BELÉM HEALTH ACTION PLAN FOR THE ADAPTATION OF THE HEALTH SECTOR TO CLIMATE CHANGE

Priorities (crosscutting issues)

i. **Health Equity and Climate Justice:** Propose adaptation measures that simultaneously address socioeconomic, gender, racial-ethnic, nutritional, and health care access inequalities, all of which are exacerbated by climate change. These measures must align with the concept of climate justice, which recognizes that the impacts of climate change — such as extreme weather events, sea level rise, and resource scarcity — disproportionately affect the most vulnerable populations. Climate justice advocates for equitable solutions that prioritize these populations, fairly distribute the costs and benefits of climate action, and account for historical and structural inequalities, promoting a more inclusive and sustainable response to the climate crisis.

ii. **Leadership and Governance on Climate and Health with Social Participation:** Guide the implementation of adaptation policies by promoting accountability and oversight mechanisms established within Ministries of Health or National Health Authorities. The Plan reinforces the full, equitable, and active participation of civil society, including women, youth, persons with disabilities, older adults, migrants and refugees, Indigenous peoples, and traditional communities, as well as other groups in more vulnerable situations.

Action Lines and Proposed Measures for Adaptation and the Development of Climate-Resilient Health Systems

Action Line 1: Surveillance and Monitoring

Objectives: Strengthen health surveillance and monitoring systems to effectively detect, prevent, and respond to climate-related health threats. This includes developing and implementing early warning systems based on climate data and projections, real-time data

collection and analysis from multiple sources, and improving epidemiological tracking to assess, anticipate, and mitigate the health impacts of climate change.

1.1. Improve Climate-Informed Health Surveillance and Early Warning Systems:

- Implement integrated methodologies linking environmental, meteorological, and climate monitoring data with health surveillance systems to enhance early detection, risk interpretation, and anticipation of climate-related public health threats. This may involve partnerships among health institutions, meteorological agencies, universities, and research centers;
- These methodologies should produce timely and actionable information for early warning systems, addressing not only extreme climate events but also emerging or increasing risks of climate-sensitive diseases;
- Ensure that early warning systems and public health campaigns are delivered in accessible formats (e.g., sign language, braille, plain language), ensuring the right to information for people with disabilities;
- Public health institutions must invest in data infrastructure, real-time analysis capabilities, and effective protocols for cross-sectoral information sharing. It is equally critical to actively involve and train the health workforce and community-based surveillance mechanisms, particularly at the local level, to improve engagement with potentially affected populations, expedite data collection, maintain community-level monitoring, and ensure a rapid and efficient response;
- Adopt operational protocols based on climate forecasts, particularly in areas and periods of heightened vulnerability, while incorporating local knowledge and traditional and ancestral cultures;
- Develop decision-support tools based on climate data (e.g., risk dashboards, heat maps, seasonal alerts);
- Produce health-specific climate bulletins (e.g., for arboviruses, heatwaves, air quality).

1.2. Identify a Priority List of Climate-Related Risks and Diseases and Develop Strategies to Address Them:

- At the national level, develop a list of climate threats, diseases, conditions, vulnerabilities, and health risks associated with climate change, based on scientific evidence

and national/international references, with periodic updates to guide monitoring, prevention, and response actions;

- Foster research and development of technologies and approaches for detecting, testing, treating, and mitigating climate-sensitive conditions — including those linked to pollutants that exacerbate global warming;
- Support the most vulnerable communities in implementing adaptation strategies focused on equity, social participation, and strengthening local resilience capacities and mechanisms.

1.3. Strengthen Preparedness and Strategic Stockpiles of Supplies, Vaccines, and Medicines:

- Strengthen health system readiness through emergency planning, training, and simulation exercises. Maintain strategic reserves of essential supplies, including vaccines and medicines, to enable rapid and effective responses to climate-related health threats and improve resilience in the face of potential system and service overloads;
- Develop contingency plans for maintaining the production, distribution, and monitoring of strategic stocks of supplies, vaccines, and medicines for climate-adapted health systems, services, and programs, considering national threats, risks, and vulnerabilities.

Action Line 2: Evidence-Based Policy Strategy and Capacity Building

Objectives: Accelerate the implementation of evidence-based solutions and policies by fostering cooperation among governments, academic institutions, civil society, international organizations, and other stakeholders. Encourage multidisciplinary, intersectoral, and participatory approaches to address the climate-health nexus, ensuring the active and informed participation of traditional communities and Indigenous peoples in policymaking and decision-making processes.

