturally accessible communication strategies	Public hearings, citizen assemblies and other deliberative processes	Joint messaging by community leaders and health system managers	Mutual accountability through social oversight structures	Civil society advocacy for adaptation
Health Workforce	<i>Climate-smart Health Workforce</i>	Specific messaging for PHC workforce and front-line paraprofessionals	Dialogue with professional bodies on climate-smart workforce strategies	Co-design of training resources with health professionals	Health worker / community joint scorecards for monitoring of adaptation	Health professionals' networks for adaptation knowledge sharing
Health Information Systems	<i>Assessments of Climate and Health Risks and GHG Emissions</i>	Transparent communication of data from assessments	Perception surveys to identify levels of understanding of risks	Data collection by CHWs and other community-based paraprofessionals	Co-produced territory-level climate and health risk assessments	Community-led environmental hazard assessments
	<i>Integrated Risk Monitoring, early Warning and GHG Emissions Tracking</i>	Health System GHG emissions tracking data disclosure	Consultation on early warning system design	Joint identification of priority risks for monitoring	Participatory risk monitoring processes	Indigenous and traditional knowledge-based early warning systems
	<i>Health and Climate Research</i>	Open access publishing of health and climate research findings	Public hearings on policy responses to health and climate research findings	Stakeholder engagement in research priority-setting	Community co-researchers acknowledged as team members / co-authors	Citizen science-based research on climate-health intersections

Building Block	Framework Area	Communication	Consultation	Collaboration	Co-Ownership	Self-Organisation
Essential Medical Products & Technologies	<i>Climate Resilient and Low-Carbon Infrastructures, Technologies and Supply Chains</i>	Transparent procurement processes	Public hearings on AI-based adaptation data collection and protection strategies	Co-design of resilient infrastructures and technologies	Inclusion of community-managed infrastructure in adaptation plans	Adaptation processes led by indigenous and traditional knowledge-holders
Service Delivery	<i>Management of Environmental Determinants of Health</i>	IEC activities focusing on (socio-) environmental risks	Surveys to locate areas with elevated risk of extreme heat exposure	Participatory management of WATSAN infrastructure	Community-Led Total Sanitation (CLTS)	Community-based urban upgrading (self-build)
	<i>Climate-Informed Health Programmes</i>	Communication around changing seasonal patterns of vector prevalence	Surveys to identify seasonal accessibility challenges	Community / health system collaboration on vector control	Co-management of local health service delivery	Seasonal mobility strategies
	<i>Climate-related Emergency Preparedness and Management</i>	Publicly accessible early warning systems	Preparedness surveys	Co-design of climate-resilient health infrastructure	Community-based disaster relief services	Social networks to support emergency mobility
Financing	<i>Sustainable Climate & Health Financing</i>	Health and climate budget transparency	Opinion surveys of public climate finance allocation preferences	Participatory budgeting processes for allocation of adaptation resources	Community contributions in kind to adaptation of health infrastructure	Community-financed adaptation measures

Source: Authors' elaboration

4. Information, Knowledge and Participation

RECOMMENDATIONS

- **Identify barriers to the full and equitable participation of all sectors of society**—placing special emphasis on groups in situations of vulnerability—in decision-making processes and climate action initiatives.
 - **Document and analyse successful experiences in promoting social participation**, such as those established in Brazil through the Unified Health System (SUS), including advisory councils on public policies, conferences, public consultations and hearings, participatory budgeting, as well as referendums and popular legislative initiatives.
 - **Produce and disseminate accessible, high-quality information on climate emergencies and their health impacts, to support informed decision-making.**
-

The complexity of the ways in which climate change affects both the resilience of health systems and the well-being of individuals and communities means that timely access to accurate and actionable information is a key requirement for effective adaptation.

Social participation plays a key role in ensuring that information can flow to health system decision-makers from a variety of collection points, including front-line Community Health Workers and local monitoring committees. It can make an even more important contribution to ensuring the robustness of the information at decision-makers' disposal, by triangulating health system information and climate monitoring data with the context-specific observation and Indigenous, traditional and local knowledge that can ensure that it is locally relevant and actionable. This can be strengthened still further by commissioning participatory research, and also by ensuring that decision-makers have access to the evidence generated by citizen science initiatives (Nascimento, 2007).

Information flows from the health system to communities are also an essential element of successful adaptation. Transparency measures can help to build trust in government decisions, for example around resource allocation. Given the rapid spread of access to connectivity for online communication even in remote areas, digital technology can help to ensure that individuals and communities have access to relevant data on climate risks, including those generated by early warning systems (Noal et al., 2016).

Another key element for successful promotion of social participation in health and climate adaptation is the adoption of effective popular communication strategies.

The Belém Health Action Plan (BHAP) emphasises the need to “develop and support initiatives and public education campaigns on climate change and health adaptation at local, regional, and national levels, tailored to diverse audiences, with face-to-face and digital formats, and sensitive to cultural and territorial specificities as appropriate” (BHAP Section 2.7.1)

Successful strategies need to combine appropriate use of technology and information outreach with creative and culturally appropriate participatory communication methods, such as the circus-based approach used by the Health and Happiness Project (PSA) in the Brazilian Amazon.

Case Study: Projeto Saúde e Alegria - PSA (The Health and Happiness Project)

The Health and Happiness Project, founded in 1991 in Santarém, Pará, Brazil, by brothers Eugênio and Caetano Scanavino, originated from a critical need identified by Dr. Eugênio: to promote health and quality of life for Amazonian riverside communities using innovative methods like the Gran Circo Mocarongo social technology.

These riverside populations are highly vulnerable due to their reliance on natural resources and historical socioeconomic struggles. The initiative was conceived by the brothers, a group of health professionals, and volunteers concerned about poor living conditions, limited access to health services, and high rates of waterborne diseases in remote Amazon areas.

Since its founding, the PSA has focused on implementing health, education, and sustainable development actions. It seeks to strengthen the autonomy of local communities and influence public policies that support the sustainability of riverside, Indigenous, and Quilombola populations, with a special focus on women and the youth. The Project currently spans nine municipalities in Western Pará, in the Brazilian Amazon, reaching over 15,000 people.

PSA's work is rooted in active listening to the population's needs. Together with the communities, they plan and promote access to health services, environmental education, and professional training. The Project also works to preserve local culture, value traditions, and respect Amazonian biodiversity.

Over the years, the PSA has expanded to include sustainable tourism and income generation, emphasizing sustainability and social inclusion. Their work is mainly focused on six strategic areas:

- Health in the Forest
- Community Infrastructure
- Education, Culture and Communication
- Forest Economy
- Support to Community and Territorial Management

- Social Mobilization, Advocacy, and Dissemination

Supported by public and private partnerships, State and municipal health secretariats, universities, local volunteers, and national/international donors, the PSA has become a "laboratory of good practices" for health and environmental social technologies.

Main Achievements and Impacts

The PSA's actions combine health education, promotion, prevention, and care with adapted technologies like UBS Fluviais (Unidades Básicas de Saúde Fluviais, or Riverborne Basic Health Units) telehealth, solar energy, and water treatment. These efforts also include environmental health and the social protection of local communities through women's empowerment and public engagement.

The Project has profoundly impacted rural communities, leading to improvements in health, education, quality of life, environmental sustainability, and income. Key results include the reduction of infectious diseases and the promotion of preventive health practices, resulting in a more aware and healthier population.

Educational and professional training has created new income-generating opportunities for women and youth, helping communities become more self-sufficient through the sustainable use of natural resources. By valuing traditions, the project has also strengthened local cultural identity and environmental preservation. Thus, the PSA has not only improved physical health but also boosted self-esteem and hope, fostering greater social cohesion and improving the implementation of public policies across various sectors (health, infrastructure, economy, education, food security) for thousands of families in a large region of the Amazon basin.

