Climate-Resilient and Environmentally-Sustainable Health Care Facilities in Timor-Leste

POLICY PRIORITIES AND STRATEGIES

MINISTRY OF HEALTH TIMOR-LESTE

APRIL 2025

Ministério da Saúde

World Health Organization
Timor-Leste

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Foreword

It is with great pride and deep purpose that Ministry of Health presents this policy and strategy document on climate resilient and environmentally sustainable health facilities in Timor-Leste. In these pages, we find not only a strategic roadmap, but also proof of our commitment to the health and well-being of the Timorese people and the resilience of our community.

The Ministry of Health of Timor-Leste has long been committed to strengthening our health system, with the aim of providing quality health care for all and ensuring that no one is left behind. This policy document reaffirms this commitment and expands its scope to include the pressing challenges of climate change.

I would like to extend my heartfelt thanks to the Environmental Health team whose expertise, dedication and commitment to excellence have contributed to this endeavor. To the health facilities that participated in this study and provided insights, your willingness to participate in the process demonstrates your unwavering commitment to the well-being of our communities. To the team from Health Care Without Harm Southeast Asia (HCWH-SEA) who has offered invaluable expertise and commitment to the success of this project, your commitment has strengthened the rigor and depth of our initiatives, and your continued support is greatly appreciated. Finally, we thank the World Health Organization (WHO) for their support, collaboration, and guidance in this project. Your global leadership has contributed to the development of tailored policies and strategies in Timor-Leste.

This policy and strategy document expresses not only our commitment but also our responsibility as the Ministry of Health. It acts as a beacon that guides us to build a stronger, climate-resilient, and environmentally sustainable health system. With these policies and strategies, we are better equipped to provide quality healthcare, to safeguard our environment, and to lead in the global effort against climate change. Together, we shall create a healthier, more sustainable future for Timor-Leste and beyond.

dr. Élia A.A. dos Reis Amaral, SH
Minister of Health of IX constitutional Government
Democratic Republic of Timor-Leste

Message

In a world where the impacts of climate change are becoming increasingly evident, and where environmental sustainability is crucial to securing our planet's future, Timor-Leste has taken a bold step forward. This document exemplifies our nation's commitment to safeguarding the well-being of Timorese citizens and the environment upon which we all depend.

Timor-Leste, a young and developing nation, is forging ahead with an unwavering commitment to building a sustainable and climate-resilient health system. The vulnerabilities identified in our healthcare facilities, as highlighted in this document, are just challenges; they are opportunities to act boldly, comprehensively, and with the urgency that these matters deserve.

This Policy and Strategy Document lays out a clear path forward. It outlines the priorities and strategies that will guide us as we work together to build climate-resilient and environmentally sustainable healthcare facilities. It emphasizes our commitment to strengthening the health workforce, enhancing water supply, sanitation, and hygiene facilities, improving healthcare waste management, and ensuring reliable energy supply. It also highlights the need to strengthen our healthcare infrastructure, processes, and collaborative partnerships, addressing the structural and non-structural elements that will make our healthcare facilities more resilient.

However, this document is more than just a national policy. It is a testament to the country's leadership on a global stage. Timor-Leste's determination to integrate climate resilience and environmental sustainability into its healthcare sector stands as an example for others to follow. We understand that the impact of our actions transcends our own borders. Our journey toward resilient healthcare facilities also contributes to the global efforts on climate and health. I commend the Ministry of Health and healthcare facilities in the country for embarking on this significant endeavor.

We are writing a new chapter in Timor-Leste's journey toward prosperity and health, one where our commitment to climate resilience and environmental sustainability ensures a bright and sustainable future for all Timorese citizens. Let this document be a guiding light as we work collectively to achieve these vital goals.

Dr Arvind Mathur
WHO Representative
Democratic Republic of Timor-Leste

Section 1 | Policy Situation Analysis and Purpose

1.1 Climate change and health: the context of Timor-Leste

Climate change is the greatest health threat that humanity is facing today. The recently published Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) Working Group II and the Lancet Countdown on health and climate change have strongly reiterated that adaptation actions are urgently needed to mitigate the vulnerabilities we are facing because of human-induced climate change.

Frequent extreme weather events driven by climate change have resulted in millions of preventable mortality and morbidity. Between 2000 and 2019, about 475,000 people died worldwide as a direct result of more than 11,000 extreme weather events. (Eckstein et al., 2021) Incidences of zoonotic, food, water; and vector-borne diseases have been more prevalent. Droughts, floods, heatwaves, and sea-level rise have adversely affected food security and nutrition. Mental health, migration, and other factors affecting well-being are being impacted by the changing climate. (WHO, 2021)

Climate change also threatens and undermines the existing vulnerability of the poor, minorities, and those who do not have access to health care and social support structures, among others. (WHO, 2021) We have seen in the past how extreme weather events have revealed the vulnerability of health care systems and the extent of devastation to communities when they fail. Climate change has the potential to disrupt health services, as road blocks may limit the accessibility of supplies; essential services needed for running health facilities, such as energy and water supply, may be interrupted; and patients' accessibility to health facilities may be obstructed. (Watts et al., 2019)

The impacts of climate change are more detrimental and disproportionately felt by vulnerable low- and middle-income countries that are least responsible for it and least able to respond. IPCC's Working Group 2 report assessed that in 8 out of the 12 climate-sensitive health risks, countries in Asia - including those who are from the Southeast Asia region - are the most affected and where the majority of global deaths in 2019 come from. With climate change increasing the risk of severe impacts on our health and placing complex, multifaceted, and unpredictable demands on health systems, countries need to systematically assess and monitor their health vulnerabilities in order to inform appropriate adaptation plans and actions.

