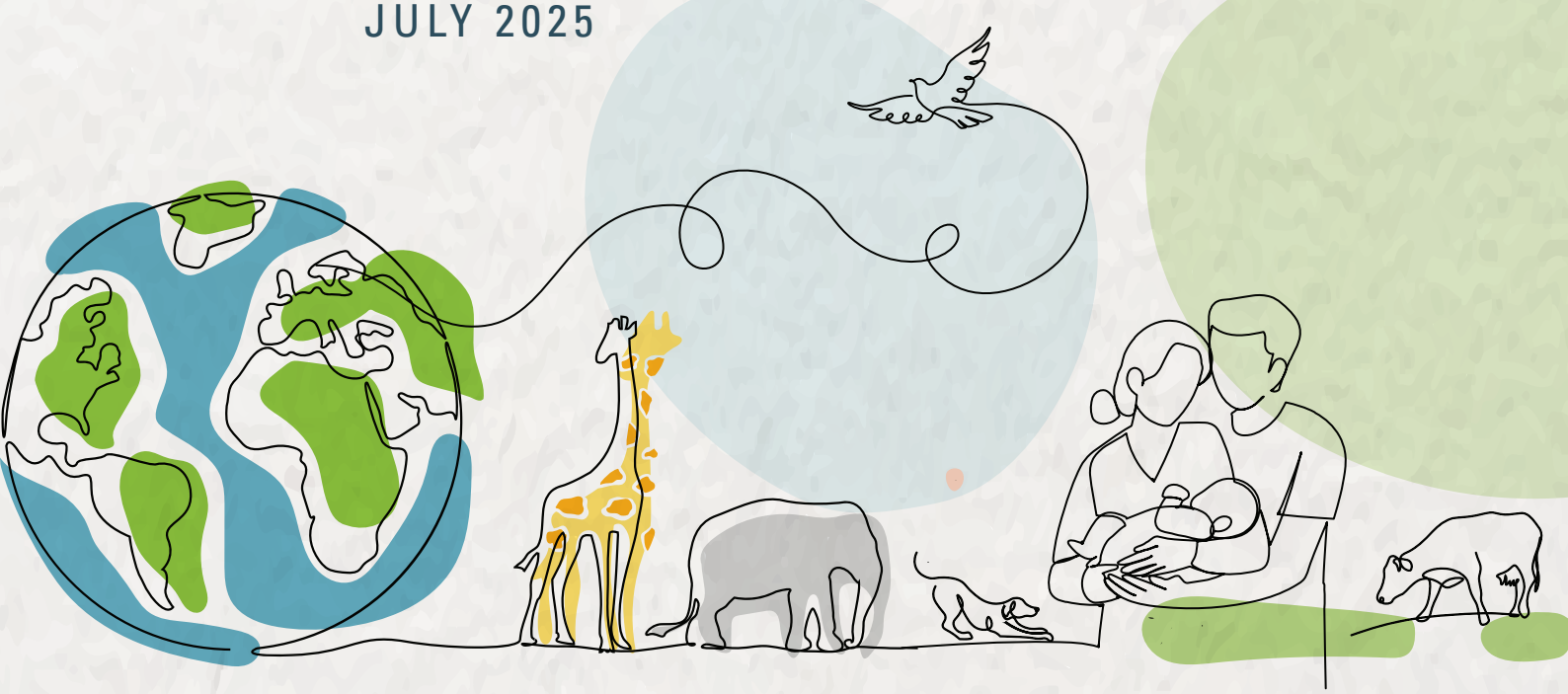
AfricaCDC
Centres for Disease Control and Prevention

Safeguarding Africa's Health

CLIMATE CHANGE AND HEALTH

STRATEGIC FRAMEWORK
JULY 2025



An entity of the African Union

ONE HEALTH APPROACH

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Africa CDC is a continental autonomous health agency of the African Union established to support public health initiatives of Member States and strengthen the capacity of their public health institutions to detect, prevent, control and respond quickly and effectively to disease threats.

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Safeguarding Africa's Health

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The development of the Africa CDC Climate Change and Health Strategic Framework has been a collaborative journey, enriched by the input and support of the individual experts, member states representatives, Africa CDC Divisions, Continental Partners and International Organizations dedicated to building climate-resilient health systems and communities across Africa.

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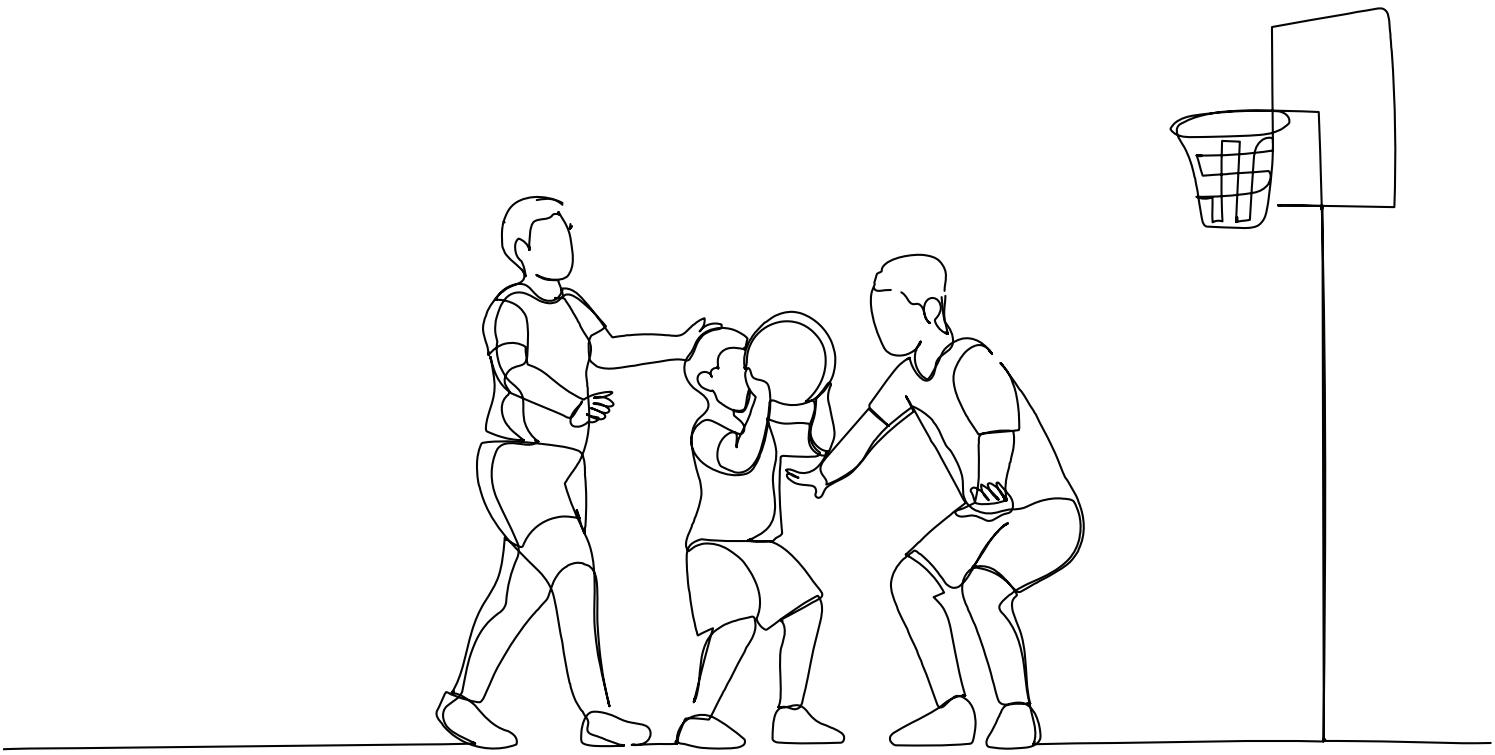
As we move forward, the success of this framework will rely on sustained cooperation, knowledge-sharing, and the dedication demonstrated by all involved. Africa CDC looks forward to fostering ongoing partnerships, utilizing the strategies and expertise shared to drive impactful change and build climate-resilient health systems across the continent.

Abbreviations/Acronyms

AAI	Africa Adaptation Initiative
AfDB	African Development Bank
AU	African Union
CCO	Continental Coordination Office
CDC	Centers for Disease Control and Prevention
COP	Conference of Parties
CSR	Corporate Social Responsibility
EbA	Ecosystem-Based Adaptation
EPR	Extended Producer Responsibility
EWARS	Early Warning Alert and Response Systems
EWS	Early Warning Systems
FAO	Food and Agriculture Organization of the United Nations
FCDO	Foreign, Commonwealth and Development Office
GCF	Green Climate Fund
GEF	Global Environment Facility
GHSA	Global Health Security Agenda
GIS	Geographic Information System
HNAPs	Health National Adaptation Plans
IEC	Information, Education, and Communication
IHR	International Health Regulations
IPCC	Intergovernmental Panel on Climate Change
IVM	Integrated Vector Management
KAP	Knowledge, Attitudes, and Practices
M&E	Monitoring and Evaluation
MDAs	Ministries, Departments and Agencies
MoAs	Memoranda of Agreement
MRV	Monitoring, Reporting and Verification
NAPs	National Adaptation Plans
NDCs	Nationally Determined Contributions
NGO	Nongovernmental Organization
NPHIs	National Public Health Institutes
NSCs	National Steering Committees
NTDs	Neglected Tropical Diseases
PACJA	Pan African Climate Justice Alliance
PHEIC	Public Health Emergency of International Concern
PPPs	Public-Private Partnerships
PTSD	Post-traumatic stress disorder

AAI	Africa Adaptation Initiative
RCCs	Regional Coordination Centers
SDGs	Sustainable Development Goals
SOPs	Standard Operating Procedures
TACH	Transformative Action on Climate and Health
TB	Tuberculosis
ToRs	Terms of Reference
ToT	Training of Trainers
TWGs	Technical Working Groups
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Education Fund
USAID	United States Agency for International Development
V&A	Vulnerability and Adaptation (V&A)
WASH	Water, Sanitation and Hygiene
WFP	World Food Programme
WHO	World Health Organization



Glossary

Carbon Credits: Tradable certificates or permits representing the right to emit one ton of carbon dioxide or an equivalent amount of other greenhouse gases.

Climate Adaptation: The process of adjusting to current or expected climate changes and their effects to minimize harm or exploit beneficial opportunities.

Climate-Health Nexus: The interconnectedness between climate change and public health outcomes, including disease transmission, food security, and other health impacts influenced by climate.

Climate Intelligence: The use of data, tools, and analysis to understand climate patterns and their implications for health, aiding in decision-making and policy formulation.

Climate Mitigation: Actions taken to reduce or prevent the emission of greenhouse gases to slow down global warming and its related effects.

Climate-Resilient Health Systems: Health systems capable of anticipating, responding to, and adapting to the impacts of climate change to minimize adverse health outcomes.

Cross-Sectoral Collaboration: Partnerships involving multiple sectors such as health, agriculture, water management, and technology to address the climate-health nexus effectively.

Early Warning Alert and Response Systems (EWARS): Systems developed to provide timely warnings and responses to public health risks, particularly those related to climate-sensitive diseases and extreme events.

Early Warning Systems (EWS): Systems that identify and communicate potential climate-related health threats to facilitate early action and response.

Ecosystem-Based Adaptation (EbA): The use of biodiversity and ecosystem services to help people adapt to the adverse effects of climate change.

Extended Producer Responsibility (EPR): A policy approach in which producers are given significant responsibility for the treatment or disposal of post-consumer products, including waste management and recycling.

Global Health Security Agenda (GHSA): An initiative to strengthen both global and national capacity to prevent, detect, and respond to infectious disease threats.

Green Climate Fund (GCF): A financial mechanism under the United Nations Framework Convention on Climate Change (UNFCCC) aimed at supporting developing countries in responding to climate change challenges.

Health National Adaptation Plans (HNAPs): Strategic plans developed by countries to integrate health considerations into national adaptation strategies to address the impacts of climate change.

Health Surveillance: Ongoing, systematic collection, analysis, and interpretation of health data essential for planning, implementation, and evaluation of public health practice.

Integrated Vector Management (IVM): A comprehensive approach to controlling disease vectors, such as mosquitoes, through environmental, biological, and chemical means.

Intergovernmental Panel on Climate Change (IPCC): The United Nations body responsible for assessing the science related to climate change and its potential environmental and socio-economic impacts.

Knowledge, Attitudes, and Practices (KAP) Surveys: Surveys conducted to assess community knowledge, attitudes, and practices regarding health risks and interventions, particularly those related to climate and health.

Member State Climate Change and Health Technical Working Groups: National-level committees responsible for implementing the Climate Change and Health Strategy Framework within their respective countries.

Nationally Determined Contributions (NDCs): Commitments made by countries under the Paris Agreement to reduce national emissions and adapt to the impacts of climate change.

National Climate-Health Funding: Financial resources allocated by governments specifically for addressing climate-related health challenges within national health systems.

One Health Approach: A collaborative effort across multiple disciplines working at the local, regional, national, and global levels to achieve optimal health outcomes by recognizing the connection between people, animals, plants, and their shared environment.

Public Health Emergency of International Concern (PHEIC): A formal declaration by the World Health Organization (WHO) of an extraordinary event posing a public health risk through the international spread of disease.

Public-Private Partnerships (PPPs): Collaborations between government and private sector entities aimed at financing, designing, implementing, and operating projects related to climate resilience in health.

Resilience Building Framework: A framework designed to strengthen communities and health systems to withstand and recover from the adverse impacts of climate change and health emergencies.

Resilient Health Infrastructure: Health facilities and systems designed to withstand, adapt, and respond to climate-related events and challenges, ensuring continuity of healthcare.

Sustainable Development Goals (SDGs): A set of 17 global goals adopted by the United Nations to address poverty, inequality, climate change, environmental degradation, peace, and justice by 2030.

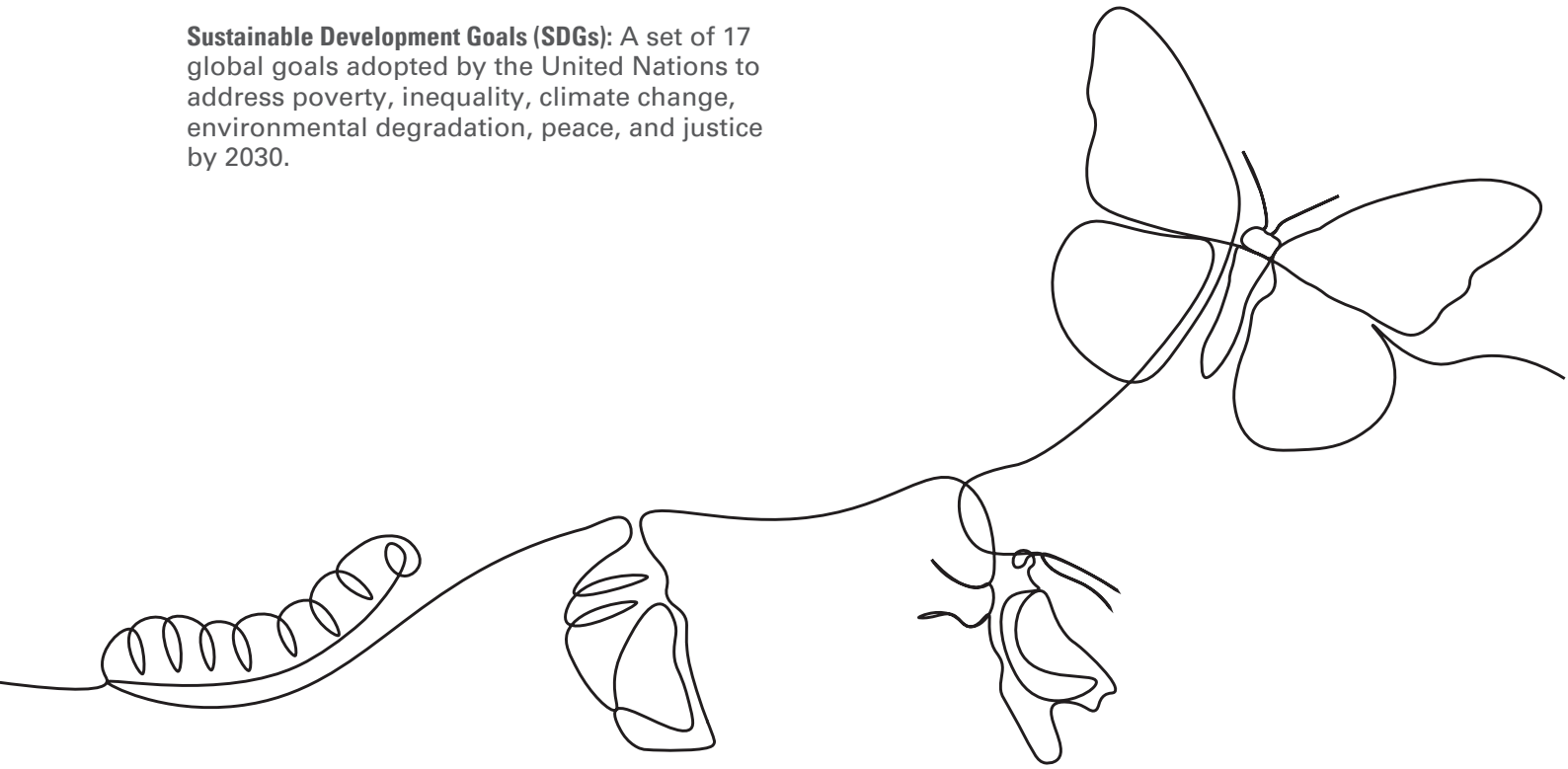
Stakeholder Engagement: The process of involving individuals, groups, or organizations that may affect or be affected by decisions related to climate-health initiatives.

Vector-Borne Diseases: Diseases transmitted to humans through vectors such as mosquitoes, ticks, or flies, including malaria, dengue, and Rift Valley fever.