2.1. Climate-Health Nexus Adaptation Terminology:

- Adopt a standardized and consensus-based classification of terms, concepts, and categories related to the climate-health nexus, health equity, climate justice, and health sector adaptation to climate change. This should be based on established references — such

as the Intergovernmental Panel on Climate Change (IPCC) glossary — while incorporating the specificities and needs of the health sector. Standardization will improve communication among different actors and sectors, promote a common language in policy, and project formulation, implementation, monitoring, and evaluation, enable better data comparability, enhance results tracking, and strengthen climate governance in health.

2.2. Smart Workforce to Manage Climate Change Challenges:

- Strengthen institutional capacity through ongoing training of managers at all levels of the health system, with a focus on risk management related to climate change, including the development of guidelines and protocols to safeguard health workers and ensure service continuity during extreme climate events;
- Provide technical training for health professionals, tailored to their roles, to address the impacts of climate change — from gradual manifestations to extreme events — with a focus on prevention, diagnosis, and treatment of climate-sensitive conditions and their determinants. Training must particularly prepare workers to serve especially vulnerable populations, including people with disabilities, pregnant women, children, and older adults;
- Integrate environmental and climate content into health education curricula;
- Ensure equitable distribution and retention of health professionals through policies and mechanisms to address workforce shortages and ensure continuous service provision, especially in more vulnerable regions;
- Establish psychosocial support mechanisms for health professionals — especially those on the frontlines — and for populations disproportionately affected by climate change, recognizing cumulative effects on mental health and collective well-being;
- Incorporate territorial and traditional surveillance techniques into health worker training processes.

2.3. Promote Community Resilience and Climate Awareness:

- Develop and support training initiatives on health and climate change at local, national, and regional levels, tailored to different audiences and cultural and territorial specificities, integrating traditional, local, and Indigenous knowledge, practices, and experiences into climate adaptation strategies;

- Strengthen integrative and community care practices in priority areas, aiming to foster human health resilience through local organization.

2.4. Gender-Responsive Adaptation Policies:

- Develop evidence-based strategies to include gender-sensitive adaptation policies, incorporating women's reproductive health as well as maternal and child health, in national adaptation plans and disaster response actions. This approach must consider how climate change impacts health differently for women, men, and LGBTQIAPN+ communities, requiring tailored care across diverse realities.

2.5. Multisector Strategies for Public Policy with Health Co-Benefits:

- Promote intersectoral policies that maximize health and climate co-benefits, prioritizing actions that reduce air pollution, prevent fires and dust storms, ensure access to healthy and sustainable diets, water availability, promote quality public transport, climate-resilient housing, and expand vaccination against climate-sensitive diseases;
- Improve intersectoral communication during climate emergencies among health services, civil defense, meteorological institutes, fire departments, social services, and other strategic sectors within an early warning and response framework;
- Strengthen national and international cooperation to improve food control systems, prevent foodborne disease risks, and integrate the One Health approach, recognizing the interconnections between nutrition, climate change, and human health;
- Integrate tobacco control actions into the health sector's climate adaptation strategies, recognizing that reducing tobacco use enhances individual and system resilience to extreme climate events and climate-exacerbated respiratory and cardiovascular conditions;
- Support policies that promote solid waste management, sanitation infrastructure, chemical safety, and air pollutant control and reduction, as these may be contamination sources worsened by climate events.

2.6 Worker Health

- Promote ongoing research on climate change impacts on work environments, relationships, and processes, focusing on direct and indirect effects on workers' health — including the need to adjust or suspend work activities temporarily or permanently;

- Develop and implement effective mechanisms to monitor, protect, and improve worker health, especially for those in vulnerable conditions, risky occupations, and across all geographic and socioeconomic contexts.

2.7 Integrate Mental Health and Psychosocial Support (MHPSS) into Climate Adaptation in the Health Sector:

- Prioritize and mainstream Mental Health and Psychosocial Support (MHPSS), recognizing that climate change impacts on mental health are already significant and tend to intensify. This should be a continuous component of prevention, preparedness, response, and recovery strategies;
- Develop and implement Psychological First Aid (PFA) programs for health professionals and affected communities;
- Include MHPSS actions in training and capacity-building programs for the health workforce (see Item 2.2);
- Establish intersectoral protocols and care pathways that integrate MHPSS into climate emergency surveillance and response;
- Prioritize funding and technical support for these actions, especially in high-climate-vulnerability contexts.