Timor-Leste faces a unique set of challenges resulting from the convergence of its geographical location, climate vulnerability, and health system limitations. Located in Southeast Asia, Timor-Leste is particularly susceptible to the adverse effects of climate change due to its exposure to extreme weather events, rising sea levels, and shifting rainfall patterns.

In recent years, the country has experienced an alarming increase in the frequency and severity of extreme weather events, including cyclones, floods, landslides, and prolonged droughts. These events have led to the displacement of communities, destruction of infrastructure, and disruptions to the delivery of healthcare services. Access to clean water and sanitation facilities, essential for preventing water-borne, vector-borne, and food-borne diseases, is often compromised in the aftermath of such events, further exacerbating health risks.

The health impacts of climate change in Timor-Leste are profound. Rising temperatures have resulted in more frequent and prolonged heat waves, placing vulnerable populations, such as the elderly and children, at increased risk of heat-related illnesses. Vector-borne diseases like dengue fever, which are sensitive to temperature and rainfall patterns, have expanded their geographical range, affecting more communities.

Moreover, the changing climate has a direct bearing on food security and nutrition. Timor-Leste's predominantly agrarian economy is highly dependent on rainfall for crop cultivation. Erratic rainfall patterns and prolonged droughts that are often subject to El Niño have led to reduced agricultural productivity and increased food insecurity, contributing to malnutrition and its associated health consequences.

The intersection of climate change with the existing vulnerabilities of Timor-Leste's healthcare system has been acutely observed. Health facilities, particularly in rural and remote areas, are often ill-equipped to withstand extreme weather events. Road networks can become impassable during heavy rains or flooding mainly because of landslides, hindering the timely delivery of medical supplies and healthcare personnel to affected communities.

Furthermore, in Timor-Leste, the healthcare system, though making significant strides in recent years, remains fragile, with limited resources and infrastructure. Climate change places added pressures on this system as the demand for healthcare services surges during and after extreme weather events, often overwhelming the already constrained capacity of health facilities.

The impacts of climate change manifest as significant challenges for the country's healthcare system, including interruptions on already limited energy supply and availability of safe water which is crucial for healthcare facilities; disruptions to the supply chain for essential medical equipment and pharmaceuticals, which can lead to shortages and hinder the ability to provide critical care; damage to healthcare infrastructure due to flooding, landslides, and extreme weather events which can impede service delivery and compromise the safety of both patients and healthcare workers; and, a heightened risk of disease outbreaks in post-disaster situations, leading to increased demand for care in health facilities. Health facilities face difficulties coping with these challenges, further straining an already resource-constrained healthcare system.

1.2 Purpose of this Policy and Strategy Document

In light of the challenges mentioned above, it is imperative that Timor-Leste develops a comprehensive policy framework to address the implications of climate change on its health facilities.

This policy aims to strengthen the climate resilience and environmental sustainability of healthcare facilities, improve the healthcare system's ability to respond to climate-related health risks, and safeguard the health and well-being of all Timorese citizens. The main users of this policy and strategy document will be the policymakers at the Ministry of Health (MOH), administrators of health facilities, and other stakeholders including relevant international organizations such as the World Health Organization (WHO).

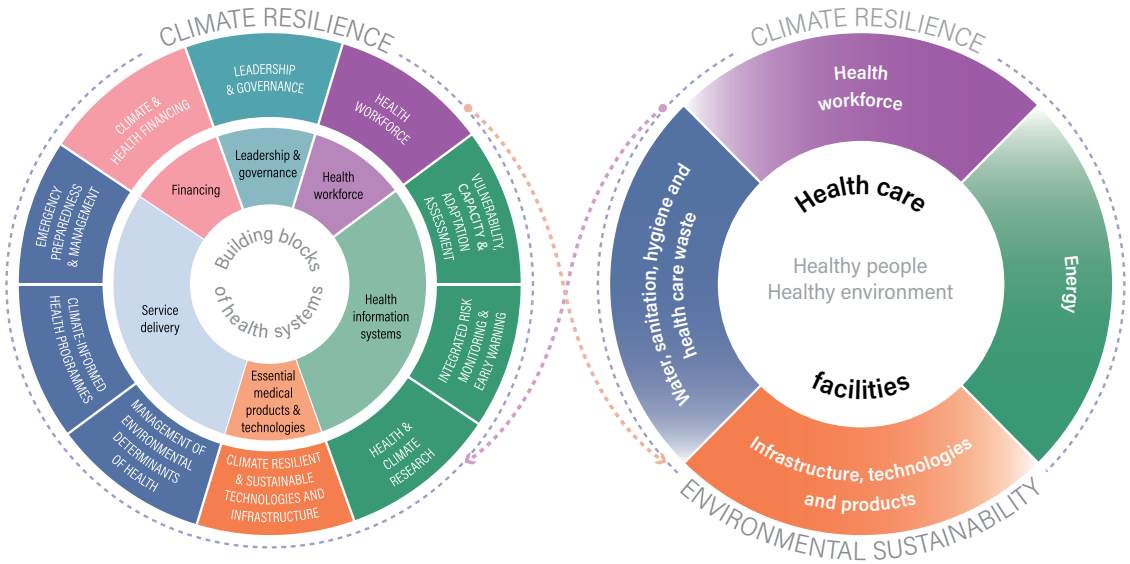
1.3 Climate-Resilient and Environmentally-Sustainable Health Care Facilities