Vulnerability: Vulnerability is the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity (IPCC, 2007 page 883)

Vulnerability and Adaptation (V&A) Assessments: Assessments used to evaluate populations affected by climate change and determine appropriate adaptation measures.

Water, Sanitation, and Hygiene (WASH): Programs focused on providing access to clean water, improved sanitation, and promoting hygiene to prevent waterborne diseases.



Foreword

Climate change is a global crisis with profound and far-reaching impacts on human well-being and the environment. It presents one of the most pressing public health challenges of our time with disproportionate impacts that are increasingly evident across the African continent. Globally, Climate change is projected to cause an additional 14.5 million deaths, over 2 billion healthy life years lost and $12.5 trillion in economic losses by 2050. In Africa, a review of the over 2,000 public health events between 2001 and 2021 indicates that 56% are linked to climate change. Extreme weather events, shifting disease patterns, food insecurity, and waterborne illnesses are intensifying, posing significant risks to the health and well-being of communities. It is against this backdrop that the Africa Centres for Disease Control and Prevention (Africa CDC) has developed the Strategic Framework for Climate Change and Health, a comprehensive roadmap designed to address the intersection of climate and health through coordinated, evidence-based actions.

This framework represents a pivotal step in the Africa CDC's mission to safeguard public health by fostering a unified approach across the continent for building climate-resilient health systems and communities. It emphasizes the critical need for robust institutional arrangements, drawing on Africa CDC's existing structures at the continental, regional, and national levels. By adopting a comprehensive approach that integrates a holistic measures, the inclusive framework ensures that every level of society, from policymakers to community members, is equipped to respond to climate-related health challenges.

Key to the success of this framework are the guiding principles it upholds, including the One Health Approach, Partnerships & Collaborations, Sustained Investment, Advanced Technology & Infrastructure, Community Engagement, Accountability & Transparency, and Equity & Inclusion. By focusing on these guiding principles, the strategy promotes resilience in health systems, enabling them to anticipate, adapt to, and mitigate the adverse health effects of climate change. Additionally, this framework addresses the need for strong institutional capacity, innovative financing mechanisms, technological adoption, collaborative partnerships, and political will within member states to drive tangible progress.

As we embark on implementing this Strategic Framework, we recognize the enormity of the task ahead. It will require commitment, cooperation, and a shared vision to enhance health security and climate resilience across Africa. By aligning our efforts and harnessing the diverse strengths and complementarities of our continental, regional, and national structures, we are poised to make meaningful strides in protecting the health of our people against the far-reaching impacts of climate change.

The journey towards climate resilience is complex and challenging, but with the right strategies, partnerships, and investments, Africa can build a future where health systems are robust, communities are empowered, and the health impacts of climate change are effectively managed. Africa CDC stands at the forefront of this critical mission, and we are confident that this Strategic Framework will serve as a vital tool in our collective endeavor to secure a healthier and more resilient continent for generations to come.

H.E Dr Jean Kaseya,
Director General
Africa Centres for Disease Control and Prevention (**Africa CDC**)

Executive Summary

The Africa Centres for Disease Control and Prevention (Africa CDC), a specialized health agency of the African Union (AU), is at the forefront of addressing the health impacts of climate change across Africa. Recognizing the intrinsic link between climate change and public health, Africa CDC has developed the "Climate Change and Health Strategic Framework" to guide AU Member States in enhancing climate resilience and mitigating health vulnerabilities. This strategic framework aims to strengthen health systems, improve disease surveillance, and foster sustainable public health outcomes that are resilient to climate change. By prioritizing climate vulnerabilities and adhering to key guiding principles, Africa CDC is positioned to lead a coordinated and strategic effort in addressing the climate-health nexus, contributing to the continent's overall climate resilience.

Purpose of the Framework

The framework establishes consistent, sustainable, and strategic approaches for integrating the climate and health nexus within the health initiatives of AU Member States. Its primary objective is to identify key initiatives requiring attention, implementation, and resolution related to climate and health. By adopting this framework, AU Member States can develop a unified perspective that allows for harmonized planning, resource allocation, and effective execution of climate and health initiatives. It also provides guidance in tackling Africa-specific challenges, including resource and infrastructure limitations, data and technological gaps, policy shortcomings, and the need for institutional strengthening and capacity building. The framework sets the foundation for effective climate-health interventions, aiming for improved public health outcomes across the continent.

Background

The "Background" section provides an overview of the climate-health nexus and outlines the mandate of Africa CDC in supporting member states to address climate-related health challenges. A situational analysis conducted by Africa CDC identified critical climate-health vulnerabilities affecting the continent. These findings form the foundation for the strategic priorities and interventions outlined in the framework.

Situational Analysis and Climate-Health Vulnerabilities in Africa

Climate change exacerbates public health challenges in Africa by altering disease patterns, threatening food security, and increasing the frequency of extreme weather events. Africa CDC conducted a comprehensive situational analysis and identified seven key climate-sensitive health risks including:

i. Vector-Borne and Zoonotic Diseases
ii. Waterborne Diseases
iii. Food and Nutrition Insecurity
iv. Airborne Diseases
v. Mental and Occupational Health
vi. Damage to Key Infrastructure
vii. Extreme Weather Events (Floods, cyclone, draught, and heat waves)

Based on factors such as public health impact, economic burden, feasibility of intervention, climate sensitivity, global health security, and alignment with international commitments,

Africa CDC strategically prioritized five key vulnerabilities to be addressed within this framework:

i. **Vector-Borne and Zoonotic Diseases:** Their increasing prevalence and severity pose a significant public health concern, necessitating immediate intervention.

ii. **Heat Waves and Extreme Temperatures:** These conditions, which are increasing in both frequency and magnitude, pose both immediate and long-term health risks, particularly for vulnerable populations, while exacerbating pre-existing health conditions.

iii. **Nutrition and Nutrition Insecurity:** Food insecurity significantly impacts health, especially among children, and is closely

related to climate-induced disruptions in agricultural productivity.

iv. **Waterborne Diseases:** Changes in rainfall patterns and insufficient water and sanitation infrastructure increase the prevalence of waterborne diseases, which are quite prevalent in Africa.

v. **Airborne Diseases:** Climate change affects air quality, influencing the spread and intensity of airborne diseases.

By focusing on these five critical areas, Africa CDC aims to optimize resource allocation and implement targeted interventions to build climate-resilient health systems across the continent.

Strategic Pillars and Interventions

The Climate Change and Health Strategic Framework is built around six key pillars to effectively address the prioritized vulnerabilities:

i. **Governance and Leadership:** Establish robust governance structures to promote the inclusion of health in nationally determined contributions (NDCs), foster multi-sectoral coordination, and enable international cooperation and advocacy.

ii. **Capacity Building:** Equip health professionals and stakeholders with the skills necessary to integrate climate considerations into health programs, including developing health national adaptation plans and establishing centers of excellence for climate and health.

iii. **Risk Communication and Community Engagement:** Develop comprehensive communication strategies to raise awareness, foster preventive measures, and ensure community-level engagement in climate-health initiatives.

iv. **Public Health Emergency and Disaster Response:** Strengthen early warning, alert and response systems (EWARS), build climate resilience within health systems, and support environmental health surveillance and capacity building for emergency response.

v. **Research, Innovation, and Data:** Enhance disease surveillance and monitoring of climate-sensitive health threats using innovative technologies and research partnerships, including community-based participatory research.

vi. **Innovative Financing:** Pursue sustainable financing mechanisms, such as exploring climate-health bonds, leveraging existing funding mechanisms, and establishing public-private partnerships, to ensure long-term climate-health resilience.

vii. **National Health Systems Strengthening:** Strengthen climate resilience in national health systems by improving climate-smart infrastructure, enhancing water, sanitation, and hygiene (WASH) systems, managing medical waste effectively, and stockpiling essential medical countermeasures such as vaccines, therapeutics, and diagnostics to respond to climate-related health emergencies.

Guiding Principles of the Framework

Implementation of the strategic framework is guided by key principles to ensure a comprehensive, inclusive, and sustainable approach:

i. **One Health Approach:** Integrating human, animal, and environmental health for holistic management of climate-related health challenges.

ii. **Communication and Community Engagement:** Engaging communities through enhanced risk communication strategies for sustainable public health outcomes.

iii. **Equity, Justice, and Inclusion:** Targeting interventions to reach all segments of the population, particularly vulnerable groups, to reduce health disparities and promote equity.

iv. **Country Ownership and Legal Frameworks:** Empowering countries to take ownership of policy implementation to create climate-resilient health systems.

v. **Preventative, Preparedness, and Response:** Fostering a proactive approach through early warning systems to ensure readiness against climate-health threats.

vi. **Partnerships and Collaborations:** Building cross-sectoral collaborations to address the multifaceted nature of climate-health issues.

Summary 5 year's Budget

Key Result Area / Pillar	Estimated Budget In USD	% of Total Budget
Governance and Leadership	44,112,500	9.14%
Capacity Building	68,820,000	14.26%
Risk Communication and Community Engagement	33,812,500	7.01%
Public Health Emergency and Disaster Response	121,500,000	25.18%
Research, Innovation and Data	45,250,000	9.38%
Innovative Financing	22,000,000	4.56%
Administration and Overhead Fees	43,549,500	9.03%
Africa CDC Climate change and Health Team	3,450,000	0.72%
National Health systems strengthening mechanisms	100,000,000	20.73%
TOTAL	**482,494,500**	**100.00%**

vii. **Accountability and Transparency:** Ensuring that duty bearers are accountable to the public by effectively implementing interventions as planned and in a timely and cost-effective manner.

viii. **Evidence-based initiatives:** Endeavoring to design and implement all interventions with strong evidence backing to maximize their positive impacts of health outcomes.

Institutional Arrangements, Coordination Mechanisms, and Enablers for the Strategic Framework

Implementation of the strategic framework involves a robust institutional arrangement, including a Steering Committee, Technical Working Groups (TWGs), Regional Coordination Centers (RCCs), and Climate Change and Health Technical Working Group. Effective coordination mechanisms will ensure that climate-health interventions are harmonized across regions while recognizing regional diversities, allowing for streamlined communication and policy alignment. The success of the framework relies on key enablers such as strong institutional capacity, effective financing mechanisms, technological innovation, respectful global and regional partnerships, and the political will and commitment of member states.

Implementation Plan and Costed Budget

The "Implementation Plan and Costed Budget" section outlines a series of initiatives under each strategic pillar, supported by a total budget of $482,494,500 to be sourced from African union member states, multilateral organization and partnerships, global climate funding mechanisms, donors and philanthropist and is spread across the five-year implementation period from 2025 to 2029. These funds will support activities related to governance and leadership; capacity building; risk communication & community engagement; public health emergency and disaster response; research, innovation, and data; and exploring innovative financing for climate-resilient health systems.

Monitoring and Evaluation

A comprehensive monitoring and evaluation framework will be implemented to track progress, engage stakeholders, and adapt strategies as necessary to align interventions with the framework's objectives, securing long-term success. The M&E framework will entail a series of briefing notes from member states, annual reports, mid-term, and final evaluations.

Mandate of the Africa CDC in climate and health nexus

The Africa CDC is a specialized technical institution of the African Union (AU). It was established in 2017 by African heads of states and government, with a mission to strengthen Africa's public health institutions' capacities, capabilities, and partnerships to detect and respond quickly and effectively to health threats and disease outbreaks.

The mandate of Africa CDC is stated in article 4 of its establishing statute. This is as follows:

i. The establishment of early warning and response surveillance platforms to address in a timely and effective manner all health emergencies.

ii. Supporting public health emergency preparedness and response.

iii. Assisting Member States in collaboration with WHO and other stakeholders to address gaps in International Health Regulations Compliance.

iv. Supporting and/or conducting regional and/or country-level hazard mapping and risk assessment for Member States

v. Supporting Member States in health emergencies response particularly those that have been declared PHEIC emergencies as well as the promotion and prevention of diseases through the strengthening of health systems, by addressing communicable and non-communicable diseases, environmental health, and Neglected Tropical Diseases (NTDs);

vi. Promoting partnership and collaboration among Member States to address emerging and endemic diseases and public health emergencies.

vii. Harmonizing disease control and prevention policies and the surveillance systems of Member States; and

viii. Supporting Member States in public health capacity building through medium- and long-term field epidemiological and laboratory training programmes.

Through its mandate, the ultimate goal of the Africa CDC aims to strengthen the capacity of health systems and communities in member states, including building resilience to climate change. Africa CDC delivers its mandate through scientific evidence and data-driven interventions and programmes. Further, and pursuant to its mandate, Africa CDC occasionally adopts frameworks and publishes guidelines, manuals, and outbreak briefs to inform and support Member States in addressing various public health challenges.

Africa CDC has the mandate to develop guidance documents that national institutions and Ministries of Health in AU member states can adopt. Such guidance documents contain a minimal set of goals, objectives, and activities to support implementation of the guidance document. Furthermore, the guidance documents should include mechanisms demonstrating how Africa CDC will support AU member states in implementation of various health initiatives. This strategic framework is aimed to meet this mandate by providing guidance on building climate-resilient health systems at the national, regional and continental levels.

1. Background

Climate change and the associated extreme weather events are some of the greatest threats to global health. According to the World Health Organization, climate change is anticipated to cause 250,000 additional deaths annually from malnutrition, malaria, diarrhea, and heat stress. Surprisingly, this highly climate-sensitive sector has not received considerable attention in international climate discourse, and health had always missed climate negotiations until the 26th session of the Conference of Parties (COP26) to the United Nations Framework Convention on Climate Change (UNFCCC) in 2021. The African continent is one of the regions that are highly vulnerable to climate-induced health risks, with 56% of the 2,121 public health events recorded in the 2001-2021 period attributable to climate change (WHO, 2024). As climate change rages on, so are a wide range of climate-related health vulnerabilities. According to the Intergovernmental Panel on Climate Change, vulnerability is defined as the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity (IPCC, 2007 page 883). Climate-induced health vulnerabilities are more prevalent in Africa, despite the continent's minimal contribution to greenhouse gas emissions that induce global warming. It exacerbates existing public health challenges and introduces new threats through the alteration of disease vectors, disruption of food supplies, and increased frequency of natural disasters. These changes have profound implications for public health and require a focused and strategic response.

The development of climate-resilience health systems in Africa is severely hampered by several constraints including but not limited to: inadequate technical capacities and insufficient scientific evidence; weak multisectoral collaboration and coordination; weak understanding and ownership of climate change and health rationale in political circles; weak consideration of health in climate negotiations; and inadequate financial resources (WHO, 2024). At member state level, health has received minimal consideration in National Adaptation Plans (NAPs), Nationally Determined Contributions (NDCs) and other climate-related policies and initiatives. This calls for concerted effort by member states, regional and international bodies to embark on comprehensive strategies meant to augment the technical and institutional capacities with an overarching goal of enhancing the climate resilience of health systems on the continent. This resonates with global commitments such as the Sustainable Development Goals (SDGs), specifically SDG 3 on Good Health and Wellbeing, and SDG13 on Climate Action.

The Africa Centers for Disease Control and Prevention (Africa CDC), a specialized agency of the *African Union (AU)*, plays a crucial role in strengthening public health systems across the continent. As part of its mandate, Africa CDC develops guidance documents that national institutions and Ministries of Health in AU member states can adopt. Such guidance documents contain a minimal set of goals, objectives, and activities to support implementation of the guidance document. Furthermore, the guidance documents should include mechanisms demonstrating how Africa CDC will support AU member states in implementation of various health initiatives. As climate change continues to pose significant risks to health security worldwide, Africa CDC has embarked on the development of a continental climate and health strategic framework to prioritize its response to *climate-related health vulnerabilities*. This initiative is vital in addressing the dual challenges of emerging health threats and climate vulnerability, which are of paramount importance given the continent's diverse climatic and socio-economic landscape.

While the climate-related health risks faced by African member states are both diverse and complex, the continental climate and health strategy sets out to prioritize a manageable set of them to ensure focused and impactful interventions. This focused approach allows for more targeted allocation of resources, enhanced capacity building, and improved implementation of strategic interventions that are tailored to the specific needs of various

regions, member states and groups of people across the continent.

The framework will provide time-specific goals and activities to be undertaken during the period of five years of its implementation aimed at meeting the specific goals laid out in the framework. This strategic framework is aimed at.

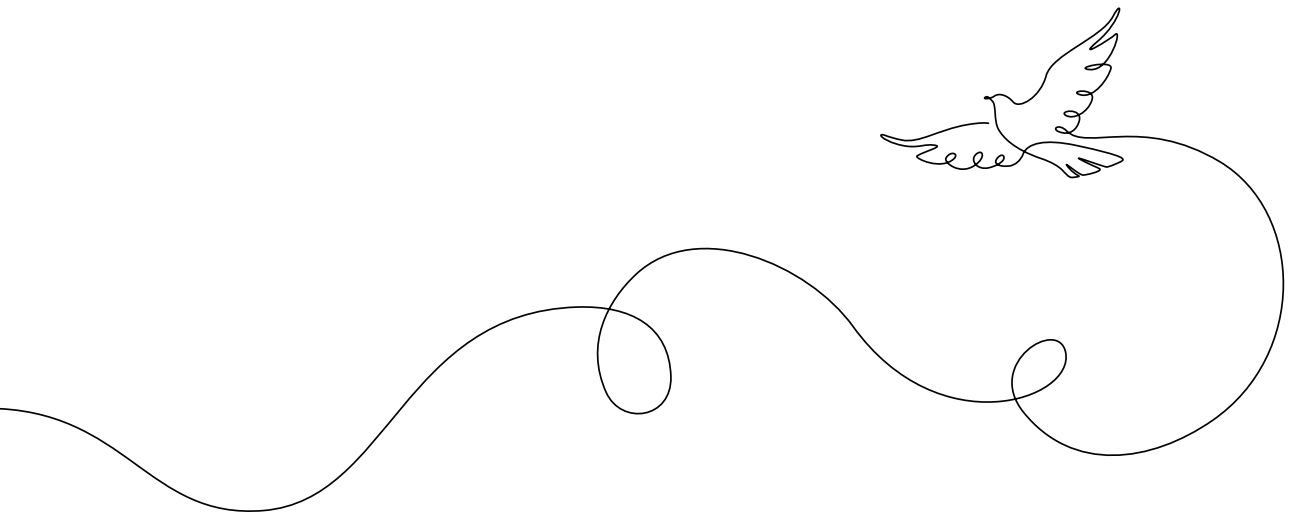
i. Guiding and supporting member states to develop and implement national climate and health strategies, policies, and action plans for building climate resilient health systems and communities. This entails providing insights and considerations upon which Member States should base their national action plans and strategies, considering that countries are at distinct stages of conceptualizing and developing their own national action plans.

ii. Providing clear actions by Africa CDC in supporting member states in implementing the continental framework.

iii. Establish baseline information on climate-change nexus, particularly through vulnerability and adaptation (V&A) assessment to identify climate-related health risks.

iv. Establishing a monitoring and evaluation system that should be engrained in the framework so that member states can assess the pace of implementation of their initiatives as well as this framework.