Public Policy and Health Achievements

1. The Riverine Family Health Strategy

This strategy began as an experiment with a single boat in 2005. By 2010, it inspired the federal "Riverine Family Health" policy, which has since incorporated this social technology into the SUS (Brazilian Unified Health System). It currently involves nearly 100 vessels equipped with multidisciplinary teams across the Amazon and Pantanal. The strategy promotes public health access, strengthens the SUS presence, and fosters the well-being of riverine populations by providing:

- Consultations, vaccines, and basic care
- Laboratory exams and medical-surgical campaigns
- Health education, medical residency, and research
- Preventive actions and citizenship education
- With a notable 93% resolution rate.

Numerous riverside communities, following the implementation of social technology-based health education programs, have dramatically reduced cases of infectious diseases like malaria, dengue, and intestinal parasites. Families have adopted preventive practices

(e.g., using mosquito nets, water filtering), leading to significant long-term epidemiological improvements.

2. Forest Basic Health Units

These are local, community-based installations that expand healthcare access in the Amazon's most isolated areas by enhancing existing UBS and UBSI (Unidade Básica de Saúde Indígena, Indigenous Basic Health Unit). The project delivers essential infrastructure: solar energy, internet connectivity, basic health equipment, training, and technical support. It focuses on primary care actions such as antenatal care, cervical cancer screening, hypertension and diabetes control, vaccination coverage, and telehealth.

Twenty-four units are being implemented in partnership with six municipalities and the Ministry of Health (MoH) in Pará through a multisectoral approach, providing clean, stable energy and adequate health infrastructure for timely, quality care.

Community and Social Participation Achievements

3. Popular Communication and Social Oversight

PSA creates popular health communication materials using simple language anchored in local culture and knowledge. This horizontal process for disseminating preventive actions is carried out by a Network of Popular Health Educators and Communicators. They distribute materials, including via social media and mobile messaging. This participatory process — supported by workshops, meetings, and Health Councils — strengthens local health commissions and community involvement in the Social Oversight of the SUS.

4. Gran Circo Mocarongo

The Gran Circo Mocarongo uses popular language, music, theatre, and circus arts to discuss health, environment, rights, and citizenship, reinforcing local identity and leadership. It combines artistic and pedagogical methods in itinerant performances along the rivers, led by local artists and educators. The caravans translate complex themes into accessible, fun messages, mobilizing thousands of people around topics like disease prevention, women's rights, and environmental protection. It is a living movement for social transformation through art and learning.

5. Youth in the Forest

This movement unites communication, art, culture, and social mobilization to amplify the voices of the Amazon's new generations. The program uses educommunication to create spaces for critical expression, creativity, and collective action, promoting youth engagement in debates on climate, territory, and rights, as well as digital inclusion.

Through training in audiovisual production, community radio, digital media, and environmental journalism, Indigenous, Quilombola, riverside, and urban youths become communicators for their territories. The methodology includes in-person workshops,

mentorships, and cultural exchanges, connecting participants with climate activism and political advocacy networks.

Environmental Achievements

6. Forest Economy and Sustainable Practices

PSA is involved in sustainable environmental practices, such as the development of agroforestry systems through training and partnerships with women. This promotes food security, income generation, and environmental conservation, creating sustainable alternatives for resilience to climate change while valuing traditional knowledge.

The project also offers workshops that train women to produce bio-jewellery and local-specific handicrafts. This not only generates income and self-esteem but also strengthens solidarity and contributes to the local economy and environmental sustainability.

7. Community and Territorial Management

The Project provides strong support for community and territorial management, empowering communities to sustainably use natural resources and ensure the protection and secure the future of their territories. This methodology reinforces land tenure and environmental planning and generates community geographic databases used to guide public policies. These actions have expanded the capacity for management, monitoring, and political advocacy among Indigenous peoples, Quilombolas, riverine communities and family farmers, securing greater autonomy and rights to their lands.

Long Term Impacts

These successes show that the PSA not only improves physical health but also promotes social, economic, and political empowerment. The long-term effects include: a significant reduction in infectious diseases; increased life expectancy; greater economic autonomy through creation of small businesses based on sustainable natural resources use; creation of public health policies, digital inclusion, and the integration of health and hygiene awareness into local culture. This valorisation of cultural identity and traditions promotes a stronger sense of belonging and pride, making the communities more resilient to future challenges, including those posed by climate change.

Success Factors

Several factors contributed to the success of the PSA including strong social engagement and participation since its inception, the availability to become a laboratory of good practices, creation and use of local Social Technologies, positive interaction with the local, state and federal government, self-sustainability through partnership with public and private sectors, among others.

Advice for Replication

Each initiative is based on the local needs, demands, political and social situation of the region and country involved. However, it is well established that listening to the stakeholders and the communities and requesting their participation at all levels of

decision making from the very beginning are key elements for the success of any community project.

More information about the Health and Happiness Project is available from the [project website](#).

5. Enhancing the Participation of Marginalised Groups

RECOMMENDATIONS

- **Promote participation** by creating, supporting, and maintaining **formal and informal spaces for social engagement**, ensuring that these spaces are effectively integrated into institutional processes and that **non-hierarchical links** are established in the **implementation of decisions**.
 - **Establish participatory mechanisms** for the **design and implementation** of policies, initiatives, and actions at all stages—particularly in **prevention, response, and recovery phases of environmental and climate-related disasters**.
 - **Foster exchange and cooperation** among **States and Civil Society organizations** to **share best practices and successful experiences** in the fields of **Health and Climate Action**.
-

According to studies conducted by UN Women (2023), approximately 10% of women live in extreme poverty. Under the most severe climate scenario, by 2050, an additional 158.3 million women and girls worldwide are expected to fall into extreme poverty if climate justice actions are not effectively implemented. The integration of gender and gender identity into climate change discussions is critical, as gender inequalities intersect with health, social, economic, and environmental vulnerabilities, exacerbating the effects of climate change on specific groups.

The effects of climate change disproportionately affect women, girls, and gender-diverse people for several reasons. Limited access to technology and literacy increases the risk of harm during disasters, as barriers often prevent timely access to life-saving information. Unequal access to income and resources restricts the capacity to adapt livelihoods and recover from damages to infrastructure and public services. Unpaid care responsibilities, which disproportionately fall on women, limit their time and opportunities for participation in economic and political activities. Rising levels of gender-based violence have been associated with environmental stress and resource scarcity. School dropout rates among girls increase in drought-affected areas, reflecting gendered impacts on education. Women, girls, and gender-diverse populations also face barriers to accessing health and social services, exposing them to greater risks during climate emergencies.

In drought-prone regions of Brazil, women, girls, and gender-diverse people are often the first to experience the effects of water scarcity. They are typically responsible for collecting water over long distances, which can compromise educational

performance and increase exposure to harassment and sexual violence. These conditions reinforce the gendered dimensions of climate emergencies and create barriers to information access and decision-making participation. Groups such as Afrodescendent and Indigenous women, as well as transgender individuals and other sexual minorities, face even more severe challenges due to overlapping forms of discrimination, including racism, sexism, and LGBTIQ+phobia. The cultural association of women with caregiving roles further limits their participation in community and policy-level decision spaces, which are often dominated by men.

Data from the IBGE (Instituto Brasileiro de Geografia e Estatística, Brazilian Institute of Geography and Statistics) report *Gender Statistics: Social Indicators of Women in Brazil* (2023) highlight persistent structural inequalities. Women have a higher average educational attainment than men, but their earnings remain lower. The female labour force participation rate is 54%, compared to 74% for men. Women dedicate 21.4 hours per week to domestic and care activities—twice as much as men, who spend 11.0 hours. When disaggregated by race or colour, Black women spend two more hours per week on unpaid care work than white women. These indicators demonstrate that income, education, and political participation are key factors influencing women's capacity to respond to and recover from climate-related impacts (IBGE, 2023).

Given these inequalities, women face multiple barriers that limit their ability to access technology and early warning systems, secure financial and institutional support for recovery after disasters such as floods or landslides, avoid or escape situations of domestic and gender-based violence, and influence decision-making processes in climate governance. These vulnerabilities are expected to intensify as climate change progresses, deepening existing gender and social inequities.