This policy and strategy document was developed through a project funded by the WHO in Timor-Leste in collaboration between Health Care Without Harm Southeast Asia (HCWH-SEA) to support the MOH in developing climate-resilient and environmentally-sustainable health care facilities. Through the project, an assessment of the climate vulnerability of selected health facilities in the country was conducted. This document is the second component of this project and contains the recommended policies and strategies based on the results of the vulnerability assessment. The main reference document for the vulnerability assessment as well as identification of possible interventions is the WHO *Guidance Document for Climate- Resilient and Environmentally Sustainable Health Care Facilities* (see Figure 1).

The guidance document looks specifically at how the initial 10 components of the broader WHO operational framework for climate-resilient health systems can be adapted to healthcare facilities and highlights 4 fundamental requirements for providing safe and quality care:

1. **Health workforce**: adequate numbers of skilled human resources, with decent working conditions, empowered and informed to respond to these environmental challenges.
2. **Water, sanitation, hygiene (WASH) and health care waste management**: sustainable and safe management of water, sanitation and health care waste services.
3. **Energy**: sustainable energy services.
4. **Infrastructure, technologies and products**: appropriate infrastructure, technologies, products and processes, including all the operations that allow for the efficient functioning of a healthcare facility.

Figure 1. Climate-resilient and environmentally sustainable health care



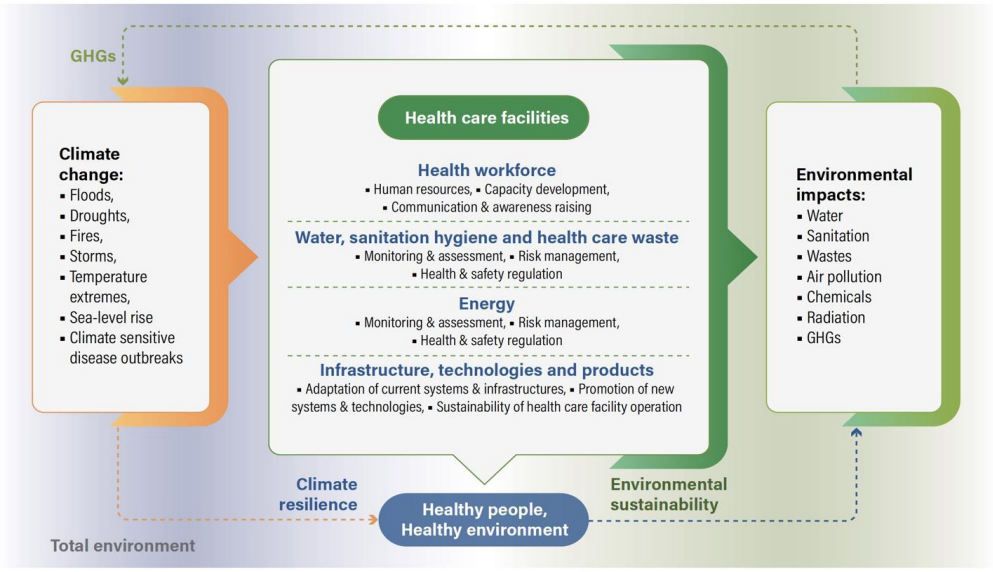
Source: WHO, 2020b

WHO defines **climate-resilient healthcare facilities** as those that are "*able to anticipate, respond to, cope with, recover from and adapt to climate-related shocks and stress, so as to bring ongoing and sustained health care to their target populations, despite an unstable climate*". (WHO, 2020a) When health facilities are impacted by climate-related events such as typhoons, flooding, or drought, their level of performance and capacity to continue to provide quality healthcare services are also impacted due to potential impacts on their key elements. This determines whether they are able to recover worse than before, to their pre-event state, or better than before.

Health care facilities can also have adverse environmental impacts, if not well designed and managed, affecting both the health workforce and the community they serve. In a 2019 study conducted by HCWH, the sector was found to be contributing to the climate crisis, accounting for about 4.4% of net global emissions. (HCWH, 2019) Facilities contribute to greenhouse gas (GHG) emissions and air pollution through energy consumption, product manufacture, procurement, use and disposal, with various sources of emissions throughout the supply chain. It is therefore imperative for the sector to not only build its resilience to impacts of climate change but also, at the same time, optimize the use of its resources and minimize the release of wastes and emissions by becoming environmentally-sustainable and low-carbon.