It is worth noting that member states will be expected to use this strategic framework as an inspiration and a guiding document to help them produce their own strategies on climate and health nexus. Africa CDC has a mandate to support member states to develop their climate and health strategies considering their most urgent climate-induced public health needs.



2. Methodology

This section elaborates the methodology used by the Africa CDC in developing this strategic framework, providing the rationale, and sequencing of the different steps and considerations taken to ensure a comprehensive framework. A participatory approach was used to ensure that the views and insights of various stakeholders and experts were highly reflected. The choice of participatory approach is motivated by its power to design effective policies and initiatives with tangible positive results for intended beneficiaries (Jaramillo and Wright, 2015). The development of the strategic framework gave consideration to enhancing not only stakeholder participation but also upholding the principles of ownership, accountability and sustainability at local, national, regional and continental levels. Overall, the methodology used involved a comprehensive, multisectoral, and evidence-based approach to first understand the climate-health vulnerabilities before embarking on prioritizing interventions to address them. The multi-step methodology entailed logically sequenced activities from literature review to data analysis, stakeholder mapping and consultation, expert convening and member state validation.

Literature Review

The development of the continental climate and health strategic framework began with a comprehensive desk review of various reports, policy documents, and scientific literature to identify key themes, trends, patterns, and gaps related to climate change and health in Africa. This review focused on understanding the climate-health nexus in Africa with an emphasis on climate-induced health vulnerabilities, identifying effective intervention strategies, the resilience of health systems to climate impacts, and the outcomes of previous responses to similar health challenges. Existing climate-health initiatives were assessed to identify best practices as those that have been implemented to considerable scales with notable positive outcomes as highlighted in policy evaluations and reports from member states. Additionally, as part of the review exercise, a comprehensive gap analysis was conducted to assess existing strategies, identify limitations, and formulate targeted recommendations for interventions such as policy reforms and capacity-building initiatives. The literature review included studies from various institutions and recent case studies from Africa that highlight successful interventions. These findings helped contextualize the subsequent data analysis within the broader climate and health landscape, ensuring that the development of the strategic framework was grounded in both empirical evidence and contemporary theoretical frameworks.

Stakeholder mapping and consultations

To refine the strategic framework, Africa CDC engaged in a stakeholder mapping followed by extensive consultations with relevant stakeholders including government institutions, international organizations, private sector, academia, and NGOs across Africa. Specifically, discussions were held with health experts, policymakers, community leaders, international health agencies, and regional bodies. Purposive and snowball sampling techniques were used to identify stakeholders to be consulted, leveraging Africa CDC's network and targeting organizations and individuals with knowledge, interest, expertise, and authority in the climate-health nexus. Consultations provided qualitative insights into the practical aspects of addressing climate-related health issues, including interventions and alignment with ongoing initiatives. Stakeholder input was particularly valuable in assessing the regional differences in vulnerability and strategic pillars and their applicability for the specific needs of member states and Africa CDC.

Data Analysis

A mixed-methods approach was adopted by the strategic framework, combining analysis of quantitative data from secondary sources with qualitative data from stakeholder consultations. The two approaches combined gave a strong base for the strategic framework development and helped to adequately evaluate the current and projected impacts of climate change on health vulnerabilities across Africa, drivers of vulnerability, constraints, and priorities to build climate-resilient health

systems. The quantitative analysis exercise was based on epidemiological data, climate models, and health outcome projections sourced from peer-reviewed journals, global health databases, and reports from international health organizations such as the World Health Organization (WHO) and the Intergovernmental Panel on Climate Change (IPCC). Quantitative data analysis techniques were applied to assess the severity, geographical distribution, and temporal trends of each vulnerability. This step identified the health vulnerabilities most likely to escalate due to climate change, necessitating prioritized interventions to counteract the potential threats. The data also aided in evaluating the feasibility of interventions and the potential for broad public health benefits, ensuring that resources are allocated where they can have the most significant impact. For qualitative analysis, a thematic approach was adopted, grouping responses and insights from stakeholders into similar themes used to contextualize existing challenges and priorities.

Expert convening

The convening of experts formed an essential part of the methodology, aimed at bringing together multidisciplinary experts to deliberate on the key health impacts of climate change and propose recommendations. This process involved organizing thematic workshops, roundtable discussions, and focus groups with experts from climate science, public health, agriculture, water management, and policy. The experts were selected based on geographical balance - ensuring representation across the five AU regions, expertise - to cover all the contextually identified themes on climate change and health in Africa and availability - to attend the initial drafting workshop and later review and finalization workshop to finalize the draft. The experts contributed their specialized knowledge and experience to inform the development of evidence-based, practical solutions. The convening also facilitated peer review of the findings, ensuring consensus among experts on the prioritized vulnerabilities. The experts were selected purposively, where formal and informal networks within member states, regional and continental-level organizations – including Africa CDC – helped to identify individuals with expertise in and knowledge of climate change, health, and other related sectors such as agriculture, education, and environment.

Selection of priorities / scope

The integration of data analysis, literature review, experts' input, and stakeholder consultation ensured a balanced and comprehensive approach to developing the strategic priorities for the climate and health nexus. This strategic framework adopts the definition of climate vulnerability as provided by the Intergovernmental Panel on Climate Change. Vulnerability is therefore defined as the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity (IPCC, 2007 page 883). This broad definition encompasses not only dynamics of climate-sensitive infectious diseases but also suitability of healthcare facilities and other components of health systems to climate change. A situational analysis was conducted to identify climate-induced health vulnerabilities including mental and occupational health risks, damage to key infrastructure, vector-borne and zoonotic diseases, food and nutritional insecurity, water-borne diseases, air quality-related illnesses, illnesses related to heat waves and extreme temperatures, among others. This strategy, however, narrowed its focus and scope to a manageable set of vulnerabilities to be prioritized, an exercise that was done systematically using the following criteria.

i. **Public Health Impact**: The extent to which vulnerability affected population health, including morbidity, mortality, and overall well-being.

ii. **Economic Burden:** The potential economic consequences of not addressing the vulnerability, such as increased healthcare costs, loss of productivity, and impacts on livelihoods.

iii. **Feasibility of Intervention:** The practicality of implementing interventions to address vulnerability, including the availability of resources, existing infrastructure, and capacity for action.

iv. **Climate Sensitivity:** The degree to which the health outcome was sensitive to climate variability and change, highlighting the urgency of intervention.

v. **Global Health Security Implications:** The potential for the vulnerability to impact global health security, including risks of cross-border disease transmission.

vi. **Alignment with International Commitments and Goals:** Consideration of how addressing vulnerability aligned with international frameworks, such as the Sustainable Development Goals (SDGs) and the Paris Agreement.

vii. **Political Will:** This is a crucial criterion that reflects the level of commitment and readiness of African governments to tackle climate-related health challenges. The presence or absence of political will significantly influences the formulation and implementation of policies, regulations, and strategic interventions across member states. For each vulnerability that was assessed, political will was gauged from the extent of existing policy commitment viewed from either budgetary allocations or initiatives and campaigns within member states to address the respective risks.

Based on the assessment criteria, each vulnerability was scored to determine its priority. The scoring process involved input from both experts and stakeholders, ensuring that the evaluation was comprehensive and balanced. Vulnerabilities were ranked according to their scores, with those posing the greatest risk and requiring the most urgent intervention placed at the top of the list. This process resulted in five key vulnerabilities being selected for prioritization: vector-borne diseases, waterborne diseases, food and nutrition insecurity, air quality related illnesses, and heat related illnesses. The draft list of prioritized vulnerabilities was then subjected to a validation process involving further expert review and stakeholder consultations. This step aimed to build consensus on the prioritization and ensure that no critical areas were overlooked. The validation process also provided an opportunity to incorporate additional data and adjust the rankings based on new insights or changing circumstances. The final prioritization focused on key health vulnerabilities and was matched with potential interventions, and strategic priorities were developed to guide planning and resource allocation.

Member states validation

To validate the strategic framework, a member states validation process was conducted to ensure that the developed strategies aligned with the needs and priorities of each country. This involved organizing consultative workshops with representatives from member states, where they reviewed and provided feedback on the proposed framework. This step guaranteed that the strategy was practical, actionable, and reflective of the diverse health and climate needs across the continent. The final prioritization of the key vulnerabilities was also presented for review, allowing for any necessary adjustments based on the perspectives of member states.

This comprehensive methodological framework provides a solid and robust foundation for Africa CDC to develop and implement a strategic framework that effectively addresses climate-related health vulnerabilities across its member states. It ensures resilience and sustainability by equipping health systems to anticipate, prepare for, and effectively respond to ongoing and future climate-induced health challenges, while fostering long-term adaptive capacity and cross-sectoral collaboration.

Overall, the findings of the desk review, stakeholder consultations, data analysis, expert convening and member state validation were synthesized and triangulated to inform the development of evidence-based strategic pillars and interventions meant to enhance climate resilience of health systems in Africa. Insights from stakeholder consultations, gap analysis, and best practices helped to ensure alignment of the Continental Climate Change and Health Strategy with the African Union's broader objectives as well as other relevant global commitments on the climate-health nexus. An implementation plan and monitoring and evaluation framework were developed to guide implementation and track progress made at member state, regional and continental levels. The framework was refined through validation workshops with stakeholders, and the finalized version sets forth clear objectives, actionable initiatives, a resource mobilization plan, and a robust monitoring and evaluation framework to guide coordinated action on climate-health challenges across the continent.

3. Situational Analysis and Guiding Principles

3.1. Introduction

This chapter sets the foundation for Africa CDC's strategic framework on climate change and health. The situational analysis's purpose was to provide a comprehensive assessment of the current state of climate-related health issues across Africa. This evaluation offers insights into the diverse health vulnerabilities faced by the continent and serves as the basis for prioritizing key areas that require strategic intervention. By understanding the scope, severity, and distribution of climate-related health issues, Africa CDC will be able to effectively allocate resources, strengthen health systems, and develop targeted responses that address the most pressing concerns.

Following this analysis, a set of guiding principles is introduced to establish the strategic direction for the framework. These principles outline the values, considerations, and methodologies that will inform and shape the framework's implementation. They provide a lens through which the situational analysis is interpreted, ensuring that the response is comprehensive, inclusive, and aligned with global health strategies. By grounding the strategic framework in these guiding principles, Africa CDC aims to foster a holistic, equitable, and sustainable approach to managing the health impacts of climate change.

The connection between the situational analysis and the guiding principles is crucial. The analysis identifies the key vulnerabilities and challenges, while the guiding principles ensure that the response to these vulnerabilities is driven by evidence, addresses equity, integrates community engagement, and supports member states' ownership and leadership. Together, they create a roadmap that not only responds to the current climate-health nexus but also establishes a foundation for resilience and adaptability in the face of future climate challenges.

3.2. The Nexus Between Climate Change and Health in Africa

Climate change is increasingly recognized as one of the most significant threats to public health, particularly in Africa, where socioeconomic and environmental vulnerabilities intensify its impact. The 2023 Synthesis Report by the Intergovernmental Panel on Climate Change (IPCC) underscores that climate change poses a clear threat to human well-being and planetary health. It warns that further delays in global action will diminish the opportunity to secure a sustainable future for all (IPCC, 2023). This implies urgent need to view climate change as a crucial determinant of public health, especially in the African context.

The World Health Organization (WHO), in its 2021 report released during CoP26, described climate change as "the single biggest health threat facing humanity." The report further emphasized that the health impacts of climate change disproportionately affect vulnerable populations (WHO, 2021). These impacts include both direct effects, such as injuries and death from extreme weather events, and indirect effects, like the spread of infectious diseases, food insecurity, and mental health challenges. According to projections by WHO, four climate-induced health risks alone are anticipated to cause 250,000 additional deaths globally between 2030 and 2050. The risks are malnutrition, malaria, diarrhea and heat stress. Climate-induced health damages are predicted to range between US$ 2–4 billion per year by 2030. A systematic review study highlighted three most cited health risks associated with climate change: infectious diseases, mortality and cardiovascular and neurological outcomes (Rocque et al., 2021). In Africa, these impacts exacerbate existing health vulnerabilities, imposing additional strain on already fragile health systems. The burden on the population is amplified by the weak or low coverage of public health insurance schemes, implying huge out-of-pocket expenses in the event of climate-induced health risks.

Eight major climate-sensitive health risks that pose significant threats to the continent's health security have been identified:

i. *Vector-Borne and Zoonotic Diseases*
ii. *Waterborne Diseases*
iii. *Food and Nutrition Insecurity*
iv. *Airborne Diseases*
v. *Mental and Occupational Health Issues*
vi. *Damage to Key Infrastructure*
vii. *Antimicrobial ResistanceExtreme Weather Events (Floods, cyclones, draught, and Heat Waves)*

Gaps in Current Health Systems and Responses

Several key gaps hinder Africa's ability to address climate-health challenges effectively. The gaps need to be addressed to reduce climate change's impact on public health systems.

i. **Policy and Governance Gaps**: Many African countries do not have the necessary policy frameworks and legal structures to effectively integrate climate considerations into health systems. For example, a review by the African Union Commission (2022) found that only 35% of African nations have national climate policies that include health as a priority area. This policy gap hampers the alignment of national strategies with continental and global climate-health initiatives.

ii. **Limited Health System Capacity**: African health systems often lack the capacity to manage the increased burden of climate-induced health threats. For example, while the density of health work force – doctors, nurses, midwives, dentists and pharmacists – increased from 11.14 to 26.82 per 10,000 people between 2013 and 2022, it is still low relative to global average (World Bank, 2024). For low-income African countries, the density is even lower, average 10 health workers per 10,000 people. This shortage of healthcare professionals hampers the ability to provide adequate disease surveillance, preparedness and emergency response, and treatment, especially in remote or rural areas.

iii. **Disproportionate Vulnerability**: The health impacts of climate change are particularly severe for vulnerable populations, including women, children, and those living in poverty. The World Food Programme (WFP) reported that in 2020, 60% of the world's hungry people lived in areas affected by climate change (WFP, 2021). In sub-Saharan Africa, extreme weather events have led to a 40% increase in food insecurity, directly affecting nutritional outcomes and health, particularly among children under five (FAO, 2022).

iv. **Inadequate Data and Surveillance**: Effective monitoring and early warning systems are critical for managing climate-related health risks. However, the lack of comprehensive data collection in Africa limits the ability to predict, prevent, prepare for, and respond to climate-sensitive health issues. Only 14% of sub-Saharan African countries have fully functional health surveillance systems capable of integrating climate-related health data (WHO, 2020). This gap makes it difficult to assess real-time health risks and implement timely interventions.

v. **Lack of Cross-Sectoral Integration**: Addressing climate-health challenges requires coordination across sectors, including health, agriculture, environment, infrastructure, among others. However, only 20% of African countries have an integrated policy framework that links climate action with health outcomes (United Nations Environment Programme, 2021). This fragmentation limits the effectiveness of interventions and highlights the need for multi-sectoral engagement in policy formulation and implementation. While climate-related health challenges are interlinked, existing efforts are often reactive and sector-specific, lacking a comprehensive approach. A study by the African Development Bank (2022) noted that over 80% of health sector interventions in African countries are not integrated with climate adaptation strategies, limiting their overall impact. This points to the urgent need for an integrated action plan that addresses both health adaptation and mitigation strategies. It is a matter of policy importance therefore, to importance of multi-sector collaboration to leverage health co-benefits in Africa, partly through strengthening skills of human resources and streamlining institutional structures (Wright et al., 2024).

vi. **Insufficient Community Engagement**: Community-level understanding and participation in addressing climate-health risks are often limited. For example, a survey conducted by UNICEF in Eastern and Southern Africa found that only 30% of community members were aware of climate-related health risks and how to mitigate them (UNICEF, 2021). This lack of awareness underscores the importance of effective risk communication strategies that empower local communities to act and contribute to building resilience.

vii. **Funding and Resource Constraints**: Financial limitations significantly affect the ability of African nations to address climate-related health vulnerabilities. The African Development Bank (AfDB) estimates that African countries need an annual investment of $7-15 billion by 2030 to build climate-resilient health systems (AfDB, 2022). However, current funding levels fall far short of this requirement, resulting in inadequate infrastructure, limited research, and insufficient resources for effective interventions. Among other consequences, inadequate funding implies limited investment in climate-resilient health infrastructure including climate-proofed buildings and advanced power power-up, cooling and other systems. This in turn results in low capacity of health facilities and systems to effectively handle climate-related health emergencies.