To promote climate justice with a gender perspective, it is essential to identify and monitor gender-specific health and safety risks associated with climate change; remove barriers that hinder equitable access to health and social services; develop policies, action plans, and emergency protocols that incorporate gender and intersectional perspectives; strengthen the representation of women and gender-diverse people in decision-making spaces at all levels; and promote capacity-building programs that integrate gender equality and environmental sustainability. The provision of quality and equitable services, aligned with local knowledge and women-led solutions, can establish fairer and more resilient responses to climate-related crises.

A study conducted in Namibia sought to understand the participation of women in environmental and health movements within the context of the Green Climate Fund (GCF), an international financial mechanism that funds initiatives promoting sustainable and climate-resilient development. The research involved interviews and group discussions with participants from Community-Based Natural Resource Management organizations across the country. The results indicated that the persistence of patriarchal

norms continues to inhibit the meaningful participation of women in decision-making processes. Furthermore, female participation in community natural resource management activities beyond the domestic and local community spheres is often limited or non-existent, reflecting structural barriers that still restrict their full involvement in environmental governance and access to the benefits of climate programs (Angula et al., 2021).

Another study provides the example of Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+) projects carried out in India and Nepal, which aimed to ensure the equal presence of women and men in decision-making processes. In these instances, women had little influence on decisions and were not heard. The research highlights that gender quotas, although intended to promote balance, do not always produce universal positive effects. They often fail to account for intersectionality, such as race and social class, and tend to benefit women in comparatively more privileged positions (Van Daalen et al., 2024).

The examples of these initiatives demonstrate the challenges faced by women regarding social participation in health and environmental decision-making processes and underscore the importance of implementing the Belém Health Action Plan (BHAP) and Sustainable Development Goal 5 (SDG 5), which aims to “achieve gender equality and empower all women and girls.”

The Belém Health Action Plan (BHAP) emphasizes the need to “Promote Adaptation Policies to Support Populations in Situations of Vulnerability,” citing social status, race, and ethnicity as key variables to consider. It also highlights the importance of “gender-responsive and child- and adolescent-responsive approaches” and of ensuring “accessible and continuous care for persons with disabilities” within adaptation and emergency response efforts (BHAP Section 2.4).

Case Study: Política Nacional de Saúde Integral da População Negra - PNSIPN (National Policy for the Comprehensive Health of the Black Population)

In Brazil, the implementation of the National Policy for the Comprehensive Health of the Black Population (PNSIPN) aimed at promoting the comprehensive health of the Black population by prioritizing the reduction of ethnic-racial inequalities and combating racism and discrimination within the institutions and services of the Unified Health System (SUS).

The formulation, approval, and implementation of the PNSIPN were driven by Black movements and Black women’s movements, in coordination with other sectors. The Policy was approved by the National Health Council in 2006 and later endorsed by the Tripartite Commission, composed of representatives from the federal government,

state health secretaries, and municipal health secretaries. It was formally established through Ministerial Ordinance GM/MS No. 992 of 2009 (BRASIL, 2009).

Health service users receive relevant information through instructional materials, scientific publications, and educational booklets. Also, in-person and online mobilization events promote the Black Population's Health, particularly around October 27th – the National Day of Mobilization for the Health of the Black Population.

The Policy seeks to combat racism and health inequalities affecting the Black population. The main political actors are: Black people, non-governmental organizations, representatives of Black and Black women's movements, religious organizations of African origin, and LGBTQIAP+ groups.

These groups contributed by:

- (a) Conducting studies and research to provide scientific evidence on the impact of racism as a determinant of morbidity and mortality among the Black population;
- (b) Engaging in dialogue with health sectors and social movements to promote recognition of racial inequalities as a social determinant of health;
- (c) Mobilizing civil society to establish October 27th as the *National Day of Mobilization for the Health of the Black Population*;
- (d) Participating in the Technical Committee on the Health of the Black Population, at municipal, state, and federal levels, established by the Ministry of Health and State Health Secretariats, composed of civil society organizations, research institutions, and managers;
- (e) Participating in health councils at the municipal, state, and federal levels.

Main policy achievements

In 2009, the National Policy for the Comprehensive Health of the Black Population (PNSIPN) was officially established.

In 2010, the Statute of Racial Equality was enacted, and its Article 6 addresses the health of the Black population.

The PNSIPN also influenced health policies directed at other groups, including riverine populations, LGBTQIAP+ people, fishers, and extractivist communities (Water, Forests, and LGBTQIAP+ policies).

More recently, in 2023, the National Policy for Quilombola Health (PNASQ) was approved at the National Health Conference, and supported for implementation by the MoH in 2024 (Brasil, 2025).

Success factors

The creation of the Policy initiated within Black social movements and Black women's movements. It comprises a plethora of different forms of political actions: self-organized, co-participation or collaboration with the Ministry of Health, United Nations agencies, and other civil society organizations.

Mobilization led by Black organizations and Black women's movements was fundamental to the creation and implementation of the PNSIPN.

Advice for replication

It is recommended to promote broad dialogue and participation throughout the process of design, implementation, and monitoring.

There should be effective integration among the sectors involved in seeking solutions. Research and data collection should be expanded to provide stronger evidence for health policy decision-makers.

Civil society organizations and social movements should be incorporated into decision-making spaces, with guaranteed funding for participation.

More information about the PNSIPN is available from
https://bvsms.saude.gov.br/bvs/publicacoes/politica_nacional_saude_populacao_negra_3d.pdf

6. Participation, Adaptation and Social Determinants

RECOMMENDATIONS

- Promote community-led data collection: Engage residents in mapping, surveys, and risk assessments to generate context-specific, granular data, empowering communities as co-producers of knowledge.
 - Build inclusive governance structures: Establish multi-level committees and forums that include the relevant political actors ensuring participation, co-ownership, and accountability in decision-making.
 - Negotiate planning standards that reflect local realities: Adapt territorial planning regulations to balance technical requirements with social and economic realities, enabling climate-resilient infrastructure without displacing communities.
 - Ground climate adaptation in the social determinants of health: Integrate housing, sanitation, livelihoods, and safety into adaptation planning to enhance public health, equity, and long-term resilience.
-

As noted above, climate change exacerbates many of the inequities that drive vulnerability and ill-health. Some of the most vulnerable groups are those classified by the UNFCCC (United Nations Framework Convention on Climate Change) as “Local Communities and Indigenous Peoples”, whose territories are key to the resilience of food systems and to safeguarding the water resources and biodiversity needed for adaptation as well as the carbon sinks that are essential for mitigation (UNFCCC, 2024). Even though they protect large areas of some of the world’s most critical biomes and can offer a rich reserve of traditional knowledge to guide adaptation processes, their rights are often violated and their status as guardians of these territories often goes unrecognised.

The Belém Health Action Plan (BHAP) emphasises the need to “strengthen adaptation measures that safeguard food security, water access, and territorial rights of Indigenous Peoples and traditional communities, recognizing these as fundamental determinants of health in the face of climate change” (BHAP Section 2.4.5).

Environmental determinants of health such as exposure to extreme heat or contaminated water sources intersect with social determinants such as inequity in access to adequate housing or sanitation services. This intersection is particularly visible in informal urban settlements, which in a rapidly urbanising world are a key frontier for health and climate adaptation strategies that tackle the social as well as the environmental determinants of ill-health and vulnerability (Corburn et al., 2022). Although they are frequently

stigmatised as unruly and crime-ridden, these settlements often have strong social networks and pre-existing informal systems of welfare and care for the most vulnerable, as well as dynamic local leaders and organisations who can drive successful bottom-up adaptation processes.

Case Study: Locally Led Urban Planning for Climate Resilience and Health Equity in Mukuru, Nairobi

In Nairobi's Mukuru informal settlement, a groundbreaking initiative unfolded which demonstrated how climate adaptation can be pursued through inclusive, locally led planning (Global Center on Adaptation, 2022). The Mukuru Special Planning Area (SPA), declared by the Nairobi City Council (NCC) in 2017, emerged from years of community organizing, legal advocacy and action research. It represents a pioneering effort to address the intertwined challenges of climate vulnerability, poor health outcomes, and structural inequalities in one of Africa's largest informal settlements.