WHO defines **environmentally-sustainable healthcare facilities** as those that "improve, maintain or restore health, while minimizing negative impacts on the environment and leveraging opportunities to restore and improve it, for the benefit of the health and well-being of current and future generations". This means that initiatives on environmental sustainability in a health facility should be reducing the hazards that come from its operations (ie. use of chemicals that can lead to food and water contamination) while at the same time decreasing its exposures and vulnerabilities (ie. on patients, health workforce, and the community).

Figure 2. WHO's framework for building climate-resilient and environmentally-sustainable healthcare.



Source: WHO, 2020b

Following this approach, a **climate-resilient and environmentally-sustainable healthcare** is therefore defined as an institution that is able to "*anticipate, respond to, cope with, recover from and adapt to climate-related shocks and stresses, while minimizing negative impacts on the environment and leveraging opportunities to restore and improve it, so as to bring ongoing and sustained health care to their target population and protect the health and well-being of future generations*".

When combined, these strategies can aid in identifying a health facility's greatest climate vulnerabilities and sources of environmental impacts and emissions, facilitate the prioritization of policies, programs and investment areas aimed at addressing all three elements, and encourage innovation and ingenuity that will enable the transformation of their facility into a sustainable and climate-resilient health care.

WHO proposed a process to implement interventions contained in the guidelines for health facilities and that includes **establishing the baseline by conducting vulnerability assessments**. A vulnerability and adaptation (V&A) assessment is a crucial step before implementing any adaptation plans. It is a participatory process that will guide healthcare facilities to find the relevant information needed to identify current and future climate hazards that affect health care facilities; understand the health impacts from these hazards; understand the current capacity of the health care facility to manage these health impacts; and identify and prioritize effective adaptation of the interventions to respond.

Building on the WHO frameworks and tools, a tailored vulnerability assessment was conducted in 10 health care facilities in Timor-Leste, representing the different geographical and climatic contexts, as well as the three levels of healthcare system in the country. The assessment has unveiled that the healthcare sector is particularly susceptible to climate change impacts, demanding immediate action. While primary healthcare facilities exhibit high vulnerability, secondary and tertiary facilities display medium vulnerability. Climate resilience and environmental sustainability must be pursued with pragmatism and collaboration, given the resource limitations. Incremental improvements, facilitated by partnerships with government agencies and NGOs, are essential. It highlights the need for Timor-Leste to adopt a multifaceted and collaborative approach to confront the formidable challenges of climate resilience and environmental sustainability. Prioritizing these issues will safeguard public health and well-being, ensuring a prosperous and healthy future for the nation.

Section 2 | Policy Goal and Priorities for Climate-Resilient and Environmentally-Sustainable Health Care Facilities

The policy goal for Timor-Leste over the next five years is to establish climate-resilient and environmentally sustainable healthcare facilities that can effectively address the emerging health risks associated with climate change. Recognizing the critical nexus between climate resilience and public health, this policy aims to safeguard the well-being of Timorese citizens while reducing the healthcare sector's contribution to environmental degradation.

Timor-Leste, a young and developing nation, is at a pivotal juncture in its pursuit of a sustainable and climate-resilient healthcare system. The vulnerability assessment conducted on healthcare facilities across the country reveals that almost all primary healthcare facilities exhibit high vulnerability levels, while secondary and tertiary health facilities maintain a medium level of vulnerability. None of the healthcare facilities evaluated received a low vulnerability score in any of the four critical components: Health Workforce; WASH and Healthcare Waste; Energy; and Infrastructure, Technologies, Products, and Processes.

This policy goal seeks to address these vulnerabilities comprehensively, thereby improving the capacity of Timor-Leste's healthcare system to withstand the adverse impacts of climate change. This will be achieved through the following policy priorities:

Priority 1: Strengthening Health Workforce Resilience

Priority 2: Enhancing Water Supply, Sanitation, and Hygiene Facilities and Improving Healthcare Waste Management

Priority 3: Strengthening Energy Infrastructure and Improving Efficiency

Priority 4: Enhancing Infrastructure Integrity and Maintenance and Strengthening Processes and Collaborative Partnerships

These policy priorities represent Timor-Leste's commitment to proactively address the challenges posed by climate change to its healthcare facilities. By prioritizing climate resilience and environmental sustainability, the MOH aims to ensure the well-being of its population and lay the foundation for a prosperous and healthy future for all Timorese citizens.

Section 3 | Policy Statement for Climate-Resilient and Environmentally-Sustainable Health Care Facilities

These policy priorities and the strategies that will be discussed in this section were developed ensuring their alignment with existing national-level policies and strategies, notably the Timor-Leste Health National Adaptation Plan (HNAP).