Focusing on the Prioritized Vulnerabilities

The identified gaps in healthcare systems in Africa make them highly susceptible to climate-related vulnerabilities, calling for comprehensive and well-packaged initiatives. In response to this call for action, the framework is strategically prioritizing five critical climate-sensitive health risks:

i. *Vector-Borne and Zoonotic Diseases*
ii. *Waterborne Diseases*
iii. *Heat Waves and Extreme Temperatures*
iv. *Nutrition (Food Security)*
v. *Airborne Diseases*

The prioritization was guided by considerations like the threat's severity, feasibility of interventions, potential for building health system resilience, and alignment with continental and global health strategies. While all seven vulnerabilities are worth policy attention, prioritization of these five vulnerabilities is meant to optimize resource allocation, create a targeted response, and establish a strong and focused foundation for building climate-resilient health systems.

3.3. Guiding Principles to the Strategic Framework

Climate change impacts on health in Africa results to several gaps and vulnerabilities, including weaknesses in health systems, disparities in health outcomes, limited capacity for effective climate adaptation, and the general lack of comprehensive, integrated approaches to health and climate change. To address these gaps and guide the development of the strategic framework, there is need to establish key guiding principles designed to foster effective, inclusive, and sustainable interventions. The guiding principles includes.

i. One Health Approach

Africa faces significant challenges in managing climate-sensitive diseases, particularly those that bridge human, animal, and environmental health (e.g., zoonotic diseases and vector-borne illnesses). Fragmented efforts in addressing these issues have been observed, with a lack of coordination between health, agriculture, and environmental sectors. Climate change alters ecosystems, affects vector habitats, and increases the risk of disease spillover from animals to humans. The One Health Approach emphasizes the interconnectedness of human, animal, and environmental health, urging for collaborative, cross-sectoral action to tackle climate-sensitive health risks. By integrating efforts across various health sectors, this principle aims to bridge the identified gaps, promoting a more comprehensive strategy for disease prevention and control. Moving forward, adopting the One Health Approach within the strategic framework ensures that interventions will be holistic, effectively reducing the spread of zoonotic and vector-borne diseases in the context of a changing climate. This integrated approach is vital

to managing complex health challenges, fostering collaboration between the ministries of health, agriculture, environment, and other stakeholders. The goal of the One Health Approach will be to enhance the climate-resilience of health systems in Africa by leveraging joint efforts among diverse stakeholders working on human, animal, and plant health as well as the shared environment.

ii. Risk Communication and Community Engagement

Many African communities limited awareness of the health impacts of climate change and have limited access to accurate information that would enhance their informed action. Existing communication strategies are often top-down, failing to engage communities or consider local knowledge and practices. This gap results in low public participation in climate-health initiatives, poor adoption of preventive measures, and heightened vulnerability to health threats. Communication & Community Engagement focuses on actively involving communities in climate-health interventions, recognizing their role as key agents of change. By tailoring risk communication strategies that incorporate indigenous knowledge and respect cultural contexts, this principle aims to enhance public understanding and encourage grassroots participation in health initiatives. Moving forward, this principle under the strategic framework will promote more effective implementation of health interventions, fostering trust, and building local resilience. The development and implementation of community-based adaptation strategies with direct participation of communities will strengthen community ownership of initiatives and directly addresses the situational gap of limited public engagement, ensuring that health messages are more accessible, understood, and acted upon.

iii. Equity, Justice & Inclusion

Climate-related events often induce disparities in health outcomes, with marginalized and vulnerable groups (e.g., women, children, the elderly, and rural populations) disproportionately affected. Many interventions to date have failed to adequately target these groups or address the social determinants of health that exacerbate climate-induced health inequities. The Equity, Justice & Inclusion principle is essential for addressing these disparities, ensuring that interventions are designed to reach and benefit all segments of the population. This principle therefore emphasizes the importance of targeted interventions for vulnerable groups, reducing health inequalities, and promoting inclusive public health practices. Moving forward, integrating this principle into the strategic framework means prioritizing equitable access to health services, focusing on tailored interventions, and advocating for social justice in climate-health strategies. This approach directly responds to the gaps identified, aiming to protect those who are most at risk and fostering a more inclusive health system.

iv. Country Ownership/Leadership/Legal Framework

African countries face challenges in effective policy implementation, enforcement, and resource mobilization related to climate and health. Additionally, there is a gap in the integration of climate considerations into national health strategies due to limited national ownership and insufficient legal frameworks, weak institutional and human resource capacities. The Country Ownership/Leadership/Legal Framework principle promotes the empowerment of member states to lead and own their climate-health agendas. This approach emphasizes the importance of developing robust legal and policy frameworks that support climate-resilient health systems. By fostering country ownership, the strategic framework will ensure that member states are actively engaged in implementing policies, allocating resources, and building regulatory environments conducive to health adaptation to climate change. While addressing the gaps identified in the situational analysis, this principle ensures that health strategies are locally relevant, context-specific, and sustainable in the long term, enabling countries to build resilience at the national level.

v. Preventative, Preparedness & Response

A key finding of the situational analysis is the lack of preparedness for climate-sensitive health threats, including disease outbreaks, extreme weather events, and

food insecurity. Health systems in many African countries are reactive rather than proactive, often overwhelmed during crises due to inadequate early warning systems and limited resources. The Preventative, Preparedness & Response principle aims to shift the focus towards proactive measures, ensuring health systems are equipped to anticipate, prevent, and appropriately respond to climate-induced health risks. Disaster risk reduction and recovery will be integrated with health planning to ensure a comprehensive approach in adequately addressing climate-related health emergencies. By fostering early warning systems, conducting regular risk assessments, and building emergency response capacities, this principle ensures health systems are resilient and capable of mitigating adverse health outcomes. Incorporating this principle into the strategic framework addresses the identified gaps by enhancing preparedness, enabling timely interventions, and reducing the human and economic toll of climate-related health crises.

vi. Partnerships & Collaborations

The fragmented nature of climate and health initiatives, with limited cross-sectoral collaboration and resource-sharing among various stakeholders is another critical hinderance to building climate-resilient health systems in Africa. Addressing the multifaceted impacts of climate change on health requires cooperation across multiple sectors, including health, environment, agriculture, finance, and education. Partnerships & collaborations is a guiding principle that encourages building and strengthening cross-sector partnerships to address complex and multidimensional climate-health challenges. By fostering collaboration between governments, NGOs, academic institutions, international organizations, and the private sector, this principle aims to create a unified front to tackle climate-related health risks leveraging complementarities among the diverse stakeholders. Integrating this principle into the strategic framework will enhance resource mobilization, knowledge sharing, and coordinated responses, directly addressing the gaps in fragmented efforts. It will also promote comprehensive solutions that are multifaceted and sustainable, ensuring interventions are more effective and far-reaching.

Incorporating these guiding principles into the strategic framework ensures a holistic, inclusive, and effective approach to tackling climate-related health challenges in Africa. These principles are crafted to directly address the gaps and vulnerabilities identified in the situational analysis, laying the groundwork for a coordinated response that strengthens health systems, builds resilience, and improves health outcomes across the continent.

vii. Evidence-based initiatives

The strategic framework recognizes the crucial role of research and evidence in the design and effective implementation of impactful initiatives. The development of climate-health interventions will greatly leverage existing data and knowledge and invest in capacities and systems to strengthen the generation of new evidence to inform interventions. From development of predictive disease models to surveillance of co-movements between climate variables and climate-sensitive diseases and the development of cross-sectoral data generation and sharing platforms, the overarching goal of the strategy will be to ensure that all initiatives at local, national, regional and continental levels are designed and implemented based on credible scientific evidence.

viii. Accountability and Transparency

Across all levels, from local to national, regional, and continental, accountability and transparency will guide the implementation of interventions under the strategic framework. The principle will be observed in two dimensions effectively keeping track of planned milestones and financial allocations and making these publicly available for the public and other interested stakeholders to keep abreast of the frameworks' Overall, the accountability and transparency guiding principle will ensure that duty bearers are accountable to the public by effectively implementing interventions as planned and in a timely and cost-effective manner.

3.4. Global and African Initiatives on Climate Change and Health

In addressing the health impacts of climate change in Africa, Africa CDC recognizes the importance of aligning its strategic framework with global and regional initiatives. This alignment not only ensures a coordinated approach to tackling climate-health challenges but also helps to bridge the gaps identified in the situational analysis. By leveraging established global agreements and regional strategies, Africa CDC aims to build a well-informed, robust, resilient health framework tailored to the continent's unique needs.

3.4.1. Alignment with Global Frameworks

To guide the development of its strategic framework, Africa CDC integrates principles and strategies from key global frameworks, ensuring that its initiatives are rooted in best practices and international standards:

- **Paris Agreement:** Africa CDC supports member states in developing climate-resilient health systems that incorporate health considerations into national climate policies. By promoting region-specific adaptation strategies, Africa CDC fills the gap of integrating health into national climate agendas, in line with its guiding principle of a One Health approach. This alignment enables countries to prioritize health outcomes while addressing climate change, thus building a foundation for Africa's health resilience. In turn, climate-resilient health systems would minimize greenhouse gas emissions from the health sector, contributing to the global target of keeping global warming to way below 1.5°C. Indeed, the Paris Agreement recognizes that addressing climate change is fundamental to observing the right to human health (United Nations, 2015).
- **Sendai Framework for Disaster Risk Reduction:** Africa CDC is currently building the capacity of member states to manage climate-related health crises, such as disease outbreaks and natural disasters. The strategic framework will further integrate disaster risk reduction strategies into national health systems, strengthening emergency preparedness and aligning with the guiding principle of "Preventative, Preparedness, and Response." This approach addresses gaps in the ability of African health systems to anticipate and respond effectively to climate-induced emergencies. This aligns with the Sendai Framework that emphasizes addressing the three major dimensions of disaster: exposure to hazards, vulnerability & capacity, and characteristics of hazards.
- **WHO Climate Change and Health Program:** Africa CDC collaborates with WHO to implement interventions for climate-sensitive diseases, focusing on research and capacity building. The strategic framework aims to expand these partnerships to enhance surveillance and early warning systems, filling current gaps in data collection and research capacities. This aligns with the guiding principle of "Research, Innovation, and Data," ensuring that Africa CDC's actions are informed by evidence-based practices.
- **Sustainable Development Goals:** The strategic framework complements and builds on Agenda 2030 and associated Sustainable Development Goals, particularly by addressing challenges to quality health care (SDG 3) while responding to the impending climate crisis (SDG 13) through targeted interventions meant to build the climate resilience of health systems in Africa. Additionally, by attempting to address climate-health issues with emphasis on marginalized people, the strategic framework responds to the call in SDG 3 to enhance equitable access to healthcare services, ultimately contributing to reducing overall inequalities (SDG 10).

3.4.2. Africa-Specific Initiatives

Africa CDC's strategic framework is designed to resonate with the continent's regional climate and health initiatives, facilitating a harmonized, continent-wide approach:

- **African Union's Agenda 2063:** The strategic framework integrates health and climate strategies into national policies, aligning with Agenda 2063's vision of a prosperous, climate-resilient Africa. Africa CDC will work with regional communities to implement reforms that strengthen health systems, addressing the gap of fragmented health and climate policies across member states. This supports the guiding principle of " **Country Ownership and Legal Frameworks**."

- **Africa Health Strategy (2016-2030):** Currently, Africa CDC focuses on building member states' capacities for disease surveillance and emergency response. The strategic framework will expand on these efforts, guiding member states in developing robust policies to manage climate-related health impacts effectively. This initiative addresses gaps in policy integration and aligns with the guiding principle of " **Country Ownership and Legal Frameworks**."
- **Africa Adaptation Initiative (AAI):** Africa CDC contributes data to the AAI to guide health adaptation strategies. Moving forward, the strategic framework will leverage AAI's platform to secure resources and scale up climate-resilient interventions. This action directly addresses the funding gaps identified in the situational analysis and aligns with the principle of "Innovative Financing."
- **Pan-African Partnerships:** Africa CDC collaborates with organizations like the Pan African Climate Justice Alliance (PACJA) to advocate for integrating climate and health policies. The strategic framework will strengthen these partnerships, promoting climate-resilient health policies and securing climate finance. This collaborative approach addresses gaps in stakeholder engagement and aligns with the principles of "Partnerships and Collaborations" and "Community Engagement."
- **WHO Framework for Building Climate-Resilient and Sustainable Health Systems in the WHO Africa Region 2024-2033:** At COP26, Parties to the Paris Agreement were urged to initiate climate-resilient health initiatives. In line with this call, WHO supports member states to integrate climate considerations in health programs, through the Alliance for Transformative Action on Climate and Health (ATACH). At the regional level, the recently established WHO framework on climate change and health for Africa sets various targets including 90% of Member States having integrated health indicators in their NDCs by 2028 (WHO, 2024). Africa CDC also intends to use this strategic framework to build institutional and technical capacities of member states in Africa to appropriately manage the interconnectedness of climate change and health.

3.4.3. Future Collaborative Directions

The strategic framework will further enhance Africa CDC's climate-health agenda by building upon these initiatives and fostering regional coordination:

- **Regional Coordination:** Africa CDC will enhance its coordination with regional communities to develop a unified, continent-wide climate-health strategy. This collaboration aims to create a cohesive approach across member states, filling the gaps in fragmented regional responses identified during the situational analysis.
- **Resource Mobilization:** Africa CDC will advocate for increased international and regional investments in climate-health interventions. By working with mechanisms like the Green Climate Fund, the framework will address existing financial gaps, ensuring that resources are available for implementing climate-resilient health systems. This aligns with the guiding principle of "Innovative Financing."
- **Monitoring and Evaluation:** To ensure the strategic framework remains effective and relevant, Africa CDC will establish robust monitoring systems to track progress, refine strategies, and ensure alignment with global and regional goals. This focus on adaptability directly addresses gaps in long-term climate-health planning and aligns with the guiding principles of "Monitoring and Evaluation."

3.5. Climate-related Health Vulnerabilities in Africa

The impact of climate change on health in Africa is multifaceted, creating a complex web of vulnerabilities that threaten the continent's health security and development. Africa CDC's comprehensive situational analysis highlights the need to address these challenges systematically, given Africa's unique socio-economic and environmental context. This analysis identified seven key climate-related health vulnerabilities, each posing significant threats to health outcomes across the continent. Addressing these vulnerabilities is crucial for developing a strategic framework that strengthens health systems, enhances climate resilience, and mitigates adverse health impacts.

Climate-Induced Health Vulnerabilities

3.5.1. Evaluation of 8 Climate-Induced Health Vulnerabilities

This subsection presents the key climate-health vulnerabilities that were identified during situational analysis as having profound implications for the resilience of health systems in Africa. These include vector-borne and zoonotic diseases, water-borne diseases, food and nutrition insecurity, airborne diseases, mental and occupational health issues, damage to key infrastructure, and heat waves and extreme temperatures.

i. Vector-Borne and Zoonotic Diseases

Vector-borne diseases like malaria, dengue, and Zika continue to impose a substantial health burden in Africa, particularly in tropical and subtropical regions. Climate change exacerbates this burden by influencing disease vector habitats, breeding patterns, and transmission dynamics. For instance, changing rainfall patterns and rising temperatures create favorable conditions for mosquito populations to thrive, extending the transmission seasons and expanding their geographic range to previously low-risk areas. In Rwanda, a 2023 Ministry of Health report noted an increase in malaria transmission in high-altitude regions where the disease was previously uncommon. There is also empirical evidence that highlights observed and/or projected increases in the incidence of malaria and other mosquito-borne diseases due to climate change, particularly in highland areas (Giesen et al., 2020; Tozan et al., 2021).

Additionally, zoonotic diseases such as Ebola, Rift Valley fever, and mpox present a growing threat, as climate-induced changes in ecosystems and human-animal interactions facilitate the spread of pathogens. This underscores a critical gap in cross-sectoral collaboration and surveillance systems capable of addressing the nexus between human, animal, and environmental health. Without targeted interventions, these diseases could overwhelm already stretched health systems, particularly in regions with limited healthcare infrastructure and resources.

ii. Waterborne Diseases

Waterborne diseases remain a significant public health challenge in regions with inadequate water, sanitation, and hygiene (WASH) infrastructure. Climate change aggravates this vulnerability by disrupting water supply systems and promoting the proliferation of pathogens. Extreme weather events, such as floods and droughts, compromise water quality and availability, leading to outbreaks of diseases like cholera, dysentery, and typhoid fever. For example, the Democratic Republic of Congo reported over 30,000 cases of cholera in 2021, attributed to flooding and inadequate sanitation facilities. An empirical study on 40 Sub-Saharan African countries found cholera outbreaks to be higher during flood episodes relative to flood-free periods (Rieckmann et al., 2018). The flood-water-borne-disease link happens through several mechanisms, including contamination of water sources by running water especially

during erratic rainfall periods. Microbial contamination of water has also been cited as a key driver of water-borne diseases during periods of prolonged drought in Africa (Asmall et al., 2021). According to UNICEF Kenya, waterborne diseases account for 15% of child mortality in the country, indicating the scale of the threat and the gap in WASH services that must be bridged.

Interventions in this area require multi-sectoral approaches, integrating water management, sanitation improvement, health education, and disease surveillance. A significant gap lies in the absence of robust national frameworks for water quality monitoring and emergency preparedness, which are vital for mitigating the health impacts of climate-induced water scarcity and contamination.

iii. Food and nutrition insecurity

Food security is a critical determinant of health, and climate change significantly threatens food production and nutritional outcomes in Africa. Climate-induced reductions in agricultural productivity due to increased frequency of droughts, floods, and changing pest populations pose severe risks to food availability, access, utilization and stability. The Food and Agriculture Organization of the United Nations (FAO) estimates that climate change could result in a 20-30% decline in crop yields in sub-Saharan Africa by 2050, placing millions at risk of hunger and malnutrition.