Mukuru is home to over 400,000 residents, the vast majority of whom are tenants living on privately held land near Nairobi's central business district. The settlement is marked by tenancy insecurity, environmental fragility, inadequate infrastructure, and political marginalization—conditions that amplify the health impacts of climate hazards such as flooding, heat stress, and waterborne disease. As social, health, and environmental vulnerability all intersect, action on the social determinants of health is required to address climate risks. The SPA designation provided a legal and institutional framework for multisectoral urban upgrading, enabling residents, civil society, the private sector, and academia to partner with the Nairobi City County to co-design a comprehensive development plan.

At the heart of the Mukuru SPA process was a commitment to social participation. The Muungano Alliance (comprising Muungano wa Wanavijiji, Akiba Mashinani Trust, and SDI Kenya) mobilized over 450 community members, primarily women and youth, to serve as data collectors, mobilizers, and facilitators. These residents conducted extensive mapping, profiling, and self-enumeration exercises, generating granular data on housing, health, sanitation, education, and environmental risks. This community-led evidence base was critical in shaping the Mukuru Integrated Development Plan (MIDP), which prioritized infrastructure improvements that directly addressed the social determinants of health.

The links between climate and health were made explicit throughout the process. Residents identified recurrent flooding as a major hazard, with direct consequences for disease transmission, mental health, and economic insecurity. The absence of a road network with drainage exacerbated flood risks and hindered access to emergency services and healthcare. In response, the planning consortia—organized around key sectors such as housing, water and sanitation, health, and education—worked with

residents to design infrastructure upgrades that would reduce exposure to climate hazards while enhancing public health. For example, the installation of simplified sewer systems and water ATMs (pre-paid dispensers) reduced cholera outbreaks and improved hygiene.

The participatory nature of the SPA process extended beyond consultation to genuine co-ownership. Residents were central actors in planning, decision-making, and implementation. Households were organized into cells, clusters, and segments, ensuring representation and accountability at every level. Community forums provided spaces for deliberation, negotiation, and validation of plans, fostering a sense of collective agency and political empowerment. Over 5,000 residents took part in the planning process and contributed to an Integrated Development Plan and sector-specific plans to be implemented by residents, the government, and the private sector.

The approach challenged conventional planning standards that would have required mass displacement to accommodate formal infrastructure. Instead, alternative standards were negotiated—for example, adapting statutory road width requirements—allowing for the construction of essential infrastructure with minimal disruption to residents’ homes and livelihoods. These standards prioritized non-motorized transport, street trade, public health, and environmental risk mitigation, reflecting the lived realities and aspirations of Mukuru’s residents.

Main Achievements and Impacts

The achievements of the Mukuru SPA are wide-ranging. Infrastructure upgrades have reduced flooding, improved access to clean water and sanitation, and expanded healthcare and education services. The process has also strengthened community cohesion, built local leadership, and enhanced the legitimacy of climate and health interventions. Notably, the initiative demonstrated that informal settlement residents are willing and able to pay for quality services, debunking myths about affordability and sustainability. Research revealed that Mukuru residents paid up to 170% more for inferior services than those in formal neighbourhoods—an illustration of the “poverty penalty” the SPA sought to address.

Success Factors

Several factors contributed to the success of the Mukuru SPA:

- The strategic use of Kenya’s constitutional provisions to provide a legal framework.
- The timing of the initiative around national elections, leveraging political opportunity to push for SPA adoption and implementation.

- The depth of community organizing based on long-term advocacy and engagement.
- The formation of interdisciplinary consortia that bridged government, civil society, and academia.

The SPA model has since inspired similar efforts in the large Nairobi informal settlements of Kibera and Mathare, suggesting its potential for replication. Other cities—such as Freetown in Sierra Leone—are now building on the Mukuru example and designing their own SPA processes.

Advice for Replication

For other cities seeking to replicate this approach, the Mukuru experience offers clear guidance:

- Start with community-led data collection.
- Build inclusive governance structures.
- Negotiate planning standards that reflect local realities.
- Ensure that climate adaptation efforts are grounded in the social determinants of health.

Above all, the process was based on a recognition that climate resilience goes beyond infrastructure and is rooted in dignity, equity, and the power of people to shape their own futures.

More information about social participation in the Mukuru SPA is available from the project website hosted by [Muungano wa Wanavijiji](#).

7. Participation and Response to Health and Climate Emergencies

RECOMMENDATIONS

- Invest in community-based preparedness and mobilisation before crises occur. Strengthen local capacity by training and equipping residents, building early warning networks, and promoting awareness of health and climate risks. Proactive engagement ensures communities can respond quickly, safely, and effectively when emergencies strike.
- Build trust through ongoing dialogue in health and governance systems: Establish continuous communication channels between communities, health authorities, and local governments. Transparent information-sharing, consultation, and participation foster trust, enhance compliance with public health measures, and create a foundation for collaborative problem-solving during crises.
- Ensure that emergency planning includes mechanisms for co-design and co-implementation. Integrate community voices directly into emergency plans, allowing residents to help shape priorities, resources, and interventions. Shared responsibility improves relevance, ownership, and effectiveness, ensuring that emergency responses are equitable, context-sensitive, and sustainable.

Extreme weather events such as cyclones, hurricanes floods and droughts are generating increasingly severe impacts throughout the world, though communities in the Global South tend to feel these impacts more intensely because of their greater levels of pre-existing vulnerability and more precarious infrastructure. The emphasis on localisation of humanitarian response that has gained momentum since the 2016 World Humanitarian Summit in Istanbul is an important entry point for strengthening social participation in tackling these impacts.

Health systems responding to such emergencies often face the temptation to ignore opportunities for social participation in the face of pressure to get things done quickly, but ensuring that local knowledge-holders such as community leaders and front-line health workers are at the centre of the response is key in avoiding waste and ensuring that the most vulnerable are not missed, as well as identifying existing forms of care and solidarity that could be strengthened rather than substituted for by externally-driven provision (WHO, 2023).

The Belém Health Action Plan (BHAP) emphasises the need to “Promote flexibility in administrative, regulatory, and procurement processes to enable rapid and effective emergency response actions, guided by ethical protocols that uphold transparency and strengthen social accountability” (BHAP section 1.3.3).

Increasingly, disease outbreaks are a major frontier for climate adaptation. Rising temperatures, changing rainfall patterns and ecosystem disruptions are expected to alter the distribution and frequency of zoonotic diseases and pandemics. Although it has not been conclusively linked to climate change, the major Ebola outbreak that occurred in West Africa between 2013 and 2015 is a potential source of insights into the types of threat that are likely to grow in importance as climate change reshapes the conditions for disease emergence. Learning the lessons from Ebola - especially regarding community engagement - is vital for building shock responsive and epidemic resilient health systems.

Case Study: Community Participation in the West African Ebola Response

The 2013–2015 West African Ebola outbreak was the largest and most complex in history, affecting over 28,000 people across Guinea, Liberia, and Sierra Leone. Initially marked by widespread fear, mistrust, and resistance to control efforts, the outbreak was eventually brought under control through a shift in strategy; one that placed communities at the centre of the response. This case study describes how different forms of social participation contributed to the containment of Ebola and offers insights into how such approaches can inform climate adaptation strategies, particularly in the face of increased emergence of infectious disease linked to climate change.

In the early stages of the Ebola outbreak, response efforts were largely top-down. International agencies and national governments focused on biomedical containment strategies, often without adequate consultation with affected communities. This led to widespread resistance. In some areas, burial teams were attacked, mistrust (of health workers, government and aid workers) was widespread, and rumours flourished. Although these fears and resistance were initially characterised as irrational, and based on ignorance, they were not; they reflected deep-seated historical grievances, political marginalisation, compounded by poor healthcare and contextually inappropriate response strategies. The failure to engage with communities meaningfully – and the basis of their fears - undermined the effectiveness of the response and allowed the virus to spread.