3.1 Policy Priorities and Strategies

3.1.1 Priority 1: Strengthening Health Workforce Resilience

Recognizing the pivotal role of health workers in building climate resilience and environmental sustainability in health care facilities, it is essential to prioritize their awareness, training, and empowerment. The vulnerability study's outcomes underscore the immediate need for comprehensive, equitable training programs centered on climate change and health, emergency preparedness, and climate-resilient health systems. The analysis reveals that thorough training of healthcare workers is pivotal to heighten their awareness of the intricate connections between climate change and health. By endowing the staff with the necessary knowledge and competencies, the healthcare sector can proficiently address climate-related health threats, thereby safeguarding communities from the adverse impacts of extreme weather events, vector-borne diseases, and other climate-related health challenges.

Under this priority, Timor-Leste specifically aims to implement the following strategic approaches and interventions.

Strategy 1.1: Establish training programs for health workers to raise awareness about climate risks and their implications for patient care, equipping them with skills to promote sustainable practices:

- Design training modules covering climate and health issues, measures for enhancing climate resilience, and environmental sustainability at health facilities. Incorporate case studies from Timor-Leste and other parts of Southeast Asia to enhance relevance and applicability. These modules will be integrated into orientation programs for both new and existing health workers.
- Equip healthcare facilities with emergency plans for shift relay or replacement and access to additional health workers during and after climate-related events. Ensure facilities are prepared to handle climate-related emergencies effectively by implementing clear plans and standard operating procedures (SOPs).
- Organize workshops aimed at enhancing the capacity of health workers to address climate-related hazards and promote environmental sustainability across various healthcare programs. Cover a wide range of topics including early warning, alert response system (EWARS), water conservation, energy management, waste management, and waste water management. Provide exposure visits, study visits, and training opportunities to foster a deeper understanding of climate and health- related challenges and best practices.

Strategy 1.2: Develop and implement guidelines for maintaining safe working conditions during climate- related hazards, including the provision of personal protective equipment (PPE):

- Create and enforce guidelines that prioritize the safety of health workers during climate-related events, ensuring they have access to necessary and adequate personal protective equipment (PPE) and infection, prevention, and control (IPC) equipment.
- Immunize all healthcare workers and particularly the healthcare waste management workers against at least hepatitis A and B, polio and tetanus prior to exposure to waste handling and provide them with appropriate PPEs.
- Conduct regular assessments of healthcare facilities' preparedness for climate-related hazards, including adequate stockpiles of PPE.

Strategy 1.3: Develop communication strategies to promote climate-resilient, low-carbon, and environmentally-sustainable practices, and advocate for climate and health awareness among policymakers, patients, and communities:

- Facilitate community disaster planning and educational workshops involving health care workers, local government representatives, and community leaders to improve knowledge on how to reduce risks, be prepared, and respond to climate-related hazards.
- Create advocacy and awareness campaigns targeting key policy and decision-makers, such as, line ministries, local government leaders, development partners, and stakeholders, who may directly and/or indirectly contribute to the enhancement of climate and health practices within the healthcare system.
- Develop and disseminate information, education, and communication (IEC) materials for the targeted groups.

Strategy 1.4: Establish coordination mechanisms among health care facilities, local communities, and relevant sectors to strengthen climate change adaptation efforts:

- Develop communication process/es for health care facilities to ensure a coordinated response during early warning situations, including clear messaging about risk reduction to communities.
- Establish contingency plans for accessing and leaving the facility during a climate-hazard event, including health workforce transportation.
- Establish a Climate Change and Health coordination mechanism that includes all relevant health sector focal points, stakeholders, and partners. This coordination mechanism will serve as a collaborative platform for aligning efforts, sharing information, and implementing climate change adaptation strategies in the healthcare sector.

3.1.2 Priority 2: Enhancing Water Supply, Sanitation, and Hygiene Facilities and Improving Healthcare Waste Management

Guaranteeing access to safe and sustainable water, sanitation, and healthcare waste management services stands as a pivotal prerequisite for ensuring quality of care and effective infection prevention and control within healthcare facilities. Aiming for both climate resilience and environmental sustainability, the monitoring of water, sanitation, chemical use, and healthcare waste management procedures must encompass the potential impacts of climate change. Through proactive action,

healthcare facilities can tackle existing vulnerabilities and improve their capacity to manage risks associated with water, sanitation, chemicals, and healthcare waste. This entails the conduct of comprehensive assessments that encompass considerations for climate resilience and environmental sustainability. Regulatory frameworks pertaining to health and safety are enforced with a specific emphasis on climate variability and changes, as well as environmental sustainability with the intent of safeguarding the practices of water, sanitation, chemical safety, and healthcare waste management.

Under this priority, Timor-Leste specifically aims to implement the following strategic approaches and interventions.

Strategy 2.1: Invest in sustainable water infrastructure and emergency preparedness to ensure a stable supply of safe water in healthcare facilities:

- Ensure a stable supply of safe water, including storing water for emergencies and anchoring systems to resist climate events.
- Establish rainwater harvesting procedures to prevent contamination and mosquito breeding, while also reclaiming greywater for non-critical uses.
- Implement routine inspections, address leaks promptly, and develop climate-resilient water safety plans for disaster preparedness and education efforts.