This vulnerability extends beyond immediate food shortages, contributing to long-term health issues such as stunting in children, weakened immune systems, and decreased labor productivity. Current gaps in addressing food security include limited access to climate-resilient agricultural practices, insufficient policy frameworks for food system adaptation, and lack of integration between health and agriculture sectors. These gaps underscore the need for a strategic framework that fosters food system resilience and ensures adequate nutritional outcomes for vulnerable populations.

iv. Airborne Diseases

Airborne diseases, including tuberculosis (TB), and respiratory infections, are increasingly linked to climate change factors such as air pollution, dust storms, and changing weather patterns. Rising temperatures and urbanization contribute to the deterioration of air quality, resulting in higher rates of respiratory illnesses. According to the Lancet Countdown on Health and Climate Change, climate-related air pollution accounts for approximately 7 million premature deaths globally each year, with a significant impact on African cities.

The absence of robust air quality monitoring systems, coupled with limited public awareness of the health impacts of air pollution, presents a critical gap in addressing this vulnerability. Additionally, there is a need to integrate climate considerations into health policies, urban planning, and public health interventions to mitigate the adverse health effects of air pollution.

v. Mental and Occupational Health Issues

The mental health implications of climate change are often underreported, yet they have profound effects on communities. Increased psychosocial stress resulting from displacement, loss of livelihoods, and trauma associated with extreme weather events contributes to mental health conditions, including anxiety, depression, and post-traumatic stress disorder (PTSD). Furthermore, rising temperatures and extreme weather events pose occupational health risks, particularly for outdoor workers, affecting labor productivity and economic stability.

Current gaps in this area include lack of mental health services integrated into climate response strategies and limited research on the occupational health impacts of climate change. Addressing these gaps requires the development of mental health support programs and the incorporation of occupational health considerations into national climate action plans.

vi. Damage to Key Infrastructure

Climate change significantly threatens critical health infrastructure, such as hospitals, clinics, and water supply systems. Extreme weather events can disrupt healthcare delivery, compromise electricity and water supplies, and hinder access to essential services. For example, during the 2020 floods in Sudan, numerous health facilities were damaged or became inaccessible, severely affecting healthcare provision.

The gap in this area lies in the limited capacity of many countries to climate-proof health infrastructure, ensuring that it can withstand extreme weather events and continue providing services during and after disasters. This highlights the need for investments in climate-resilient infrastructure and the development of guidelines for health facility construction and maintenance.

vii. Heat Waves and Extreme Temperatures

Heat waves and extreme temperatures directly threaten human health, causing dehydration, heat exhaustion, heatstroke, and exacerbation of existing conditions such as cardiovascular, respiratory diseases, and heat-related deaths. Episodes of extreme heat have also been associated with increased likelihood of mental illness, miscarriage, and psychological issues especially for outdoor workers in Africa (Kunda et al., 2024). Vulnerable groups, including the elderly, children, and those with pre-existing health conditions, and outdoor workers are at a higher risk of heat-related illnesses. In 2019, South Africa's National Department of Health reported a 20% increase in emergency cases related to heat stress during a severe heatwave.

A key gap in addressing this vulnerability is the lack of early warning systems, public health advisories, and community education programs that help populations adapt to rising temperatures. The absence of heat-health action plans across most African countries emphasizes the need for proactive climate-health strategies focusing on extreme temperature events.

There is also a critical need to link climate variables and health data to better understand the association between heat and specific health outcomes and to feed into climate and health models.

viii. Antimicrobial Resistance

Antimicrobial resistance is becoming an increasingly global crisis, directly responsible for 1.2 million deaths globally, contributing to 4.95 million deaths, and projected to cause 39 million deaths between 2024 and 2050, according to estimates by Oxford University. According to Usman Qamar and Aatika (2023), AMR is exacerbated by climate change through creation of idea conditions for the proliferation microbial infections, increased bacterial growth rates, and emergence and re-emergence of pathogens. The Global Leadership Group on Antimicrobial Resistance (GLGAMR) elaborates several pathways through which climate change influences antimicrobial resistance (GLGAMR, 2024). These are: i) affecting infectious disease patterns and exacerbating existing health issues, leading to increased use of microbial drugs and ultimately antimicrobial resistance; ii) damaging key infrastructure and increasing the likelihood of development and spread of drug-resistant infectious diseases; iii) altering the natural environment and increasing the likelihood of development and spread of antimicrobial resistant microbes; and iv) increasing pressure on global food systems, necessitating the use of antimicrobial drugs in food production to meet the global food demand. Africa is particularly vulnerable to climate-induced antimicrobial resistance that results compromises the ability to treat infections effectively, thereby increasing complications, hospitalizations, and unnecessary costs to healthcare (Asweto and Onyango, 2023).

3.5.2. Selection Criteria Overview

The prioritization of climate-related health challenges by Africa CDC involves a comprehensive and strategic approach, designed to identify the most critical areas that demand immediate attention. This selection process is crucial in guiding resource allocation, policy development, and focused interventions within the strategic framework. By employing a set of specific criteria, Africa CDC ensures that the strategic framework is data-driven, targeted, and aligned with continental and global health objectives. The criteria used to evaluate and select the top vulnerabilities include:

i. Public Health Impact

The foremost criterion focuses on the direct implications of climate-related health risks on morbidity and mortality across Africa. Africa CDC assesses the severity and frequency of health outcomes, particularly for vulnerable populations such as children, the elderly, and those in low-income communities. Data from the World Health Organization (WHO), African health ministries, and public health institutes are used to measure the scale of impact. By

prioritizing health issues with the highest rates of illness and death, the framework directs efforts toward interventions that can significantly improve health outcomes and enhance overall population resilience.

ii. Economic Burden

Climate-related health challenges pose significant economic strains on African countries, affecting both national economies and individual livelihoods, often worsened by the general lack of public health insurance schemes in many African countries. This criterion evaluates the direct healthcare costs (treatment, hospitalization, medication) and indirect costs (lost productivity, workforce depletion) resulting from climate-related health issues. Utilizing data from institutions like the African Development Bank (AfDB) and regional economic studies, Africa CDC examines the financial burden on governments, communities, and households. By focusing on health vulnerabilities that cause substantial economic disruption, the strategic framework aims to direct resources toward interventions that can significantly alleviate these economic pressures, fostering sustainable development.

iii. Feasibility of Intervention

This criterion addresses the practicality and potential impact of proposed interventions to mitigate specific health risks. Africa CDC evaluates the availability, scalability, and cost-effectiveness of interventions, such as public health campaigns, vaccination programs, infrastructure improvements, and policy reforms. The assessment considers best practices from African countries that have successfully implemented climate-health strategies, ensuring that selected interventions are adaptable to diverse contexts across the continent. Emphasizing feasible and evidence-based interventions that draw on lessons from across the continent helps optimize resource use, accelerate implementation, and ensure measurable health outcomes.

iv. Climate Sensitivity

The climate sensitivity criterion examines the extent to which climatic changes, such as temperature fluctuations, rainfall variability, and extreme weather events, affect the prevalence and severity of various health issues. Prioritizing health challenges extremely sensitive to climate change, such as vector-borne diseases (e.g., malaria) or heat-related illnesses, allows the Africa CDC to address the most urgent risks exacerbated by changing climate patterns. This criterion is informed by data from the Intergovernmental Panel on Climate Change (IPCC) and regional climate studies, enabling the strategic framework to tailor interventions that are responsive to the dynamic climate-health nexus.

v. Global Health Security

In a highly interconnected world, climate-related health challenges in Africa can have far-reaching implications, affecting global populations. This criterion assesses the potential of health threats to cross borders and require international responses. It aligns with the Global Health Security Agenda (GHSA) and WHO's International Health Regulations (IHR) to evaluate the impact of climate change on global health security. By prioritizing vulnerabilities that pose substantial risks to global health, Africa CDC ensures that the strategic framework supports coordinated global efforts to mitigate climate-related health threats, reinforcing both regional and global health security.

vi. International Commitments and Goals

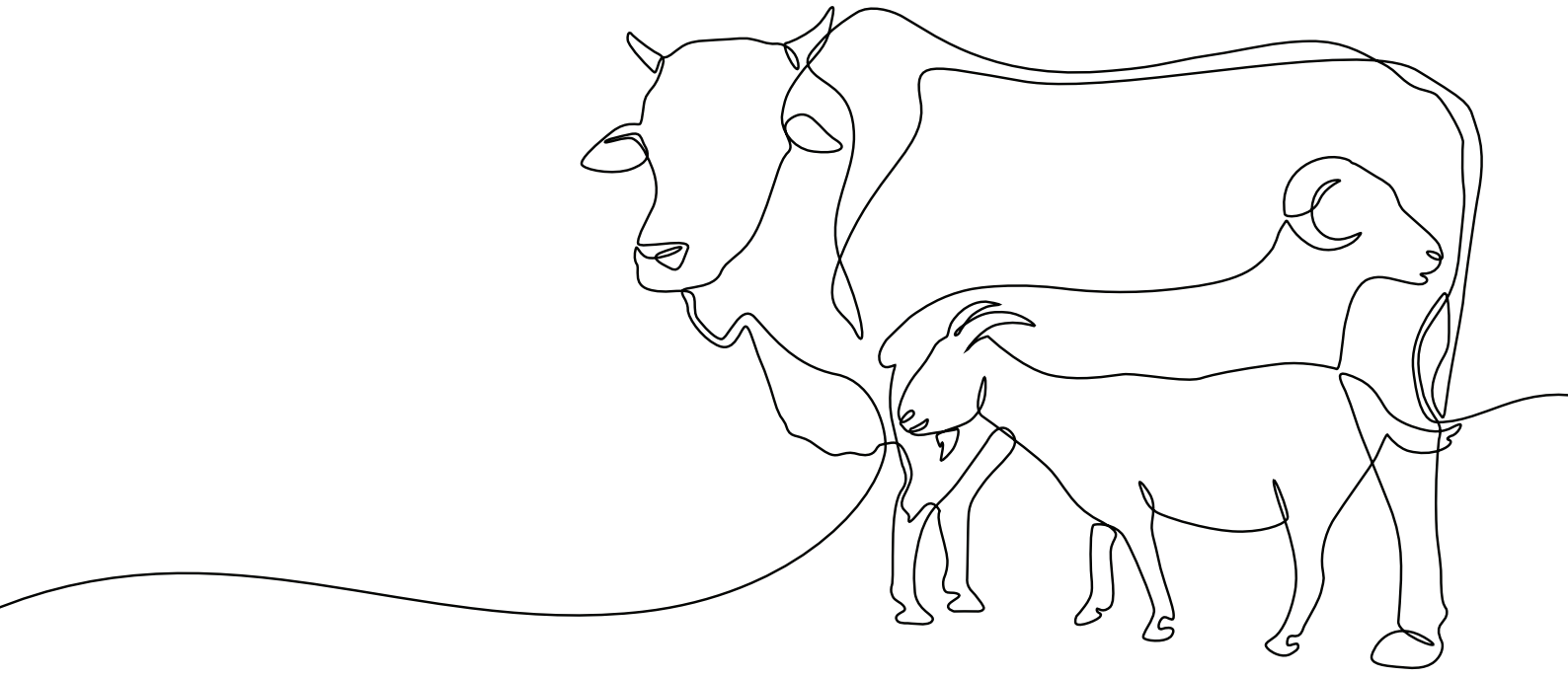
The selection process also considers alignment with key international frameworks, such as the United Nations Sustainable Development Goals (SDGs) and the African Union's Agenda 2063. This criterion emphasizes health challenges that receive support through international and continental initiatives, enhancing the feasibility of large-scale interventions. By aligning with global commitments, Africa CDC positions the strategic framework within a broader context, leveraging international support, knowledge exchange, funding, and expertise to address climate-health vulnerabilities comprehensively.

vii. Political Will

This is a crucial criterion that reflects the level of commitment, willingness and

readiness of African governments to tackle climate-related health challenges. The presence or absence of political will significantly influences the formulation and implementation of policies, regulations, and strategic interventions across member states. By prioritizing health vulnerabilities that are more likely to gain political support, Africa CDC aims to foster a conducive environment for policy adoption, resource mobilization, and cross-sectoral collaboration. The strategic framework recognizes that political will can accelerate the integration of climate considerations into national health agendas, ensure sustained funding, and drive legislative actions for climate resilience. Furthermore, understanding the varying degrees of political commitment among member states allows the framework to tailor strategies, engage stakeholders effectively, and advocate for policies that align with both national priorities and continental objectives. By embedding political will into the selection process, Africa CDC ensures that interventions are not only technically feasible but also supported at the highest levels of government, thereby enhancing the likelihood of successful and lasting impact.

By applying these criteria, Africa CDC strategically prioritizes health vulnerabilities that not only present the greatest risks but also offer the most promising avenues for intervention. This targeted approach ensures that the strategic framework can effectively guide policy, resource allocation, and capacity-building efforts across the continent, addressing gaps identified in the situational analysis and moving toward a climate-resilient health future.



3.5.4. Justification for Prioritizing the 5 Climate-Induced Health Vulnerabilities

Prioritized Vulnerabilities

Vector-Borne and Zoonotic Diseases

Public Health Impact: Diseases like malaria, dengue, and Zika are significant contributors to disease burdens across Africa, particularly in tropical and subtropical regions. For instance, globally, malaria causes over 200 million deaths every year, with a substantial portion in sub-Saharan Africa. Countries like Uganda experience a high rate of hospital admissions and outpatient visits due to malaria, affecting overall public health significantly.

Economic Burden: The economic toll of vector-borne diseases is profound, leading to both direct healthcare costs and indirect costs such as loss of workforce productivity. Nigeria spends approximately $2.4 billion annually on malaria treatment and prevention, making it one of the highest economic burdens among African countries. With the current trend of climate change, the burden could increase as changing temperatures could alter the suitability of malaria-causing mosquitoes especially in highland areas.

Climate Sensitivity: The transmission of vector-borne diseases is extremely sensitive to climatic factors like temperature and precipitation. Changes in these variables have led to increased incidence of malaria and other diseases in previously low-risk areas, such as in Rwanda. This underscores the need for climate-adaptive health measures.

Feasibility of Intervention: Proven interventions like insecticide-treated nets, indoor residual spraying, and malaria vaccines (e.g., RTSS) have demonstrated success across various countries, such as a 45% reduction in malaria prevalence in Tanzania. These control measures are effective, scalable, and adaptable in many African countries with similar context.

Global Health Security: Vector-borne diseases have the potential to spread across borders, making their control critical not only for Africa but for global health security. Coordinating efforts to mitigate these diseases aligns with international health security initiatives, preventing their spread to non-endemic regions.

International Commitments and Goals: Addressing vector-borne diseases aligns with global frameworks like the Sustainable Development Goal (SDG) 3 on health and well-being, as well as WHO's targets to reduce the burden of neglected tropical diseases. Additionally, building climate-resilient health systems is in line with SDG 13 that emphasizes climate action across sectors. Africa CDC's strategic

prioritization will support these international commitments and enhance regional disease control efforts.

Political Will: Due to the substantial burden on health systems and economic productivity, there is strong government and NGO support for addressing vector-borne diseases. Political momentum is further driven by the necessity for national and regional responses to disease outbreaks. The fact that many African countries have undertaken initiatives and campaigns to eradicate vector-borne diseases, particularly malaria, is indicative of their potential commitment to implementing climate-resilient health interventions.

Food and Nutrition Insecurity

Public Health Impact: Nutrition and food security are critical health determinants, particularly in regions with persistent food shortages. In the Sahel region alone, nearly 30 million people face food insecurity, significantly affecting child development and public health resilience. Malnutrition leads to increased morbidity and mortality rates, with children and pregnant women being the most vulnerable. Climate change also compromises food safety, for example by altering fungal strain distribution leading to mycotoxin contamination in maize (Nji et al., 2022). This necessitates integrated measures to build resilience of food systems as a way of ameliorating food-related health risks induced by climate change.

Economic Burden: Food insecurity has direct economic consequences on agricultural productivity and overall economic growth. Interventions that focus on enhancing food security through climate-resilient farming systems such as irrigation and sustainable farming have demonstrated dual benefits, such as improved health and increased local incomes in Senegal.

Climate Sensitivity: Food security and nutrition are highly susceptible to climate variability, as changes in weather patterns, droughts, and floods can significantly reduce agricultural yields. The FAO estimates that sub-Saharan Africa could experience a 20-30% decline in crop yields by 2050, elevating food insecurity and associated health risks.

Feasibility of Intervention: Effective interventions like food fortification, supplementary feeding programs, and community-based nutrition education have been successfully scaled up in various African countries. For instance, Rwanda's national nutrition program effectively reduced rates of stunting among children. This could be feasibly replicated in other African countries

Global Health Security: Food security is a critical component of overall health and stability, with implications for migration and conflict. Addressing nutrition within the strategic framework not only targets local health but also contributes to regional and global security.

International Commitments and Goals: Prioritizing nutrition is in line with SDG 2 (Zero Hunger) and the WHO's global nutrition targets, highlighting Africa CDC's role in supporting global efforts to combat malnutrition.

Political Will: Nutrition is directly tied to food security, and consequently, there is substantial political attention and funding dedicated to addressing this issue at both national and regional levels. Governments prioritize nutrition as part of their broader food security policies, emphasizing its role in development agendas.

Airborne Diseases

Public Health Impact: Airborne diseases, including tuberculosis (TB), continue to be significant public health challenges in Africa, particularly in densely populated urban areas. Africa accounts for 25% of global TB cases, with high morbidity and mortality rates. Countries like South Africa face a major burden of TB-related deaths, impacting health systems extensively.

Economic Burden: The economic cost of managing airborne diseases is substantial. TB management in Ethiopia, for example, costs approximately $8.1 million annually. These diseases also have indirect costs on productivity and healthcare resources, particularly in urban settings with rising air pollution.

Climate Sensitivity: Climate change influences factors like air quality, temperature, and

humidity, which in turn affect the transmission of respiratory diseases. Increasing air pollution levels in regions like West Africa contribute to higher incidences of respiratory illnesses and NCDs.

Feasibility of Intervention: Effective interventions exist for controlling airborne diseases, such as active case detection, long-term antibiotic treatment, vaccination programs, and public health education on respiratory hygiene. Kenya's TB program achieved a 20% reduction in incidence, demonstrating the effectiveness of such interventions.