A turning point came when responders began to adopt more participatory approaches. On the advice of community engagement experts and social scientists, strategies began to shift from “correcting misinformation” to co-developing solutions with communities. Participation took multiple forms along the ladder of engagement. Strategies included the creation of Community-Led Ebola Action (CLEA) programmes, which empowered communities to analyse their own risks and take locally appropriate action. These

initiatives drew on participatory tools and built on models like Community-Led Total Sanitation (CLTS), fostering collective ownership of the response. There were instances of collaboration, for example the design of Community Care Centres (CCCs), which provided localised treatment and isolation facilities, employed local members of the community. Staffed by familiar faces, these centres were more acceptable than distant Ebola Treatment Units and allowed families to maintain contact with sick relatives, reducing fear and stigma. In other instances, communities devised their own independent approaches, for example instigating bylaws and community surveillance systems to identify cases and enforce quarantine. These strategies were most successful when they were adequately supported and resourced by the Ebola response infrastructure. For example, local burial teams were formed – to allow people to be buried closer to home and in a ‘safe and dignified’ manner - but these were often not adequately resourced which limited their success.

Main Achievements and Impacts

These participatory approaches were not only more effective in halting transmission but also helped rebuild trust between communities and health authorities. They demonstrated that communities are not passive recipients of assistance but active agents in crisis response.

Success Factors

The Ebola experience underscores that effective emergency responses require deep engagement with local knowledge, values, and institutions, in ways which go beyond technical considerations. As climate change increases the likelihood of health emergencies, from heatwaves to vector-borne diseases and pandemics, the lessons from Ebola offer a blueprint for inclusive, adaptive, and socially grounded responses.

Advice for Replication

For replication, it is essential to invest in community-based preparedness and mobilisation before crises occur, build trust through ongoing dialogue in health and governance systems, and ensure that emergency planning includes mechanisms for co-design and co-implementation.

More information about social participation in the West African Ebola response is available on the [Ebola Response Anthropology Platform](#).

8. Institutionalisation of Participation for Transformative Adaptation at the Sectoral and Intersectoral Levels

RECOMMENDATIONS

- Ensure that the selection process for representatives in social participation spaces is transparent and democratic, and that their mandates have term limits.
- Provide legal coverage and resources to support representation activities.
- The social representatives should have political legitimacy, which derive from legal, traditional or community agreement. A routine for reviewing formal or informal mandates can enhance representativeness.
- The representatives must have access to training in the skills that are required when taking part in government planning and decision-making processes. This can use a variety of different methodologies, depending on the complexity of the activities involved and the level of engagement of the participants.

At all levels of governance, institutionalisation serves as a critical mechanism to enhance the effectiveness, reach, visibility and democratic legitimacy of social participation and policy implementation. It can consolidate long-term processes, promote accountability, and strengthen the governance foundations necessary for transformative adaptation (Rahbari Bonab, Majdzadeh & Rajabi, 2023).

The Belém Health Action Plan (BHAP) emphasises the need to “support community health strategies with accessible financing and sustained engagement with primary health care to ensure continuous participation in program design, implementation, and evaluation” (BHAP section 2.7.3).

Case Study: Institutionalised Participation in the Brazilian Health System

The Brazilian Unified Health System (SUS) was established by the CF88 (Constituição Federal de 1988, Federal Constitution of 1988) (Brasil, 1988) and regulated by Laws 8080 and 8142 of 1990 (Brasil, 1990). It is one of the largest, most comprehensive, and complex public health systems in the world. The SUS provides universal, comprehensive, and equitable coverage for the entire Brazilian population (203,062,512 people. IBGE, 2022), including those in transit or migratory situations, anywhere in the national territory. Its

services range from routine medical consultations and examinations at the country's 48,000 Basic Health Units (UBS) to highly specialized procedures such as organ and tissue transplants (approximately 30,000 in 2024), all offered free of charge to users.

Each year, the SUS carries out around 4 billion procedures, including the administration of vaccines (300 million doses of 30 types), immunobiologicals (47 types), and serums (13 types). It also provides emergency and urgent care, including ambulance services through the SAMU (Serviço de Atendimento Móvel de Urgência, Mobile Emergency Medical Service), as well as cancer diagnosis and treatment, drug evaluation and distribution, and water quality monitoring, covering all 5,570 municipalities in Brazil. Approximately 75% of Brazilians rely exclusively on the SUS for all their healthcare needs (Jardim, 2025). The system employs around 3.5 million staff, including doctors, nurses, dentists, physical therapists, nutritionists, health assistants, and Community Health Agents, all of whom receive continuous training through ongoing education programs, including courses offered via the virtual platform UNA-SUS (Universidade Aberta do Sistema Único de Saúde, Open University of the Unified Health System).

The management of the SUS is shared among municipalities, states, and the federal government (known as the tripartite system), and it is highly participatory. Citizen engagement occurs through various collegiate bodies, such as the Municipal, State, and National Health Councils, which are parity-based with 50% of their elected positions drawn from delegates representing health service users, while the remainder represent service providers, government officials and health professionals. These councils meet regularly to formulate strategies, monitor and evaluate health policy implementation.

Beyond these permanent collegiate bodies, social oversight is exercised through health conferences (Rolim; Cruz; Sampaio, 2013), held every four years at municipal, state, and national levels, and through Free Conferences organized by specific social groups (e.g., Black populations, Indigenous peoples, Quilombolas, LGBTQI+ communities). In 2023, 106 Free Health Conferences were held to help define the system's priorities for the following four years. Conferences mobilize millions of participants—including staff, managers, and users—who elect delegates to represent their proposals at state conferences. State conferences, in turn, select delegates and proposals for debate and approval at the National Health Conference. The 17th National Health Conference in 2023 brought together approximately 4,000 delegates.

Operational management is further supported by the Inter-Managerial Bipartite Commission (Municipalities and States) and the Inter-Managerial Tripartite Commission (Municipalities, States, and Federal Government). Additionally, Regional and District Councils, including the Councils for the 34 DSEIs (Distritos Sanitários Especiais Indígenas, Special Indigenous Health Districts) and the CLS (Conselhos Locais de Saúde, Local Health Councils) are deliberative bodies that operate at various levels to propose, discuss, monitor, evaluate and oversee the implementation of health policies, including

financial and operational aspects, down to the facility level. Governments are legally required to guarantee administrative autonomy for councils through budget allocation, financial independence, and the provision of necessary infrastructure. All council members serve on a voluntary basis.

Main Achievements and Impacts

In Brazil, social participation is an organizational principle of the SUS, established in Law 8142 and the CF88, recognizing the importance of public involvement in the formulation, evaluation, and monitoring of health policies. This participation includes oversight of government actions and the consideration of regional specificities. The principle ensures that all citizens—including historically excluded social actors—can participate in and influence the definition and implementation of health policy (Pires, 2011).

Success Factors

Social participation lies at the root of the design and implementation of the SUS. Social movements played a fundamental role in the creation of the SUS by defending health as a universal right and duty of the State, fighting for re-democratization and health reform. Popular participation was crucial in breaking with the previous model of exclusionary health and consolidating the foundations of the system at the VIII National Health Conference in 1986 (Participedia, s.d.), which culminated in the guarantee of the right to health for all in the 1988 Constitution.

The main contributions of social movements were the struggle for a new health model, the defence of health as a right and mobilisation for large-scale participation in the VIII Health Conference of 1986, which defined the principles and guidelines for the creation of the SUS, support for democratization, promotion of social oversight, and strengthening the SUS, connecting the demands of the population with policymakers (Cornwall and Shankland, 2008).

Advice for Replication

The Brazilian Unified Health System (SUS) illustrates both progress and persistent challenges. Important normative advances—such as the establishment of participatory councils at municipal, state, and national levels, as well as online consultations and national health conferences—have significantly expanded participatory democracy and multisectoral collaboration (Kohler; Martinez, 2015). However, structural limitations remain, including persistent power imbalances between technical and local knowledge, fragile institutional continuity, insufficient financial and political resources, privatization, and the risk of proceduralism.