Strategy 2.2: Invest in and maintain robust sanitation and hygiene infrastructure and practices that can withstand climate-related challenges and emergencies, while promoting infection control and public health;

- Develop climate-resilient sanitation plan and conduct appropriate siting/retrofitting of sanitation systems considering soil types, flood risks, and erosion, and incorporate technologies resilient to climate hazards.
- Develop standards for regular desludging of septic tanks before the rainy season, manage sewer overflow, and ensure wastewater treatment to prevent contamination of drinking water during disasters.
- Provide hand hygiene facilities at care points and near toilets, especially during outbreaks, epidemics, and pandemics, promoting infection control and public health.

Strategy 2.3: Promote adaptable WASH practices and foster awareness to reduce mortality and morbidity linked with vector-borne, water-borne, and food-borne diseases:

- Provide and maintain supplies in all healthcare facilities to ensure appropriate quality of water during and after an emergency, this includes water testing kits/portable microbiological systems, chlorine, filters, other water treatment technology, etc.
- Launch awareness campaigns and advocacy efforts on WASH through various media channels.
- Engage with communities to raise awareness about the importance of WASH practices in healthcare facilities.

Strategy 2.4: Develop and implement effective waste management strategies that prioritize environmental sustainability and public health:

- Implement the National Healthcare Waste Management (HCWM) guidance which

provides a framework for standardized practices and guidelines for healthcare waste management nationwide, as well as the coordination mechanisms with various stakeholders.

- Collaborate with waste management authorities (at the municipal and national levels) to ensure the proper implementation of waste management practices and that waste transportation is properly managed during extreme weather events.

- Establish monitoring and evaluation mechanisms for healthcare waste management at the national and municipal levels.

Strategy 2.5: Systematically reduce use of and risks of exposure to hazardous chemicals according to the hierarchy of controls:

- Prioritize elimination and substitution with less hazardous chemicals, followed by engineering and administrative controls to reduce exposure. Reduce unnecessary disinfectant use and promote environmentally-friendly cleaning practices by using vinegar and/or plant-derived cleaning materials.
- Ensure suitable and enough personal protective equipment (PPE) is available, provided and used where the risk of exposure remains.

3.1.3 Priority 3: Strengthening Energy Infrastructure and Improving Efficiency

The findings from the on-site data collection in Timor-Leste emphasize the critical importance of having access to dependable, sustainable, and affordable modern energy services to drive socioeconomic advancement. Within the context of healthcare services, a reliable energy supply is essential for various fundamental functions, encompassing illumination, refrigeration, ventilation, communication, cooking, sanitation, laundry, and computer systems. Moreover, it plays a pivotal role in ensuring the safe disposal of medical waste and facilitating the operation of vital medical equipment, such as emergency surgical tools, laboratory instruments, and diagnostic devices. Despite these imperatives, numerous healthcare facilities in economically developing countries, including Timor-Leste, continue to grapple with insufficient access to adequate energy resources. The proposed policy objectives and strategies below aim to increase the resilience of health care facilities in Timor-Leste, while striving to improve the living condition and health of communities.

Under this priority, Timor-Leste specifically aims to implement the following strategic approaches and interventions.

Strategy 3.1: Promote the adoption of renewable energy sources across healthcare facilities to enhance climate resilience and promote low-carbon and environmental-sustainability:

- Conduct and assessment of energy needs, availability, and alternative sources of renewable energy, and whether renewable energy can power at minimum critical equipment like refrigerators in primary healthcare facilities.
- Collaborate with energy experts and international organizations to provide technical assistance and financial support for the installation and maintenance of renewable energy infrastructure.

- Advocate for the nationwide promotion and adoption of renewable energy sources such as solar, wind, and hydropower.

Strategy 3.2: Implement energy-efficient measures and monitoring in healthcare facilities:

- Develop energy efficiency guidelines and standards specifically tailored for healthcare facilities, outlining best practices for lighting, HVAC systems, and medical equipment.
- Prioritize energy sources and saving measures that are least costly to introduce and/or those that would bring the biggest savings, ie. installing energy-efficient lighting such as light emitting diodes (LED).
- Conduct regular energy audits and implement energy monitoring systems to track energy consumption patterns and identify opportunities for further optimization.

Strategy 3.3: Develop and implement comprehensive emergency preparedness plans that address energy supply disruptions during climate events and emergencies:

- Establish a dedicated fund for emergency energy infrastructure upgrades and backup power systems to ensure continuity of healthcare services during power outages or natural disasters.
- Collaborate with the Ministry of Petroleum and Minerals and the Ministry of Public Works to develop standards and agreements for priority electricity supply to healthcare facilities during power shortages.
- Conduct regular drills, simulations, and maintenance checks for emergency energy supply plans and backup generators. Ensure generators are adequately elevated and anchored in flood-prone and windy areas, covering all critical service areas and equipment.