2.8. Policies for People with Disabilities (PWDs):

- Ensure health systems and climate emergency responses are accessible, inclusive, and capable of guaranteeing continuity of care, including medications, assistive devices, and caregiver support;
- Promote adaptation of health infrastructure to climate change with full physical, communicational, and attitudinal accessibility, incorporating the active participation of people with disabilities in planning and governance;
- Train health professionals to meet the specific needs of people with disabilities in climate contexts, and integrate disaggregated data into surveillance and public policy evaluation systems.

Action Line 3: Innovation and Production

Objectives: This action line aims to foster research, development, and application of innovative technologies that effectively meet the health needs of populations, taking into account territorial and institutional specificities. It seeks to strengthen resilience and reduce the vulnerability of health systems to the impacts of climate change through the modernization of infrastructure, equipment, supplies (including medicines), and services, as well as the integration of digital solutions and climate-sensitive medical innovations. The strategy also includes enhancing the resilience of the health production complex, promoting its sustainability and responsiveness. Appropriate and continuous financial allocation is essential to enable and consolidate these actions in an integrated and effective manner.

3.1. Resilient Infrastructure and Services

- Promote investments in sustainable innovation and technology to ensure the uninterrupted operation of health services during extreme climate events and in high-stress contexts, such as droughts, heatwaves or cold spells, and climate-related disease outbreaks;
- Implement energy-efficient solutions, renewable energy sources, safe water supply and sanitation, and ensure the functionality of climate-adapted communication and logistics systems in health facilities;
- Develop public mechanisms to ensure the availability of essential supplies, with strategically located warehouses and transport routes for quick emergency response;
- Conduct periodic and integrated risk analyses, including forced displacement and potential conflicts, to identify critical vulnerability factors and strengthen the climate resilience of health services and infrastructure;
- Ensure continuous and effective access to health services through the expansion of telehealth and the strengthening of public digital infrastructure, promoting integration and territorial equity

3.2. Climate-Driven Health Programs

- Mainstream climate adaptation and resilience plans into specific policies and strategies such as immunization programs, disease elimination initiatives, and the expansion of diagnostic and treatment services;

- Design plans that systematically involve all levels of health care — from primary to highly specialized care — ensuring coordinated and effective responses to adverse climate events.

3.3. Evaluation of Adaptation and Resilience Policies and Actions in the Health Sector

- Conduct systematic analyses of the impacts of public policies, programs, and interventions related to climate change on population health, considering the entire life cycle of implemented actions;
- Assess the cost-effectiveness and Return on Investment (ROI) of climate-related interventions in the health sector, identifying "best buys" that are particularly relevant in contexts of fiscal constraint;
- Use data from economic evaluations to guide budgetary decisions and mobilize sustainable financing, enhancing efficiency and equity in resource allocation;
- Promote local data production in open, interoperable formats with privacy safeguards, ensuring reuse and secondary use for monitoring, evaluation, and evidence-based policy formulation.

3.4 Adaptation for Just Transitions

- Recognize climate justice as a guiding principle for adaptation and resilience policies, ensuring that strategies prioritize the reduction of vulnerabilities in exposed populations, particularly those historically marginalized;
- Ensure that adaptation, mitigation, and resilience policies prioritize the protection of those who have contributed least to historical greenhouse gas emissions — including consideration of socioeconomic inequities tied to ethnicity and race, traditional communities, Indigenous peoples, and vulnerable workers — promoting an inclusive and just energy transition;
- Incorporate mechanisms to address the unequal impacts of both climate change and the energy transition on vulnerable groups, guaranteeing equitable access to transition benefits, such as decent jobs, clean energy, healthy environments, and strengthened public health services.

3.5 Health Supply Chain

- Expand the material and technological base of the health supply chain to ensure the local and sustainable production of technologies, including medicines, vaccines, equipment, strategic supplies, and innovative climate adaptation solutions;
- Promote the development and incorporation of innovations in infrastructure, services, regulation, financing, and organization of health systems, focusing on sustainability, energy efficiency, and readiness for extreme climate events;
- Integrate digital technologies, information systems, and telehealth tools as structural components for continuity of care, real-time surveillance, climate risk management, and inclusion of populations in remote or vulnerable areas.