To adapt to climate change, this participatory framework should be expanded through:

1. Permanent consultation mechanisms—dialogue channels with councils, territorial forums and community collectives.
2. Public hearings—ensuring transparency in decisions on projects, investments, and budgets.
3. Deliberative seminars—hybrid spaces that translate technical evidence into socially legitimate recommendations.
4. Participatory leadership circles—training and coordinating local leaders in contexts of climate vulnerability.

These mechanisms can ensure that social participation is not merely symbolic but a structural dimension of public policy, integrating technical knowledge, governance, and socio-environmental justice.

More information about social participation in the SUS is available from <https://pensesus.fiocruz.br/participa%C3%A7%C3%A3o-social>

9. Moving Towards Transformative and Intersectoral Institutionalisation: challenges and opportunities

When properly implemented, institutionalised participation fosters continuity and policy stability, reducing dependency on individual leadership and protecting policy processes from political turnover (Khatri, Assefa & Durham, 2023). It provides the legal and financial grounding necessary to confer legitimacy and permanence to participatory mechanisms, as observed in successful experiences of older adults' participation in policy design in Europe (Falanga et al., 2021). Moreover, institutionalised participation enhances transparency and accountability, as demonstrated by digital consultation platforms in China that have broadened access to governmental decision-making (Balla & Xie, 2021).

Institutionalisation of participation reinforces democratic governance over the long term. For example, in Kenya, the proposed creation of an *Office of Public Participation Rapporteur* aims to ensure that public input is meaningfully incorporated into government decision-making, preventing participation from becoming a merely symbolic or consultative exercise (Hao, Nyaranga & Hongo, 2022).

Nevertheless, despite its promise, institutionalisation presents significant challenges. In many settings, particularly where public health systems are weak or political and social instability persists, participatory structures remain fragile. Without strong state commitment, participatory mechanisms can become unstable or co-opted by political interests (Rahbari Bonab et al., 2024). Their effectiveness depends on broader conditions of justice, human rights, transparency, accountability and the rule of law (Haghighi & Takian, 2024).

A major risk lies in the formalization of participation without substance—where processes become procedural rituals that validate pre-existing decisions rather than shaping them. This can lead to tokenism and ritualism, undermining trust and reducing impact (Grote, 2024; Rahbari Bonab et al., 2024).

Additionally, achieving transformative institutionalisation requires legitimate authority and stable financial resources. The relationship between the deliberative or consultative nature of participation and its actual impact remains complex, as the institutional rhetoric of participation often diverges from the realities and needs of citizens (Santos, Batel & Gonçalves, 2018).

When participation involves representing a broader social group, the selection process must be democratic, transparent, and safeguarded against capture by political elites (governors, mayors, municipal secretaries etc), which could otherwise undermine the integrity and effectiveness of the social participation model.

Institutional participation mechanisms also face challenges related to power asymmetries between knowledge systems. Technical-scientific and Western knowledge is often privileged over local, traditional, and community-based knowledge, which are critical to adaptive responses. In some cases, institutionalisation becomes subordinate to external or supranational agendas, making local participation contingent on international projects and funding (Rahman & Ley, 2020).

The relationship between institutionalisation and social movements is also complex. While engagement with formal institutions can risk diluting the critical stance of grassroots movements, it can also mark a strategic shift toward propositional engagement, enhancing the effectiveness of collective action and contributing to policy quality (Paixão, 2022).

There is an urgent need for systematic evaluations of how institutional participation frameworks affect different social groups, particularly in relation to gender, race, ethnicity, age, environment and socioeconomic status. Many participatory processes are documented descriptively but lack critical assessment of their effectiveness or actual policy impact. Research is also needed on scaling up successful local experiences without compromising legitimacy or representativeness, and on how models of “policy transfer” can be adapted to diverse contexts (Mokhtar & Rahman, 2020).

Institutionalisation of social participation is a double-edged process: it can strengthen participatory democracy and policy continuity, but it can also reproduce inequalities or lose transformative potential if reduced to bureaucratic formality. To serve a strategic role amidst converging global crises, institutionalised social participation must evolve from sectoral and procedural to cross-cutting and transformative implementation.

References

- ANGULA, Margaret Ndapewa *et al.* Strengthening gender responsiveness of the green climate fund ecosystem-based adaptation programme in Namibia. **Sustainability (Switzerland)**, 2021.
- ANSAH, Edward Wilson *et al.* Health systems response to climate change adaptation: a scoping review of global evidence. **BMC Public Health**, 2024.
- ARNSTEIN, Sherry. A Ladder of Citizen Participation. **Journal of the American Institute of Planners**, v. 35, n. 4, p. 216–224, jul. 1969.
- BALLA, Steven J.; XIE, Zhoudan. Online Consultation and the Institutionalization of Transparency and Participation in Chinese Policymaking. **China Quarterly**, 2021.
- BARDOSH, Kevin Louis *et al.* Addressing vulnerability, building resilience: community-based adaptation to vector-borne diseases in the context of global change. **Infectious Diseases of Poverty**, v. 6, 11 Dec. 2017.
- BERRANG-FORD, Lea *et al.* Systematic mapping of global research on climate and health: a machine learning review. **The Lancet Planetary Health**, v. 5, n. 8, p. e514–e525, 1 Aug. 2021.
- BORGHI, Josephine *et al.* Climate and health: a path to strategic co-financing? **Health Policy and Planning**, v. 39, n. 2, p. i4–i18, 18 Nov. 2024.
- BRASIL. Constituição (1988). **Constituição da República Federativa do Brasil**. Brasília: Senado Federal, 1988.
- BRASIL. Lei nº 8.080, de 19 de setembro de 1990. Dispõe sobre as condições para a promoção, proteção e recuperação da saúde, a organização e o funcionamento dos serviços correspondentes e dá outras providências. **Diário Oficial da União: seção 1**, Brasília, DF, 20 Sept. 1990.
- BRASIL. Lei nº 8.142, de 28 de dezembro de 1990. Dispõe sobre a participação da comunidade na gestão do Sistema Único de Saúde e sobre as transferências intergovernamentais de recursos financeiros na área da saúde e dá outras providências. **Diário Oficial da União: seção 1**, Brasília, DF, 31 Dec. 1990.
- BRASIL. Ministério da Saúde. **Política Nacional de Saúde Integral da População Negra: uma política para o SUS**. 3. ed. Brasília: Ministério da Saúde, 2017.
https://bvsmis.saude.gov.br/bvs/publicacoes/politica_nacional_saude_populacao_negra_3d.pdf. Accessed 2 Nov. 2025.
- BRASIL. Ministério da Saúde. **Política Nacional de Saúde Integral da População Quilombola – PNASQ**. Brasília: Ministério da Saúde, 2025. <https://www.gov.br/participamaisbrasil/saude-quilombola-pnasq>. Accessed 2 Nov. 2025.
- BRASIL. Ministério da Saúde. Portaria n. 992, de 13 de maio de 2009. Institui a Política Nacional de Saúde Integral da População Negra (PNSIPN). **Diário Oficial da União: seção 1**, Brasília, DF, 14 maio 2009. https://bvsmis.saude.gov.br/bvs/saudelegis/gm/2009/prt0992_13_05_2009.html. Accessed 2 Nov. 2025.

CLIMIGRATION NETWORK. **Lead with listening: a guidebook for community conversations on climate migration**. [S.l.]: Climigration Network, 2021. <https://www.climigration.org/guidebook>. Accessed 2 Nov. 2025.

CORNWALL, A. and A. SHANKLAND Engaging Citizens: Lessons from building Brazil's national health system. **Social Science and Medicine** vol. 66 no. 10, 2008

CORBURN, Jason *et al.* Urban Climate Justice, Human Health, and Citizen Science in Nairobi's Informal Settlements. **Urban Science**, v. 6, n. 2, p. 36, jun. 2022.

CRIOLA. **Dossiê violações e violências contra mulheres negras**. Rio de Janeiro: Criola, 2025. 77 p. <https://criola.org.br/dossie-violacoes-e-violencias-contra-mulheres-negras/>. Accessed 2 Nov. 2025.