3.1.4 Priority 4: Enhancing Infrastructure Integrity and Maintenance and Strengthening Processes and Collaborative Partnerships

The structural and non-structural elements of health care facilities significantly influence their climate resilience and environmental sustainability. Structural components involve constructing facilities to withstand extreme weather events, such as floods, storms, and sea-level rise. Integrating climate-resilient architectural aspects, emergency access routes, critical systems (electricity, water supply, waste management, fire protection), and medical equipment ensures healthcare facilities can effectively respond to climate-related challenges. Additionally, the adoption of emerging technologies like digital health can contribute to efficient and sustainable health service delivery. The adaptation of current systems and infrastructures should incorporate building regulations that prioritize climate resilience and environmental sustainability during construction and retrofitting processes. Furthermore, the promotion of new systems and technologies should focus on those that integrate climate resilience, environmental sustainability, and enhanced health service delivery. Sustainable health care facility operations involve adopting and procuring low environmental impact technologies, processes, and products that not only improve climate resilience but also contribute to environmental preservation.

Under this priority, Timor-Leste specifically aims to implement the following strategic approaches and interventions.

Strategy 4.1: Strengthen healthcare facility infrastructure to withstand climate-related challenges, ensuring uninterrupted service delivery and quality of care.

- Conduct vulnerability assessments in target health facilities in all municipalities to identify vulnerabilities in healthcare infrastructure, including exposure to floods, storms, and other climate-related hazards.
- Develop climate-resilient, environmentally-sustainable, and low-carbon designs and construction plans for new and existing healthcare facilities, partnering with architects, engineers, and urban and environmental planners to ensure maintenance plans are also aligned with climate vulnerability measures identified in assessments, addressing structural integrity issues caused by climate impacts.
- Establish partnerships with local communities and authorities to ensure that healthcare facilities' infrastructure is aligned with community needs and priorities.

Strategy 4.2: Promote sustainable procurement and the adoption of environmentally-sustainable technologies and practices within healthcare facilities to minimize environmental impact and enhance operational efficiency:

- Develop and implement guidelines and criteria for the procurement of sustainable medical equipment, supplies, and products, ensuring they meet environmental-sustainability, low-carbon, and climate resilience criteria.
- Integrate energy-efficient lighting, heating, ventilation, and air conditioning (HVAC) systems, and water-saving fixtures into healthcare facility design and retrofitting plans to minimize environmental impact and enhance operational efficiency.
- Display IEC materials throughout the facility, ensuring visibility, on water and energy savings, waste segregation, 3Rs (reduce, reuse, recycle), among others.

Strategy 4.3: Enhance healthcare facility emergency preparedness and response capabilities to effectively manage climate-related emergencies and ensure patient safety:

- Develop and implement comprehensive emergency preparedness plans covering all components and include standards for continuity of care during climate-related emergencies.
- Safely secure information and telecommunications systems with backup arrangement (via cloud, satellite) to satisfy the facility’s demand, at all times, including safely storing and digitizing patient medical records particularly in flood-prone areas.
- Establish emergency transportation systems for the safe relocation of critically-ill patients during emergencies, and foster communication channels and coordination mechanisms with local emergency response agencies, disaster management authorities, utility agencies, and suppliers to enhance healthcare facility response capabilities.

Strategy 4.4: Strengthen early warning, alert response systems (EWARS), partnering with relevant government agencies for timely emergency response:

- Establish partnerships with meteorological agencies and public health departments to improve the accuracy and accessibility of early warning information, this includes communication channels between healthcare facilities and relevant government agencies to facilitate the rapid dissemination of information.

- Integrate EWARS within the relevant department of a healthcare facility for monitoring and surveillance of climate-sensitive diseases, outbreak detection and emergency response.
- Collaborate with relevant government agencies to develop agreements and priorities for healthcare facilities' access to resources such as transportation, food, medical supplies, among others during energy emergencies.

Strategy 4.5: Access external funding and allocate sufficient resources and strengthen partnerships for the effective implementation of climate-resilient, low-carbon, and environmentally-sustainable initiatives.

- Identify potential sources of funding for implementation of the above-mentioned policies and strategies, prioritizing existing financial mechanisms available such as the Green Climate Fund (GCF) and Global Environment Facility (GEF).
- Establish clear channels for resource allocation, ensuring that healthcare facilities have access to adequate funding, technology, and human resources for implementing climate resilience and sustainability initiatives.
- Build on existing partnerships within the community and expand networks with national and international organizations, fostering collaboration to access technical expertise, financial resources, and knowledge sharing, strengthening climate resilience and environmental sustainability.

3.2 Management Arrangements for Implementation

The successful implementation of the priorities outlined in this document requires a coordinated and collaborative effort involving multiple stakeholders. The institutional framework for implementation involves a range of actors, each with specific roles and responsibilities. The MOH plays a central role in guiding, overseeing, and coordinating the execution of these priorities, while partnering with various governmental and non-governmental entities, local governments, communities, and the private sector. Below is an overview of the key institutions and their roles in the implementation process:

- **Ministry of Health:** As the primary government agency responsible for healthcare in Timor-Leste, the MOH assumes a leadership role in implementing the climate resilience and environmental sustainability priorities. Its responsibilities include setting policies, guidelines, and standards, securing resources, and monitoring progress. The MOH also works to build the capacity of healthcare facilities and staff to ensure effective response and adaptation.
- **Local Governments**: Local governments at the municipal level are critical partners in the implementation process. They are responsible for aligning local strategies and plans with the national priorities outlined in this document. Local governments also play a key role in community engagement, disaster preparedness, and ensuring that healthcare facilities in their jurisdictions adhere to climate-resilient and sustainable practices.
- **Non-Governmental Organizations (NGOs):** NGOs working in the healthcare and environmental sectors are essential partners in executing these priorities. They contribute by providing technical expertise, mobilizing resources, and supporting community-based initiatives. NGOs may also engage in advocacy, research, and capacity building to enhance climate resilience and environmental sustainability in healthcare.