Global Health Security: The rapid cross-border transmission of airborne diseases makes them significant global health threats. Africa CDC's focus on this vulnerability supports WHO's strategies to strengthen preparedness and response, contributing to both regional and international health security.

International Commitments and Goals: This focus aligns with SDG 3 and WHO's End TB Strategy, underscoring the need to improve access to prevention, treatment, and support services.

Political Will: Urbanization trends in Africa have brought air quality concerns to the forefront of policy discussions. There is growing policy interest and political will to address air pollution and respiratory health, driven by urbanization, industrialization, and increasing public awareness.

Heat Waves and Extreme Temperatures

Public Health Impact: Heat waves and extreme temperatures pose immediate and long-term health risks. Prolonged exposure to elevated temperatures leads to heat stress, heatstroke, and worsens chronic health conditions such as cardiovascular and respiratory diseases. Urban regions across Africa face increased heat related health risks due to the urban heat island (UHI) effect and public health systems that are under strain due to rising population numbers linked to urbanization.

Economic Burden: Heat waves affect economic productivity by disrupting workforce capacity, particularly among outdoor workers. They also increase healthcare costs as the demand for emergency services spikes during extreme heat events. Temperature extremes, especially during prolonged droughts, are associated with severe declines in agricultural productivity, leading to food insecurity, income loss and malnutrition especially among communities that practice rain-fed smallholder farming. The economic consequences are particularly severe in regions that are reliant on rain-fed agriculture and lack climate-resilient infrastructure.

Climate Sensitivity: Heat waves are highly climate-sensitive, with rising global temperatures contributing to their increased frequency and severity. Regions like Northern Africa and the Sahel face extreme summer temperatures, necessitating interventions like heat warning systems, urban greening, and sustainable water management to minimize the associated health risks.

Feasibility of Control: Early warning systems, public health advisories, community cooling centers, and adaptation of urban infrastructure are practical interventions to mitigate the health impacts of heat waves and extreme temperatures. Tunisia's public cooling shelters and heatwave alert systems led to a 30% reduction in heat-related hospital admissions, an initiative that could feasibly be implemented in other African countries, given commitment and capacity.

Global Health Security: Extreme heat events have implications for global health security by disrupting public health systems and infrastructure, affecting food and water supplies, and contributing to forced migration. Proactive measures to address heat waves contribute to regional stability and align with international adaptation efforts.

International Commitments and Goals: This priority aligns with SDG 13 (Climate Action) and international frameworks like the Paris Agreement, which calls for join action to contain global warming within the 1.5^0C limit. Health-centered climate adaptation strategies guided by international best practices and commitments enhance Africa CDC's efforts to promote resilient health systems.

Political Will: Governments are increasingly incorporating climate considerations into health action plans, and there is strong political will at both national and international levels to address the effects of extreme heat on health as part of broader climate adaptation initiatives.

Waterborne Diseases

Public Health Impact: Waterborne diseases like diarrhea, cholera, dysentery, and typhoid fever are pervasive in regions with inadequate sanitation and water quality. In the Democratic Republic of Congo, cholera remains a persistent threat, with over 30,000 cases reported in 2021. These diseases significantly impact vulnerable populations, particularly in disaster-prone regions.

Economic Burden: Waterborne diseases strain healthcare systems and lead to lost productivity, particularly in countries with inadequate water and sanitation infrastructure. The costs associated with these diseases often exceed the resources available for effective management and prevention.
Climate Sensitivity: The prevalence of waterborne diseases is closely tied to climate variability, with changing rainfall patterns, flooding, and droughts affecting water availability and quality. An empirical study found that 77% of the variations in the occurrence of diarrhea in Sub-Saharan Africa is attributed to climatic differences (Kemajou, 2022). Mozambique faces seasonal cholera outbreaks due to flooding, underscoring the need for robust climate-health interventions.

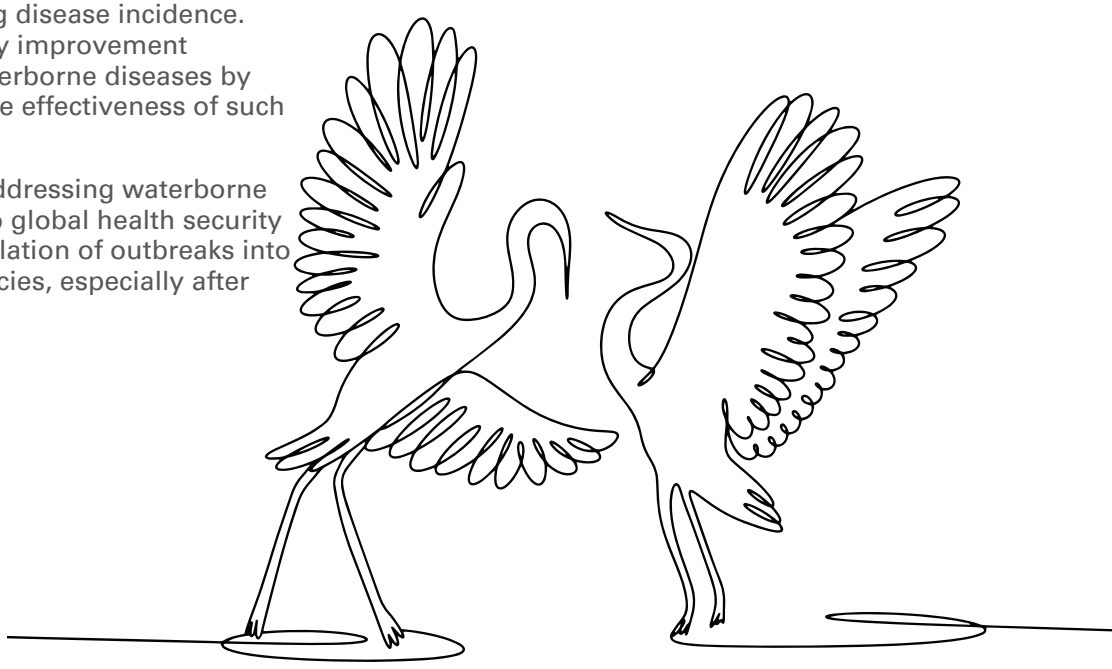
Feasibility of Intervention: Strengthening WASH programs, improving water sanitation, and promoting hygiene practices have proven to be effective in reducing disease incidence. Ethiopia's water quality improvement initiatives reduced waterborne diseases by 30%, demonstrating the effectiveness of such interventions.

Global Health Security: Addressing waterborne diseases contributes to global health security by preventing the escalation of outbreaks into public health emergencies, especially after natural disasters. This aligns with WHO's global initiatives on water, sanitation, and hygiene.

International Commitments and Goals: Aligning with SDG 6 (Clean Water and Sanitation) and WHO's initiatives, prioritizing waterborne diseases leverages co-benefits of promoting sustainable management of water resources and improved health outcomes.

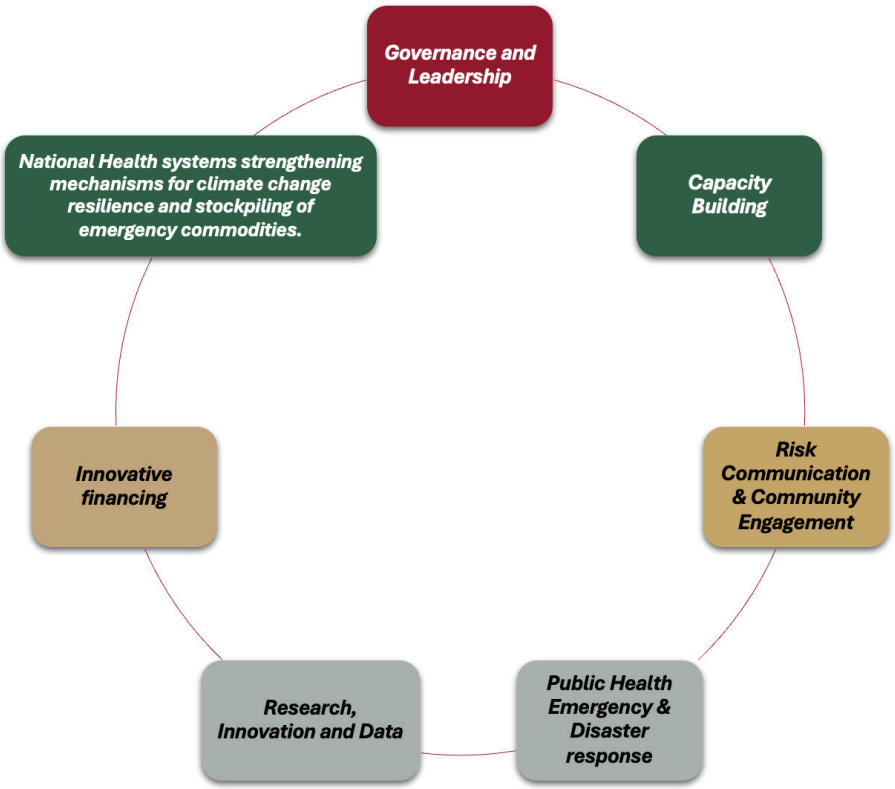
Political Will: Despite the dedicated support for WASH initiatives, the political focus is often constrained by low resource allocation and competing priorities. Sustained advocacy and strategic resource mobilization are essential to translate political will into actionable policies.

By prioritizing these five vulnerabilities, Africa CDC's strategic framework aims to address the most pressing climate-health challenges on the continent. These priorities reflect a balance between immediate public health needs, economic considerations, feasibility of interventions, and alignment with both national and global health agendas.



4. Strategic Pillars and Interventions

Cognizant of the impending climate-related health risks and vulnerabilities in Africa, it is imperative to devise comprehensive response measures meant to build the capacity of health systems in the continent to appropriately manage the climate-health nexus. This specifically calls for practical guidance for member states to proactively initiate and implement measures to enhance the adaptive capacity, resilience and sustainability of health systems communities amidst climate change, climate variability and extreme weather events. The Climate Change and Health Strategic Framework responds to this call by encompassing six strategic pillars to ensure comprehensive integration of climate considerations into health systems and policies for enhanced resilience. The strategic pillars are: i) capacity building, ii) risk communication and community engagement, iii) governance and leadership, iv) research and innovation, v) public health emergency and disaster risk response, and vi) innovative financing. Each pillar focuses on specific interventions to address the diverse impacts of climate change on public health. Overall, the strategic framework is expected to enhance the capability of member states in addressing climate-induced health vulnerabilities including but not limited to conducting vulnerability and adaptation assessments, development of health national adaptation plans (HNAPs), continuous monitoring of, preparation for and effective response to climate-related health emergencies.



Strategic pillars and interventions for the Strategic Framework

4.1. Governance and Leadership

To strengthen governance frameworks for mainstreaming climate considerations into health policies and systems, the following initiatives will be undertaken:

4.1.1 Support Establishment of Regional One Health MCMs Inclusive of Climate Change Focal Points

i. Establish virtual and in-person platforms for RCCs and RECs to coordinate actions across sectors and regions.

ii. Allocate and manage specific funding for regional coordination mechanisms to support climate resilience initiatives.

iii. Form committees with sectoral representatives from health, environment, and agriculture to drive climate action.

iv. Develop secure data-sharing protocols to facilitate real-time climate-health information exchange across borders.

v. Provide training on multi-sectoral collaboration, focusing on climate risk assessment and adaptation for RCCs and RECs.

4.1.2 Strengthen Incorporation of Climate Change into Health Coordination Mechanisms

i. Conduct workshops to guide the integration of climate change considerations into health systems and policies.

ii. Appoint climate-health focal points within health departments to ensure cross-sectoral policy integration.

iii. Establish Mandatory Climate Impact Assessments for new health policies and programs to support climate resilience.

iv. Develop Monitoring and Evaluation Frameworks to track the effectiveness of climate change integration in health systems.

v. Provide guidance documents and hands-on support for ministries embedding climate change into health sector programs.

4.1.3 Support Ministerial Leadership Programs

i. Offer training for ministers and high-level officials on One Health governance principles and climate resilience.

ii. Facilitate exchanges between ministers from different African regions to share best practices in climate governance.

iii. Acknowledge and celebrate ministers championing climate-health initiatives.

iv. Organize annual summits for ministers to discuss One Health governance updates and action plans.

v. Provide resources to help leaders integrate climate resilience into governance across health, agriculture, and environmental sectors.

4.1.4 Establish or Strengthen National Climate Change and Health Working Groups

i. Develop standardized protocols and roles for national working groups focused on climate change and health.

ii. Task working groups with raising awareness at the community level on climate resilience and health impacts.

iii. Establish channels for communities to provide input on climate and health challenges to national working groups.

iv. Support working groups in aligning policies with regional and continental climate-health goals.

v. Capacity Building for Working Group Members: Offer training on leadership, climate policy, and multi-sectoral collaboration for working group members.

4.1.5 Embed Climate Change in International Cooperation

i. Foster partnerships with WHO, UNEP, and other organizations for resource sharing and knowledge exchange.

ii. Develop Bilateral Agreements with countries experienced in climate adaptation to support African initiatives.

iii. Establish international exchange programs to expose policymakers to successful climate-health strategies.

iv. Support participation of African delegates in international forums to advocate for the continent's priorities.

v. Assist countries in accessing global climate resilience funds through proposal support and collaboration.

4.1.6 Facilitate African Health Ministerial Participation in COP Events

i. Organize workshops to prepare ministers on key climate-health issues prior to COP events.

ii. Create an African Ministerial Coalition to unify and amplify African voices on climate-health resilience at COP events.

iii. Assist in creating evidence-based position papers to highlight Africa's climate-health needs.

iv. Engage media to report on African health ministerial initiatives and climate-health advocacy at COP.

v. Hold debriefs sessions to discuss outcomes and strategize on implementing COP commitments.

4.1.7 Advocate and Support Digitalization of Climate Change and Health Data

i. Establish a continent-wide, digital platform for climate-health data to enhance accessibility and analysis.

ii. Develop uniform data protocols to ensure consistency and compatibility across countries and sectors.

iii. Provide training for national health departments on data digitalization and management.

iv. Implement systems for real-time sharing of climate-health data among RCCs, RECs, and national health departments.

v. Develop robust security and privacy policies to protect climate-health data from unauthorized access.

4.2 Capacity Building

Objective: Enhance the capacity of health professionals and other relevant stakeholders to integrate climate considerations into health programs for enhanced climate resilience and adaptation. For this objective to be achieved, the following initiatives will be undertaken:

4.2.1 Create periodic continental and regional peer-to-peer Learning Workshops

i. Develop a schedule of regular workshops focused on knowledge exchange and regional case studies.

ii. Create a mentorship program pairing experienced countries with developing programs to enhance learning.

iii. Implement pre- and post-workshop evaluations to measure knowledge gained and areas for future improvement.

iv. Establish partnerships with universities to involve academia in peer learning and contribute evidence-based insights.

v. Develop an online platform to store recorded sessions, resources, and facilitate follow-up discussions.

4.2.2 Develop climate change and health training modules and materials

i. Collaborate with subject matter experts to create standardized training modules adaptable to regional needs.

ii. Offer certification programs to encourage deeper engagement and establish recognized expertise.

iii. Translate materials into multiple languages to maximize accessibility across member states.

iv. Integrate modules into existing health and environmental curriculums in regional universities and institutes.

v. Regularly review and update materials based on evolving climate science and health data.

4.2.3 Support national and subnational level trainings and capacity building

i. Provide grants for national and local governments to conduct climate-health training workshops.

ii. Develop a toolkit for local trainers to facilitate standardized sessions across diverse communities.

iii. Create train-the-trainer programs to multiply knowledge transfer capabilities at the grassroots level.

iv. Establish partnerships with NGOs and community leaders to support localized training efforts.

v. Design monitoring and evaluation frameworks to assess the impact of these trainings.

4.2.4 Establish a pool of experts and maintain a database for climate experts RRTs in collaboration with AVoHC

i. Build a database that categorizes experts by specialty, location, and language proficiency for targeted support.

ii. Develop a system for regularly updating the database with new experts and removing inactive members.

iii. Create a protocol for rapid deployment of experts to respond to climate-health crises.

iv. Organize quarterly webinars or briefings where experts share recent experiences and updates.

v. Establish a mentorship program within the database, pairing experienced experts with emerging professionals.

4.2.5 Support the establishment of national climate change and health programs

i. Provide technical assistance and seed funding for governments to launch climate-health programs.

ii. Partner with international organizations to provide ongoing technical and financial support.

iii. Develop templates and guidelines to help governments create program frameworks quickly.

iv. Host regional forums where early adopters share best practices and lessons learned with new program developers.

v. Implement a reporting structure that helps track the growth and impact of these programs over time.

4.2.6 Develop capacity gaps assessment tools and conduct training needs assessments

i. Partner with assessment experts to create standardized gap analysis tools specific to climate-health.

ii. Conduct pilot assessments in selected regions to refine tools before wider deployment.

iii. Offer training for local officials to accurately use assessment tools and interpret results.

iv. Create a centralized repository of assessment data to identify recurring capacity gaps and target resources.

v. Develop a feedback loop with stakeholders to improve the assessment process over time.

4.2.7 Establish continental forums for and build capacity of CSOs, youth groups, and non-state actors on advocacy

i. Develop an online community hub where CSOs, youth groups, and advocates can network and share resources.

ii. Offer advocacy training sessions focused on building communication and lobbying skills.

iii. Organize annual conferences or summits to bring these groups together for collaboration and networking.

iv. Provide small grants to support grassroots advocacy projects.

v. Create a mentorship program pairing established advocates with emerging youth leaders.

4.2.8 Support national Vulnerability and Adaptation (V&A) Assessments capacity building and implementation

i. Conduct workshops on the One Health approach and its integration into V&A assessments.

ii. Develop V&A toolkits that emphasize One Health for use in local and national assessments.

iii. Provide technical guidance on interpreting V&A findings for effective adaptation planning.

iv. Partner with universities to incorporate V&A assessment training into public health and environmental curricula.

v. Establish a peer review system to validate V&A assessments.