DASANDI, Niheer *et al.* The inclusion of health in major global reports on climate change and biodiversity. **BMJ Global Health**, v. 7, n. 6, p. e008731, jun. 2022.

EATON, Julian *et al.* Addressing Mental Health and Wellbeing in the Context of Climate Change: Examples of Interventions to Inform Future Practice. **Intervention - International Journal of Mental Health Psychosocial Work and Counselling in Areas of Armed Conflict**, v. 20, n. 1, p. 107–113, jun. 2022.

EBI, Kristie L. *et al.* **Extreme Weather and Climate Change: Population Health and Health System Implications. Annual Review of Public Health**, 2020.

EBOLA RESPONSE ANTHROPOLOGY PLATFORM. **Communication and Engagement**. [s.l.]: Institute of Development Studies (IDS), s.d. <https://archive.ids.ac.uk/erap/theme/communication-and-engagement/>. Accessed 2 Nov. 2025.

ELSA-BRASIL. **Boletim do Dia da Consciência Negra. Negros adoecem mais pelas principais doenças crônicas e adversidades ao longo da vida explicam uma parte desse adoecimento**. 2023. <https://elsabrasil.org/boletim-do-dia-da-consciencia-negra/> acesso 24 Sept. 2025

FALANGA, Roberto *et al.* The participation of senior citizens in policy-making: Patterning initiatives in Europe. **International Journal of Environmental Research and Public Health**, 2021.

FRANCO NETTO, Guilherme; VILLARDI, Juliana Wotzasek Rulli. **Ambiente, saúde, sustentabilidade: fundamentos, bases científicas e práticas**. [S.l.]: Editora FIOCRUZ, 2024.

GLOBAL CENTER ON ADAPTATION. **Locally Led Planning: A Guide for Building Climate Resilience in Urban Informal Settlements**. Rotterdam: GCA, 2022. https://cmsllahub.gca.org/assets/gca-toolkit-book_web.pdf. Accessed 2 Nov. 2025.

GROTE, Katie M. Indigenous peoples and the power(lessness) of public participation: Assessing effects of Indigenous community input in the Alaskan Coastal Plain oil and gas leasing program environmental impact statement. **Environmental Science and Policy**, 2024.

HAGHIGHI, Hajar; TAKIAN, Amirhossein. Institutionalization for good governance to reach sustainable health development: a framework analysis. **Globalization and Health**, 2024.

HAO, Chen; NYARANGA, Maurice Simiyu; HONGO, Duncan O. **Enhancing Public Participation in Governance for Sustainable Development: Evidence From Bungoma County, Kenya**. **SAGE Open**, 2022.

IBGE. Estatísticas de Gênero indicadores sociais das mulheres no Brasil. 2ª edição. **Estudos e Pesquisas. Informação demográfica e socioeconômica**. n. 38. 2023. https://biblioteca.ibge.gov.br/visualizacao/livros/liv101784_informativo.pdf; Acesso 24 Sept. 2025.

INSTITUTO DE REFERÊNCIA NEGRA PEREGUM (org.). Racismo ambiental e emergências climáticas no Brasil. São Paulo: Instituto de Referência Negra Peregum; Oralituras Editora, 2023. 164 p.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (IBGE). **Censo Demográfico 2022: população e domicílios**. Rio de Janeiro: IBGE, 2022. <https://biblioteca.ibge.gov.br/index.php/biblioteca-catalogo?view=detalhes&id=2102011>. Accessed 20 ago, 2025.

IPCC. Summary for Policymakers. In: **Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change** [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, 2023.

JARDIM, Lauro. SUS é única opção de atendimento para 75 % dos brasileiros. **O Globo**, 28 out. 2025. <https://oglobo.globo.com/blogs/lauro-jardim/post/2025/10/sus-e-unica-opcao-de-atendimento-para-75percent-dos-brasileiros.ghtml>. Accessed 2 Nov. 2025.

KHATRI, Resham Bahadur; ASSEFA, Yibeltal Alemu; DURHAM, Jo. Multidomain and multilevel strategies to improve equity in maternal and newborn health services in Nepal: perspectives of health managers and policymakers. **International Journal for Equity in Health**, 2023.

KOHLER, J. C.; MARTINEZ, M. G. Participatory health councils and good governance: healthy democracy in Brazil? **International Journal for Equity in Health**, [S. l.], v. 14, n. 21, 2015.

LUGTEN, Elizabeth; HARIHARAN, Neetu. Strengthening Health Systems for Climate Adaptation and Health Security: Key Considerations for Policy and Programming. **Health Security**, 2022.

MATLACK, Meghan *et al.* A scoping review of current climate change and vector-borne disease literacy and implications for public health interventions. **Journal of Climate Change and Health**, 2024.

MENDES, Karina Dal Sasso; SILVEIRA, Renata Cristina de Campos Pereira; GALVÃO, Cristina Maria. Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. **Texto & Contexto - Enfermagem**, v. 17, p. 758–764, 2008.

MOKHTAR, Khairiah Salwa; RAHMAN, Nurulhasanah Abdul. Understanding the Concept of Policy Transfer: A Systematic Literature Review Approach. **International Journal of Politics, Public Policy and Social Work**, v. 2, n. 5, 2020.

MOSADEGHRAD, Ali Mohammad *et al.* Strategies to strengthen a climate-resilient health system: a scoping review. **Globalization and Health**, 2023.

MUHIA, Joy *et al.* Health journal coverage of climate change and health: a bibliometric study. **BMJ Global Health**, v. 9, n. 2, p. e014498, Feb. 2024.

MUUNGANO WA WANAVIJJI. **Mukuru SPA – Mukuru Special Planning Area**. [S.l.]: Muungano wa Wanavijiji, 2020. <https://www.muungano.net/mukuru-spa>. Accessed 2 Nov. 2025.

NASCIMENTO, L.H.P. **A participação comunitária na gestão de riscos e prevenção de desastres**. Monografia da especialização para obtenção do título de Especialista em Estratégias em Segurança Pública. Universidade Federal do Paraná. Curitiba, 2007.

NOAL, D. S.; OLIVEIRA, S. S.; ALPINO, T. M. A.; ROCHA, V. **Gestão local de desastres naturais para a atenção básica**. [S. l.]: USP, 2016. <https://arca.fiocruz.br/handle/icict/37492>. Accessed 30 Sept. 2025.

ONU-MULHERES. **Visão geral - Justiça Climática Feminista: uma marca para ação**. 2024. <https://www.unwomen.org/sites/default/files/2024-10/feminist-climate-justice-a-framework-for-action-overview-pt.pdf> Accessed: 25 Sept. 2025

OPOKU, Samuel Kwasi *et al.* Climate change and health preparedness in africa: Analysing trends in six african countries. **International Journal of Environmental Research and Public Health**, 2021.

PAIXÃO, Lara. **Moradia e saúde: direitos interconectados na percepção de moradores de ocupações urbanas na capital paulista**. PhD thesis, University of São Paulo, 2022.

PARTICIPEDIA. **Brazilian Conferences on Health**. <https://participedia.net/case/brazilian-conferences-on-health>. Accessed 02 Nov. 2025.

PIRES, Roberto Rocha Coelho (org.). **Efetividade das instituições participativas no Brasil : estratégias de avaliação**. Brasília: Instituto de Pesquisa Econômica Aplicada (IPEA), 2011. ISBN 978-85-7811-109-0.

PRATT, Bridget. Sustainable global health practice: An ethical imperative? **Bioethics**, v. 36, n. 8, p. 874–882, out. 2022.

PROJETO SAÚDE & ALEGRIA. **Projeto Saúde & Alegria. Santarém (PA): Centro de Estudos Avançados de Promoção Social e Ambiental (CEAPS)**, 1987-. <https://saudeealegria.org.br/>. Accessed 2 Nov. 2025.

RAHBARI BONAB, Maryam *et al.* Sustainable political commitment is necessary for institutionalizing community participation in health policy-making: Insights from Iran. **Health Research Policy and Systems**, 2024.