- **International Organizations:** International organizations, including United Nation (UN) agencies, such as the WHO, and international NGOs, collaborate with the government of Timor-Leste to offer technical assistance, access to global best practices, and financial resources. They support capacity building, policy development, and the integration of international standards into national frameworks.
- **Private Sector:** The private sector, particularly companies involved in energy, construction, waste management, and medical equipment supply, plays a vital role in implementing sustainable technologies and practices within healthcare facilities. Their participation is instrumental in ensuring the availability of renewable energy solutions, climate-resilient infrastructure, and environmentally sustainable healthcare products.
- **Communities:** Communities are at the heart of climate resilience and environmental sustainability. They are essential partners in raising awareness, mobilizing for disaster preparedness, and holding healthcare facilities accountable for sustainable practices. Engaging communities in decision-making processes and disaster risk reduction efforts is a fundamental aspect of successful implementation.
- **Research and Academic Institutions:** Research institutions and academia contribute by conducting research on climate-health linkages, sharing knowledge, and providing evidence- based recommendations for policy development. They also support training and capacity-building efforts aimed at healthcare professionals.
- **Other Government Agencies**: Various government agencies, such as the Ministry of Environment, the Ministry of Interior, the Ministry of Public Works, Minister of Planning and Strategic Investment, Ministry of Finance, Ministry of Petroleum and Minerals, and Ministry of State Administration also play integral roles in the implementation process. They provide technical expertise, policy alignment, and coordination across sectors to ensure a holistic approach to climate resilience and environmental sustainability.

Effective management arrangements involve regular coordination meetings, progress monitoring, and reporting mechanisms to ensure accountability and transparency. Continuous engagement and cooperation among these institutions and stakeholders are crucial to the successful implementation of the priorities outlined in this document. Furthermore, it is essential to establish and disseminate standardized Standard Operating Procedures (SoPs), standards, and guidelines for the implementation of the policies and strategies outlined above. Incorporating SoPs, standards, and guidelines will provide a structured framework for the consistent and effective implementation of the policies and strategies, promoting uniformity and best practices across all healthcare facilities in Timor-Leste.

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Ministério da Saúde

World Health Organization
Timor-Leste

Policy Priorities and Strategies

Climate-Resilient and Environmentally-Sustainable Health Care Facilities in Timor Leste

PRIORITY ONE.

Strengthening Health Workforce Resilience

1. Establish training programs for health workers to raise awareness about climate risks and their implications for patient care, equipping them with skills to promote climate-resilient, low-carbon, and sustainable practices
2. Develop and implement guidelines for maintaining safe working conditions during climate-related hazards
3. Develop communication strategies to promote climate-resilient, low-carbon, and environmentally-sustainable practices, and advocate for climate and health awareness among policymakers, patients, and communities
4. Establish planning and coordination mechanisms among health care facilities, local communities, and relevant sectors to strengthen climate resilience, low-carbon, and environmental sustainability efforts

PRIORITY TWO.

Enhancing Water Supply, Sanitation, and Hygiene Facilities, and Improving Healthcare Waste Management

1. Invest in sustainable water infrastructure and emergency preparedness to ensure a stable supply of safe water in healthcare facilities
2. Invest in and maintain robust sanitation and hygiene infrastructure and practices that can withstand climate-related challenges and emergencies, while promoting infection control and public health
3. Promote adaptable WASH practices and foster awareness to reduce mortality and morbidity linked with vector-borne, water-borne, and food-borne diseases
4. Develop and implement effective waste management strategies that prioritize climate resilience and environmental sustainability
5. Systematically reduce use and risks of exposure to hazardous chemicals according to the hierarchy of controls

PRIORITY THREE.

Strengthening Energy Infrastructure and Improving Efficiency

1. Promote the adoption of renewable energy sources across healthcare facilities to enhance climate resilience and promote low-carbon and environmental-sustainability
2. Implement energy-efficient measures and monitoring in healthcare facilities
3. Develop and implement comprehensive emergency preparedness plans that address energy supply disruptions during climate events and emergencies

PRIORITY FOUR.

Enhancing Infrastructure Integrity and Maintenance and Strengthening Overall Effectiveness of Processes and Systems

1. Strengthen healthcare facility infrastructure to withstand climate-related challenges, ensuring uninterrupted service delivery and quality of care
2. Promote sustainable procurement and the adoption of environmentally-sustainable technologies and practices within healthcare facilities to minimize environmental impact and enhance operational efficiency
3. Enhance healthcare facility emergency preparedness and response capabilities to effectively manage climate-related emergencies and ensure patient safety
4. Access external funding, allocate sufficient resources, and strengthen partnerships for the effective implementation of climate-resilient, low-carbon, and environmentally-sustainable initiatives