4.2.9 Establish a Community of Practice and platforms

i. Create an online portal dedicated to resource sharing and discussions for practitioners.

ii. Host regular virtual meetings where members can discuss challenges and share solutions.

iii. Organize annual workshops for in-depth discussions and case study presentations.

iv. Develop a repository of case studies and success stories accessible to all members.

v. Encourage the formation of regional sub-groups to address localized challenges within the community.

4.2.10 Support national workshops for development and review of Health National Adaptation Plans (HNAPs)

i. Offer funding and technical assistance to organize HNAP workshops in each member state.

ii. Partner with regional climate-health experts to guide the development process.

iii. Provide standardized templates and guidelines to help streamline the HNAP creation.

iv. Create a feedback and peer-review process to refine and improve HNAP drafts.

v. Monitor and publish progress on HNAP implementation to encourage accountability.

4.2.11 Establish Regional Centers of Excellence for Climate and Health

i. Identify universities and research centers in each region to serve as Centers of Excellence.

ii. Provide funding for facilities, research grants, and training programs at these centers.

iii. Develop partnerships between centers to facilitate regional research collaboration.

iv. Host an annual conference to showcase findings and foster collaboration among centers.

v. Establish internship and exchange programs for professionals to train at these centers.

4.3. Risk Communication and Community Engagement

Objective: To enhance community awareness and engagement in addressing the health impacts of climate change. The following initiatives will be undertaken to achieve this objective:

4.3.1 Development of Climate and Health Risk Communication Strategy for Member States' Adaptation

i. Develop an adaptive communication framework that identifies and addresses the unique climate-related health risks in each member state.

ii. Create a template for rapid response communication materials to be used in climate-health emergencies, like heatwaves, floods, and disease outbreaks.

iii. Conduct quarterly workshops with regional communication officers to assess and improve strategies based on recent climate-health events.

iv. Design a climate-health risk communication dashboard for real-time updates on health risks related to climate events.

v. Integrate mobile alerts for climate-health advisories, targeting both rural and urban populations.

4.3.2 Develop, Standardize, and Translate Communication Tools in All AU Languages and Indigenous Knowledge to Support Adaptation

i. Translate climate and health educational materials into major indigenous languages and dialects across AU member states.

ii. Partner with cultural and community leaders to develop communication materials that incorporate indigenous knowledge and climate wisdom.

iii. Create climate-health informational toolkits for schools, integrating regionally relevant environmental health knowledge.

iv. Develop visual aids (infographics, videos) that effectively communicate climate risks, tailored for each AU region's cultural and linguistic context.

v. Host periodic webinars to train community health workers on using

standardized tools for climate-health communication.

4.3.3 Establishment of Africa Climate and Health Day and Support National Commemoration Activities

i. Launch an Africa Climate and Health Day toolkit for local governments to organize community-centered events.

ii. Encourage participation from schools, healthcare centers, and local businesses in Climate and Health Day activities, emphasizing community engagement.

iii. Organize virtual forums to connect communities across the continent on Climate and Health Day, sharing stories of resilience and adaptation.

iv. Collaborate with local artists and influencers to create awareness campaigns promoting Climate and Health Day on social media.

v. Provide grants for innovative, community-led projects presented on Climate and Health Day that address local climate-health challenges.

4.3.4 Engagement of Local Communities by CSOs, Youth Groups

i. Support CSOs and youth groups in organizing climate-health education workshops within their communities.

ii. Develop training programs for CSOs on effective climate-health advocacy, enabling them to mobilize local communities.

iii. Establish partnerships with local organizations to initiate community-based adaptation projects like urban green spaces or water conservation initiatives.

iv. Facilitate youth group-led climate-health awareness campaigns on social media, aimed at fostering dialogue on local climate impacts.

v. Launch a grant program for CSOs and youth groups that implement innovative climate-health community projects.

4.3.5 Advocacy and Awareness Among Decision and Policy Makers

i. Organize biannual climate-health policy roundtables with policymakers to discuss pressing climate-health issues and legislative needs.

ii. Develop and distribute policy briefs that highlight urgent climate-health risks, tailored for policymakers in each AU region.

iii. Coordinate field visits for policymakers to regions affected by climate-health impacts, encouraging first-hand experience and insights.

iv. Partner with research institutions to present evidence-based climate-health policy recommendations to governmental bodies.

v. Establish a mentorship program connecting emerging leaders with experienced policymakers to strengthen climate-health governance knowledge.

4.3.6 Engagements and Training on Health Journalism and Climate-Health Communication by Regions

i. Partner with journalism schools to develop climate-health reporting curricula.

ii. Host regional workshops for journalists to understand and accurately report on climate-health risks.

iii. Develop a toolkit for journalists focused on climate and health, including fact-checking resources.

iv. Provide mini-grants for journalists to investigate and report on local climate-health issues.

v. Launch an award for excellence in climate-health journalism, promoting accurate and impactful reporting.

4.3.7 Media Programs for Climate and Health Awareness

i. Develop a series of radio programs in regional languages on climate-health risks and prevention measures.

ii. Partner with influencers to create climate-health awareness content on social media platforms.

iii. Launch a climate-health podcast series featuring expert insights and community stories.

iv. Collaborate with national broadcasters to air weekly climate-health segments across AU countries.

v. Create interactive content such as quizzes, infographics for digital platforms to

engage younger audiences on climate-health topics.

4.3.8 Youth Engagement Focused on Creating Climate and Health Content for Dissemination Using Social Media Platforms

i. Establish a youth ambassador program where young people create and share climate-health content in local contexts.

ii. Host a yearly digital competition for the best youth-created climate-health content.

iii. Partner with social media platforms to feature climate-health content developed by AU youth.

iv. Launch training sessions for young influencers on responsible and accurate climate-health communication.

v. Provide grants for youth groups creating localized climate-health social media campaigns.

4.3.9 Annual Knowledge, Attitudes, and Practices (KAP) Surveys on Climate and Health Monitoring

i. Partner with research institutions to develop standardized KAP survey tools for climate-health monitoring.

ii. Conduct training sessions for community health workers on KAP survey implementation and data collection.

iii. Create an online platform where survey results are displayed, allowing for public and government access to data insights.

iv. Use survey data to inform the development of targeted educational programs in high-risk regions.

v. Host annual forums to share KAP survey findings and discuss strategies for improvement in climate-health practices.

4.4. Public Health Emergency and Disaster Response

Objective: Strengthen public health emergency preparedness and response to climate-sensitive diseases and extreme climate events.

4.4.1 Early Warning Alert and Response Systems (EWARS)

i. Enable Climate-Sensitive EWARS to improve real-time monitoring and forecasting of climate-sensitive health risks.

ii. Support the Integration of Climate Intelligence in National Public Health Emergency Operation Centers (PHEOCs) to enhance decision-making during health emergencies.

iii. Promote the Integration of Climate Intelligence into RCCs (Regional Coordination Centers) PHEOCs and Africa CDC Headquarters for a coordinated response across the continent.

iv. Strengthen Environmental Surveillance through laboratory networks, Event-Based Surveillance (EBS), genomic/wastewater surveillance, and meteorological surveillance to detect climate-sensitive health threats early

v. Support member states in Conducting Climate Emergency Simulation Exercises and develop One Health Contingency Plans to prepare for climate-sensitive threats.

4.5. Research, Innovation and Data

Objective: To strengthen research, innovation, and data integration in support of evidence-based decision-making in climate and health. The following initiatives will be undertaken to achieve this aim.

4.5.1 Support Innovative Technologies for Climate-Related Risks

i. Conduct pilot projects that assess the effectiveness of climate-smart technologies, such as energy-efficient medical equipment and resilient healthcare facilities.

ii. Develop mobile apps that deliver climate-health alerts and real-time data on climate-related health risks to communities and healthcare providers.

iii. Implement remote sensing technologies to monitor environmental factors that impact health, like drought and flood patterns, with the aim of creating responsive health systems.

iv. Support for Green Healthcare Infrastructure such as sustainable energy and water management systems to improve resilience against climate-induced disruptions.

v. Develop telemedicine programs that use satellite or other communication technologies to reach areas impacted by climate events, ensuring continuous access to healthcare.

4.5.2 Support Integration of Climate Data into DHIS 2 Platform

i. Create DHIS 2 modules specifically designed to capture and analyze climate-related health data, such as data on vector-borne diseases and heat-related illnesses.

ii. Offer targeted training to health workers and data managers on utilizing climate data within the DHIS 2 system.

iii. Implement tools within DHIS 2 that enable real-time climate-health data collection, enhancing timely responses to climate-driven health challenges.

iv. Develop protocols and validation tools to ensure the accuracy and completeness of climate-health data within DHIS 2.

v. Conduct workshops to align stakeholders on the strategic use of integrated climate data in health decision-making.

4.5.3 Establish Regional Air Quality Monitoring Stations

i. Conduct studies to establish baseline air quality levels across various regions, aiding in the identification of high-risk areas.

ii. Develop community-led initiatives for local air quality monitoring, training residents to participate in data collection and reporting.

iii. Correlate air quality data with respiratory and cardiovascular health metrics to identify and mitigate health impacts in affected areas.

iv. Establish mobile air quality units that can be deployed to remote or hard-to-reach regions to collect data.

v. Partner with schools and community organizations to increase public awareness of air pollution's health impacts and mitigation strategies.

4.5.4 Establish Africa CDC Climate Change and Health Research Hub

i. Establish a Climate-Health Research Grant Program that provides funding opportunities for African researchers focused on climate change and health impacts.

ii. Host an annual conference dedicated to climate-health research, bringing together African scientists, policymakers, and practitioners.

iii. Partner with universities to conduct studies on the intersection of climate and health, focusing on topics like infectious diseases, nutrition, and mental health.

iv. Create a centralized repository where researchers can access climate-health data, publications, and reports.

v. Offer internships for students in fields related to climate change and public health, enhancing research capacity across the continent.

4.5.5 Establish Africa CDC Data Modeling Hub for Climate Change and Early Warning Surveillance Systems

i. Develop predictive models that forecast health risks based on climate data, supporting proactive responses to climate impacts.

ii. Organize workshops for regional health officials and data scientists on the use of data modeling tools for climate-health surveillance.

iii. Collaborate with national health departments to integrate climate-health modeling data with existing early warning systems.

iv. Facilitate scenario planning exercises to explore potential climate-health outcomes and refine response strategies.

v. Establish a network of data modelers across Africa to share expertise, tools, and best practices for climate-health modeling.

4.5.6 Strengthen Legal Frameworks and MoUs for Ethical Data Sharing

i. Create clear, standardized protocols for ethical climate-health data sharing across African nations.

ii. Facilitate the establishment of MoUs among African countries to enable swift data sharing during climate-related health emergencies.

iii. Organize workshops focused on data security and privacy in climate-health data sharing, aimed at policymakers and data managers.

iv. Support the integration of climate-health data sharing into national health

legislation, highlighting its role in public health.

v. Develop secure, continent-wide platforms for real-time data sharing on climate-health, ensuring interoperability and ease of access.

4.5.7 Support Annual Scientific Forum at the CPHIA Focused on Climate Change

i. Introduce awards for outstanding climate-health research in Africa, incentivizing innovation, and impact.

ii. Establish dedicated networking sessions for early-career researchers to connect with seasoned experts in climate-health.

iii. Feature presentations from researchers showcasing practical applications of climate-health findings.

iv. Provide resources to assist African researchers in publishing their findings on climate-health topics in prominent journals.

v. Host roundtables that bring together researchers, policymakers, and public health officials to translate climate-health research into actionable policy.

4.6. Innovative Financing

Objective: To establish sustainable financing mechanisms for climate-health initiatives to ensure long-term resilience of health systems amidst climate change.

4.6.1. Exploring Innovative Financing Models

i. Quarterly Continental Policy Briefs on Climate Change and Health to inform member states and stakeholders on emerging climate-health issues.

ii. Incentivize Private Sector on Climate Health Funding through the annual 'Africa CDC Climate Change and Health Fundraising Dinner' for a safer Africa.

iii. Conduct Economic Use Case Studies of climate change and health financing to showcase the economic benefits of investing in climate-health adaptation strategies.

iv. Convene Annual Heads of State High-Level Forum on Climate Change and Health to engage political leaders and secure commitments towards financing climate-health initiatives.

v. Organize the Annual Africa Climate Change and Health Side Event at COP (Conference of Parties) to highlight the importance of integrating health into climate change discussions on a global platform.

vi. Provide Technical Assistance to the 55 Member States to support them in conducting cost assessments and understanding the cost impacts of climate change on health systems.

4.7. National Health Systems Strengthening Mechanisms for Climate Change Resilience and Stockpiling of Emergency Commodities

Objective: To build climate-smart health systems to ensure resilience against climate-related health impacts and strengthen national emergency preparedness capacities.

4.7.1. Exploring Innovative Financing Models

i. Support the development of Climate-Smart Health Systems by improving Water, Sanitation, and Hygiene (WASH) infrastructure in health facilities, particularly in climate-sensitive regions.

ii. Promote Improved Management of Medical Waste in health systems to mitigate the environmental impact of healthcare-related activities.

iii. Strengthen Emergency Capacities by stockpiling critical medical countermeasures, including vaccines, therapeutics, and diagnostics, for climate change-related disease outbreaks.

iv. Support National Public Health Institutes (NPHIs) in building climate-resilient health systems that can withstand and adapt to the increasing frequency and intensity of climate events.

5. Institutional Arrangements, Coordination Mechanisms and Enablers for the Strategic Framework

The effective implementation of Africa CDC's Climate and Health Strategic Framework hinges on robust institutional arrangements and a set of key enablers. The preceding situational analysis, vulnerability evaluation, and the subsequent selection and prioritization of the five critical climate-health vulnerabilities have laid the foundation for a multi-pronged strategy. To operationalize this strategy, an intricate system of institutional structures, mechanisms, and enablers must be established to support the framework's objectives and ensure that interventions are adaptive, context-specific, and sustainable.

5.1. Institutional Arrangements

The success of the Climate and Health Strategic Framework hinges on a robust institutional arrangement that operates effectively at continental, regional, national, and community levels. This arrangement includes the Steering Committee, Technical Working Group (TWG), Regional Coordination Centers (RCCs), and Climate Change and Health Technical Working Group, each having distinct roles in guiding implementation, developing tools, and driving interventions. Integrated into these institutional structures are key enablers—institutional capacity, effective financing, technological innovation, global and regional partnerships, and political will—which directly influence the functionality of institutions, ensuring that the strategic framework is sustainable, adaptable, and effective.

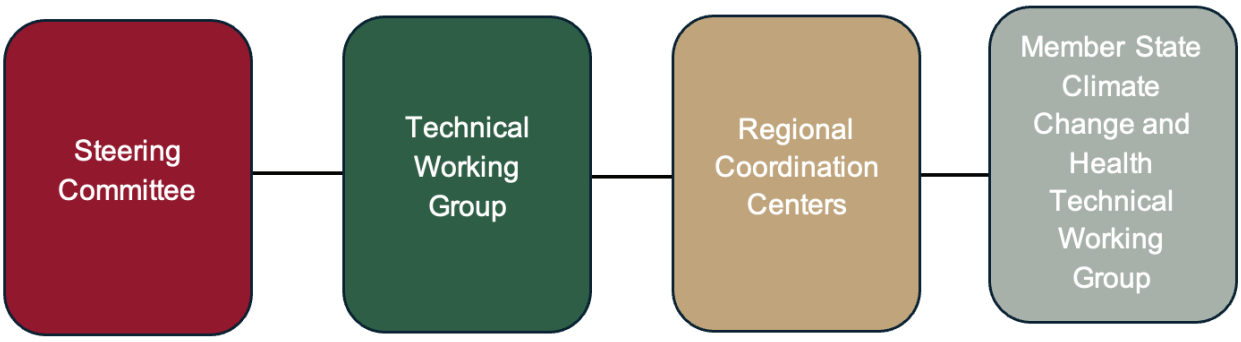
5.1.1 Steering Committee

Role: The Steering Committee serves as the highest governance body, responsible for strategic leadership, policy direction, and oversight of the framework's implementation at the continental level.

Composition: Representatives from Africa CDC headquarters, the AU, RCCs, TWGs, relevant ministries, and key partners such as WHO, UNEP, FAO, UNFCCC, and funding organizations such as GEF, GCF, etc. Chaired by the Director General of Africa CDC, the Steering Committee brings diverse expertise to drive policy, resource mobilization, and advocacy.

Functions:

- **Policy Direction:** Develops policies and guidelines to align member states' health strategies with climate adaptation goals. Political Will is crucial here, as it secures member state commitments to adopt policy changes. The Committee's influence garners high-level political buy-in, facilitating the inclusion of health in national climate policies.
- **Resource Mobilization:** Identifies and secures funding sources, including government allocations, donor partnerships, and innovative financing mechanisms. Effective Financing is fundamental to this function. The Steering Committee coordinates the budgeting process, ensuring that financial resources are allocated strategically to priority areas.



Structure of institutional arrangements for the strategic framework's implementation

- **Oversight:** Conducts regular evaluations, ensures adaptive management, and keeps interventions relevant to emerging climate-health challenges. Institutional Capacity enables efficient monitoring and evaluation, empowering the Steering Committee to adapt interventions based on evidence and changing needs while keeping within the strategic framework's implementation roadmap. The committee will keep track of implementation progress and oversee the timely preparation of periodic tracking reports such as annual reports, mid-term and final evaluation of planned interventions.
- **Stakeholder Engagement:** Coordinates multisectoral collaboration, engaging political leaders and partners. Global and Regional Partnerships enhance this function by promoting cross-sectoral collaboration, sharing resources, and strengthening health system resilience through joint initiatives.
- **Feedback management:** Establish feedback channel and Harness feedback from the various groups and stakeholders that will inform meaningful and targeted decisions.