RAHBARI BONAB, Maryam; MAJZADEH, Reza; RAJABI, Fatemeh. Cross-Country Study of Institutionalizing Social Participation in Health Policymaking: A Realist Analysis. **Health & Social Care in the Community**, v. 2023, n. 1, p. 1927547, 2023.

RAHMAN, Md Ashiq Ur; LEY, Astrid. Institutionalising informal networks of the urban poor under an enabling paradigm: a case study on Greenland slum of Khulna city in Bangladesh. **International Journal of Urban Sustainable Development**, 2020.

RAJAN, Dheepa *et al.* (ed.). **Voice, agency, empowerment - handbook on social participation for universal health coverage**. Geneva: World Health Organisation, 2021.

RIVAS, Rossana; DAVID, Yadin B.; CLARK, Tobey. Education successes applied to disaster preparedness, meeting infectious diseases and malnutrition challenges. **IFMBE Proceedings**, 2019.

ROLIM, Leonardo Barbosa; CRUZ, Rachel de Sá Barreto Luna Callou; SAMPAIO, Karla Jimena Araújo de Jesus. Participação popular e o controle social como diretriz do SUS: uma revisão narrativa. **Saúde em Debate**, v. 37, p. 139–147, 2013.

RYCHETNIK, Lucie; SAINSBURY, Peter; STEWART, Gregory J. How Local Health Districts can prepare for the effects of climate change: an adaptation model applied to metropolitan Sydney. **Australian Health Review**, 2019.

SAMBATH, Vishvaja *et al.* Knowledge, attitudes and practices related to climate change and its health aspects among the healthcare workforce in India – A cross-sectional study. **Journal of Climate Change and Health**, 2022.

SANTOS, Margarida; BATEL, Susana; GONÇALVES, Maria Eduarda. Participar está na moda: uma abordagem psicossocial dos orçamentos participativos. **Psicol. Soc. (Online)**, v. 30, p. e165726–e165726, 2018.

SCHEELBEEK, Pauline F. D. *et al.* The effects on public health of climate change adaptation responses: a systematic review of evidence from low- and middle-income countries. **Environmental research letters**, v. 16, n. 7, p. 073001, jul. 2021.

SHERMAN, Jodi D. *et al.* Sustainable and Resilient Health Care in the Face of a Changing Climate. **Annual Review of Public Health**, v. 44, p. 255–277, 2023.

SITHOLE, Zvanaka *et al.* Enhancing capacity of Zimbabwe’s health system to respond to climate change induced drought: A rapid nutritional assessment. **Pan African Medical Journal**, 2021.

SPERANZA, Juliana; ROMEIRO, Viviane; BETIOL, Luciana; BIDERMAN, Rachel. **Monitoramento da implementação da política climática brasileira: implicações para a Contribuição Nacionalmente Determinada (NDC)**. São Paulo: WRI Brasil, 2017.

SWINBURN, Boyd A. *et al.* The global syndemic of obesity, undernutrition, and climate change: the Lancet Commission Report. **The Lancet**, v. 393, p. 791-846, 2019.
https://alimentandopoliticas.org.br/wp-content/uploads/2019/08/idec-the_lancet-sumario_executivo-baixa.pdf. Accessed 23 Sept. 2025

THOMPSON, Rhiannon *et al.* Ambient temperature and mental health: a systematic review and meta-analysis. **The Lancet Planetary Health**, v. 7, n. 7, Jul. 2023.

TSAKONAS, Kiera *et al.* Rapid review of the impacts of climate change on the health system workforce and implications for action. **Journal of Climate Change and Health**, 2024.

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE. **Local Communities and Indigenous Peoples Platform (LCIPP)**. <https://lcipp.unfccc.int/>. Accessed 2 Nov. 2025.

UN WOMEN. **As climate change pushes millions of women into poverty, UN Women calls for a new feminist climate justice approach**. New York / Dubai, 4 Dec. 2023.
<https://www.unwomen.org/en/news-stories/press-release/2023/12/as-climate-changes-pushes-millions-of-women-into-poverty-un-women-calls-for-a-new-feminist-climate-justice-approach>. Accessed 30 Sept. 2025.

VALÉRY, Ridde *et al.* Climate change, migration and health systems resilience: Need for interdisciplinary research. **F1000Research**, 2019.

VAN DAALEN, Kim Robin *et al.* Bridging the gender, climate, and health gap: the road to COP29. **The Lancet Planetary Health**, v. 8, n. 12, p. e1088–e1105, 1 Dec. 2024.

VASSARI-PEREIRA, Danilo; VALVERDE, María Cleofé; ASMUS, Gabriela Farias. Impacto das mudanças climáticas e da qualidade do ar em hospitalizações por doenças respiratórias em

municípios da Região Metropolitana de São Paulo (RMSP), Brasil. **Ciência & Saúde Coletiva**, v. 27, p. 2023–2034, 2022.

WABNITZ, Katharina Jaqueline *et al.* Planetary health—transformative education regarding the climate and sustainability crises for health professionals. **Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz**, 2021.

WERNECK, J. Institutional racism and black population health. **Saúde e Sociedade**, São Paulo, v. 25, n. 3, p. 535-549, 2016.

WHEAT, Stefan K. *et al.* Creating climate-informed physician leaders: The evolution of a physician fellowship in climate and health science policy. **Frontiers in Medicine**, 2022.

WORLD HEALTH ORGANIZATION. **Climate change and noncommunicable diseases: connections**. Geneva: WHO, 2 Nov. 2023. <https://www.who.int/news/item/02-11-2023-climate-change-and-noncommunicable-diseases-connections>. Accessed 2 Nov. 2025.

WORLD HEALTH ORGANIZATION. **Everybody's business: strengthening health systems to improve health outcomes: WHO's framework for action**. Geneva: WHO, 2007. <https://iris.who.int/server/api/core/bitstreams/809f813f-5b90-4187-861b-3953bb54e244/content>. Accessed 30 Sept. 2025.

WORLD HEALTH ORGANIZATION. **Institutionalizing social participation to accelerate progress towards universal health coverage and health security: technical brief**. Geneva: WHO, May 2023. 4 p. <https://cdn.who.int/media/docs/default-source/uhc/publications/technical-brief-on-social-participation.pdf>. Accessed 2 Nov. 2025.

WORLD HEALTH ORGANIZATION. **Operational framework for building climate resilient and low carbon health systems**. Geneva: World Health Organization, 2023. ISBN 978-924-0081888. <https://www.who.int/publications/i/item/9789240081888>. Accessed 2 Nov. 2025.

WORLD HEALTH ORGANIZATION. **Social participation for universal health coverage, health and well-being: resolution WHA77.2**. Geneva: World Health Organization, 2024a. (Seventy-seventh World Health Assembly, agenda item 11.1, 1 June 2024). https://apps.who.int/gb/ebwha/pdf_files/WHA77/A77_R2-en.pdf. Accessed 2 Nov. 2025.

WORLD HEALTH ORGANIZATION. Regional Office for Europe. **Institutionalizing social participation in health policy for better performing health systems: policy lessons from the field**. Copenhagen: WHO Regional Office for Europe, 2024b. 39 p. Documento n. WHO/EURO:2024-10608-50380-76034. <https://iris.who.int/handle/10665/376885>. Accessed 2 Nov. 2025.

WORLD HEALTH ORGANIZATION. **A Global Health Strategy for 2025-2028 - advancing equity and resilience in a turbulent world: fourteenth General Programme of Work**. Geneva: World Health Organization; 2025.

WORLD OBESITY FEDERATION. **Atlas Mundial da Obesidade 2025**. London: World Obesity Federation, 2025. Portuguese version by Instituto Cordial. <https://lp2.institutocordial.com.br/pbo-223-atlas-25>. Accessed 24 Sept. 2025.

ZIDA, Andre *et al.* Analysis of the policymaking process in Burkina Faso's health sector: Case studies of the creation of two health system support units. **Health Research Policy and Systems**, 2017.