The Steering Committee will meet biannually to assess implementation progress, allocate funds for annual workplans, and address emerging issues including critical hinderances to the realization of the framework's milestones. For example, when establishing Centers of Excellence for climate-health research, the Committee will use its influence on secure financing, define research priorities, and ensure alignment with member states' health policies. A Continental Coordination Office (COO) will be established, through which the coordination and oversight work of the executive committee will be undertaken.

5.1.2. Technical Working Group (TWG)

Role: The TWG acts as the technical arm of the institutional framework, providing expertise and support to develop tools, research, and guidelines necessary for implementing the framework.

Composition: Technical experts from Africa CDC, RCCs, academic and research institutions, NPHIs, and partner organizations specializing in public health, epidemiology, environmental health, climate science, and policy development.

Functions:

- **Research and Tool Development:** Develops technical tools, frameworks, and training materials for climate-health interventions. Technological Innovation is central to this function, enabling the TWG to design advanced tools, such as digital health platforms and GIS-based surveillance systems, which enhance data collection and analysis.
- **Capacity Building:** Trains national and sub-national health teams to integrate climate-health considerations into policies and practices. Institutional capacity supports the development of comprehensive training modules and the facilitation of peer-to-peer learning platforms for healthcare professionals and policy makers.
- **Technical Assistance:** Guides member states in developing Health National Adaptation Plans (HNAPs) and integrating climate-health considerations into their health systems. The TWG will be instrumental in designing standardized templates for V&A assessments and climate-health indicators. Political Will influences the adoption of technical assistance provided by the TWG, as member states are more likely to implement new practices when they align with political priorities.
- **Monitoring and Evaluation:** Establishes benchmarks and indicators to measure the effectiveness of interventions. Effective Financing ensures that sufficient funds are allocated for ongoing data collection and analysis, providing the resources needed to sustain robust M&E systems.

The TWG will conduct quarterly meetings to review and update technical guidelines. Where necessary, technical sub-committees will be formed, which will meet either quarterly or more frequently on a need basis. During the implementation of the Risk Communication and Community Engagement pillar, the TWG will develop a climate-health communication strategy tailored to various communities, leveraging technological tools like mobile apps and online platforms for effective dissemination.

5.1.3. Regional Coordination Centers (RCCs)

Role: RCCs act as regional hubs for implementing climate-health initiatives,

coordinating data sharing, and tailoring interventions to regional contexts.

Composition: Regional public health experts, climate scientists, representatives from NPHIs, and stakeholders from member state health ministries. RCCs have focal points for research, surveillance, emergency response, and capacity building.

Functions:

- **Regional Adaptation:** Develops region-specific strategies that reflect local climate-health challenges, guiding member states in aligning national strategies with regional priorities. Institutional Capacity allows RCCs to adapt and customize tools and training programs to regional contexts effectively.
- **Capacity Building:** Provides technical support and training to member states, facilitating **Training of Trainers (ToTs)** programs and promoting peer-to-peer learning. Global and Regional Partnerships facilitate resource sharing and knowledge exchange, strengthening capacity-building efforts across regions.
- **Data and Information Sharing:** Serves as a conduit for regional data collection, analysis, and dissemination to support evidence-based decision-making. Technological Innovation underpins this function, utilizing advanced data systems and platforms for real-time monitoring of climate-sensitive health risks.
- **Knowledge Exchange:** Hosts regional conferences and workshops to disseminate best practices and foster cross-border collaboration in implementation of innovative climate-health initiatives. Political Will plays a critical role in promoting regional collaboration, as high-level advocacy can catalyze member state participation in joint initiatives.

RCCs will conduct regular meetings with member states to discuss implementation progress and coordinate actions. For example, in the Public Health Emergency and Disaster Response pillar, RCCs will support member states in enhancing Early Warning Alert and Response Systems (EWARS) by providing technical training and access to regional meteorological data.

5.1.4. Member State Climate Change and Health Technical Working Group

Role: These committees drive effective domestication of the strategic framework, ensuring implementation of interventions that align with country-specific climate-health needs and policies.

Composition: Representatives from ministries, departments, and agencies (MDAs) covering sectors such as health, environment, climate change, energy, transport, and agriculture, as well as community health workers and staff from local government, NGOs, civil society organizations, academic and research institutions, and the private sector.

Functions:

- **Policy Adaptation:** Customizes the strategic framework to fit national policies and develops action plans for implementation. Political Will is crucial for adopting and integrating new climate-health policies, as it influences national resource allocation and policy prioritization.
- **Coordination and Implementation:** Oversees strategic pillar activities at the national and local levels, such as community mobilization and infrastructure resilience. Effective Financing ensures that member states have access to resources for implementing initiatives, such as establishing Neighborhood Climate and Health Action Teams.
- **Community Engagement:** Engages with local communities to ensure interventions are culturally relevant and responsive to community needs. Institutional Capacity provides training and resources to community health workers, fostering grassroots-level participation and ownership.
- **Monitoring and Reporting:** Collects data on intervention outcomes and provides feedback to RCCs and the TWG. Technological Innovation streamlines data collection and analysis processes, enabling real-time monitoring of health outcomes.

Climate Change and Health Technical Working Group will engage in monthly community outreach activities, forming partnerships with local leaders to facilitate adaptation efforts. For instance, in the Governance and

Leadership pillar, they will advocate for health considerations in Nationally Determined Contributions (NDCs), using political will and partnerships to drive policy integration.

5.2. Enablers for Strategic Framework

The successful implementation of the Climate and Health Strategic Framework hinges on key enablers that provide the essential support structures and mechanisms to drive climate-resilient health systems across Africa. These enablers ensure that interventions are not only effective but also sustainable and scalable.

5.2.1. Strong Institutional Capacity and Governance

Strong institutional capacity and governance are fundamental to the Climate and Health Strategic Framework. This enabler involves enhancing the capabilities of various institutions, from continental to community levels, to plan, coordinate, implement, and monitor climate-health initiatives effectively. In the context of this framework, strong institutional capacity and governance mean:

i. Developing Clear Governance Structures

The establishment of clear governance structures including a Steering Committee, Technical Working Group (TWG), Regional Coordination Centers (RCCs), and Climate Change and Health Technical Working Group will ensure a streamlined approach to managing interventions, addressing gaps, and ensuring that resources are allocated where they are most needed. Clear governance facilitates transparency, accountability, focused implementation, and effective collaboration among stakeholders, creating an environment that fosters efficient resource use and decision-making. This is essential for aligning efforts across sectors and regions to tackle climate-related health challenges cohesively.

ii. Building Institutional Capacity Across All Levels

Institutional capacity building involves enhancing the skills, knowledge, infrastructure, and systems required to address climate-health issues effectively. This capacity-building effort extends from the Africa CDC headquarters to RCCs, national health ministries, and community health units. For the strategic framework, capacity building will include:

- **Training Programs**: Establishing a series of training modules on climate change and health for in form of Training of Trainers (ToTs), who will then train national and sub-national officials on various relevant topics.
- **Resource Development**: Developing comprehensive guidelines, toolkits, and standard operating procedures (SOPs) to support the implementation of interventions under each strategic pillar. This includes creating manuals for conducting vulnerability and adaptation (V&A) assessments, monitoring climate-sensitive diseases, and mainstreaming climate-health considerations into national policies.
- **Infrastructure Support**: Providing necessary infrastructure, such as digital health information systems, surveillance equipment, and climate-health research facilities, to enhance the operational capacity of health institutions.

Enhancing institutional capacity ensures that health systems are equipped with the tools and expertise to adapt to and manage the health impacts of climate change. It also promotes knowledge sharing, innovation, and the adoption of best practices across member states.

iii. Implementing Robust Monitoring and Evaluation (M&E) Systems

Strong governance also involves establishing robust monitoring and evaluation mechanisms to track the progress of the strategic framework's implementation. This is vital for assessing the impact of interventions, identifying areas for improvement, and informing policy adjustments. The framework will incorporate a comprehensive M&E system at both national and regional levels. This system will include:

- **Standardized Indicators**: Developing a set of indicators to monitor health outcomes, climate resilience, and the effectiveness of interventions. These indicators will be aligned with global health commitments, such as the Sustainable Development Goals (SDGs).
- **Data Collection**: Implementing digital data collection tools, Geographic Information Systems (GIS), and surveillance systems to gather real-

time information on climate-sensitive health risks. Data will be stored in a centralized database, enabling accessible, timely analysis for decision makers.

- **Feedback Mechanisms**: Establishing feedback loops that involve stakeholders at all levels. This includes community-level surveys to capture local climate-health impacts and status of grassroots-level initiatives, as well as regular reporting from health ministries to the Africa CDC on progress and challenges.

A robust M&E system ensures accountability, promotes transparency, and provides the data needed for evidence-based decision-making, including identification of implementation discrepancies that warrant realignment. It allows for continuous learning and adaptation, ensuring that interventions remain effective in the face of changing climate dynamics.

iv. Fostering Political Will and Commitment

Strong institutional capacity is reinforced by political will and strong leadership at all levels. Political support is critical for integrating climate-health considerations into national policies, securing funding, and driving multi-sectoral engagement. The strategic framework will engage high-level political stakeholders, including heads of state, ministers, and parliamentarians, to advocate for climate-health priorities. It will promote the inclusion of climate-health indicators in Nationally Determined Contributions (NDCs) and national adaptation plans, aligning health policies with international climate goals. Political commitment induces the prerequisite policy changes that prioritize climate-health interventions, ensuring sustainable resource allocation and high-level support for implementing the strategic framework.

v. Enhancing Legal and Policy Frameworks

Establishing legal and policy frameworks is an integral component of strong governance. These frameworks provide the necessary legal backing for implementing climate-health interventions, protecting public health, and promoting climate resilience. The framework will guide member states in developing and strengthening climate-health policies and regulations, fostering well-guided interventions. This includes the domestication of the Climate-Health Strategic Framework into national health policies, the inclusion of health considerations in environmental regulations, and the establishment of national climate-health working groups with clear Terms of Reference (ToRs). Legal and policy frameworks create an enabling environment for climate-health actions to be effectively implemented to maximize positive impact. They ensure that climate-health initiatives are institutionalized, legally binding, and receive the necessary support from governments and stakeholders.

5.2.2. Effective Financing Mechanisms and Resource Mobilization

Effective financing mechanisms are vital enablers for the successful implementation of the Climate and Health Strategic Framework. Addressing climate-related health challenges requires substantial, sustained investment to support interventions under each strategic pillar. Securing diverse funding sources and managing resources efficiently will ensure the scalability and sustainability of climate-health initiatives across the continent.

i. Establishing Diverse Funding Sources

To implement the strategic framework's interventions effectively, funding must be sourced from various channels, including government budgets, international donors, private sector investment, climate finance mechanisms, and innovative financing models. Relying solely on one source can create financial instability, which could jeopardize the success of long-term initiatives. Africa CDC will guide member states in exploring and securing funding from multiple sources:

- **Government Budgets**: Advocate for the creation of specific budget lines dedicated to climate-health interventions within national and local government budgets. This will involve engaging with finance ministries to demonstrate the economic benefits of investing in climate adaptation and resilience in the health sector.
- **International Donors**: Assist member states in accessing global health funding mechanisms, such as the Global Fund, the World Bank, the

Green Climate Fund (GCF), the Global Environment Facility (GEF), the Adaptation Fund, and bilateral donors. This will include technical assistance for grant applications, development of bankable project proposals, and facilitating partnerships with international agencies.

- **Private Sector and Public-Private Partnerships (PPPs)**: Mobilize funding through PPPs by engaging private sector companies in Corporate Social Responsibility (CSR) programs. These programs can contribute to climate-health projects, such as renewable energy installations in health facilities and tree-planting initiatives that improve air quality. PPPs also have enormous potential to raise investment in high-cost, publicly desired and sustainable climate-health initiatives.

- **Innovative Financing Models**: Promote mechanisms like climate-health bonds, carbon credits, and microfinance schemes that support community-level climate adaptation projects.

Establishing diverse funding sources provides a steady financial base for the strategic framework's implementation. It mitigates the risks associated with funding shortages and ensures that interventions can be scaled up and maintained over time.

ii. Advocating for National Climate-Health Funding

National governments play a critical role in financing climate-health initiatives. By allocating specific funds for climate-health interventions, governments can strengthen health systems' resilience to climate-related risks. Africa CDC will advocate for member states to include climate-health funding in their annual national budgets. This involves:

- **Developing Templates and Guidelines**: Providing member states with templates for budget proposals that demonstrate the cost-effectiveness of climate-health investments. These templates will help health ministries to secure funding allocations for climate-health initiatives.

- **Conducting Cost-Benefit Analyses**: Support member states in conducting cost-benefit analyses that highlight the economic benefits of investing in climate-health interventions, such as reduced healthcare costs, enhanced workforce productivity, and increased community resilience.

Establishing national climate-health funds strengthens countries' ownership and commitment to addressing climate-related health challenges. It ensures that there is dedicated financing to implement and sustain initiatives, increasing the likelihood of achieving long-term health resilience.

iii. Leveraging Existing Health Funding Mechanisms

Many global health funding mechanisms, like the Global Fund and GAVI, already support interventions related to climate-sensitive diseases. Leveraging these mechanisms can provide additional resources for climate-health initiatives. Africa CDC will assist member states in aligning climate-health interventions with the objectives of existing health funding mechanisms:

- **Technical Assistance**: Provide technical assistance to health ministries in preparing funding applications that include climate-health components, such as the procurement of climate-resilient medical supplies and development of early warning systems.

- **Partnerships**: Facilitate partnerships between health ministries and bilateral donors, such as USAID, the European Union, and other international agencies, to secure funding for climate-health projects.

Utilizing existing funding mechanisms ensures that resources are available for addressing climate-sensitive diseases. This approach maximizes financial support for climate-health initiatives without requiring the creation of entirely new funding streams.

iv. Establishing a Continental Climate-Health Funding Mechanism

A dedicated continental funding mechanism will pool resources from multiple stakeholders, including member states, donors, private sector partners,

and philanthropists. This continental fund will support a coordinated, large-scale approach to implementing climate-health interventions. Africa CDC will lead the establishment of a climate-health fund at the continental level:

- **Develop a Governance Framework**: Create a transparent governance framework for the continental fund, ensuring equitable access to resources for all member states. This framework will outline funding criteria, application processes, and reporting requirements.
- **Create Funding Windows**: Develop specific funding windows that cater to several types of climate-health projects, such as health infrastructure resilience, capacity building, research and innovation, and community engagement initiatives.

  A continental funding mechanism provides a unified platform for resource mobilization, enabling member states to access funding for high-priority interventions. This coordinated approach promotes equitable distribution of resources, ensuring that even countries with limited financial capacity can implement climate-health strategies.

v. Capacity Building for Accessing Climate Funds

Many member states face challenges in accessing international climate finance due to complex application processes and stringent funding criteria. Building the capacity of health and/or environment ministries to navigate these processes is crucial for securing financial resources. Africa CDC will conduct training programs for member states on climate finance channels through:

- **Training on Funding Channels**: Develop training materials that explain the procedures for applying to international funds such as the Green Climate Fund (GCF), Adaptation Fund, Global Environment Facility (GEF), and World Bank climate finance initiatives.
- **Workshops on Financial Management**: Organize workshops on fiscal management, compliance with funding requirements, and transparent reporting to enhance accountability. This will also entail providing examples of successful funding applications to guide member states in their submissions.

Strengthening member states' capacity to access international climate finance empowers them to secure necessary funds for implementing climate-health interventions. It also ensures that they can meet donor requirements, promoting financial transparency and building trust with funding partners.

vi. Ensuring Transparency and Accountability in Funding Utilization

Transparency and accountability in the use of climate-health funds are vital for maintaining donor confidence and ensuring that financial resources are used efficiently to achieve the framework's objectives. The strategic framework will incorporate monitoring systems to track the allocation and utilization of funds:

- **Develop a Reporting Framework**: Establish a standardized reporting framework that includes indicators for tracking the utilization and impact of climate-health funding at national, regional and continental levels.
- **Annual Climate-Health Financing Reports**: Publish annual reports on climate-health financing to promote transparency and accountability. These reports will outline how funds are allocated, spent, and their impacts on health outcomes, serving as a tool for attracting continued investment.

  Transparent and accountable funding mechanisms foster trust among donors, governments, and stakeholders, encouraging sustained financial support. It also ensures that funds are used effectively to achieve the strategic framework's goals as well as maximize the positive impacts of planned interventions.

5.2.3. Adoption of Technological Innovations

Adopting technological innovations is a pivotal enabler for implementing the Climate and Health Strategic Framework. Advanced technologies and data-driven solutions play a crucial role in strengthening health systems, improving disease surveillance, and enhancing the capacity of member states to

address climate-related health risks effectively. Africa CDC's strategy emphasizes integrating real-time data analytics, Geographic Information Systems (GIS), digital health platforms, and other technological tools to facilitate a proactive response to climate-health challenges.

i. Utilization of Real-Time Data Analytics and Early Warning Systems

Real-time data analytics and early warning systems enable rapid detection of climate-sensitive health threats, such as vector-borne diseases, heatwaves, and extreme weather events. These tools provide timely information, allowing health systems to respond promptly and mitigate impacts on vulnerable populations. Africa CDC will support member states in implementing data analytics platforms for monitoring climate-health dynamics:

- **Climate-Health Data Integration**: Develop interoperable health information systems that combine meteorological, environmental, and health data. This integration will allow member states to monitor indicators like extreme temperature, rainfall, air quality, and climate-sensitive disease prevalence
- **Early Warning and Alert and Response Systems (EWARS)**: Assist member states in establishing climate-sensitive early warning systems to detect and forecast disease outbreaks that are likely to result from extreme weather events. These systems will incorporate real-time data from remote sensors, weather stations, and health surveillance networks to provide timely alerts and inform public health preparedness, readiness, and responses.

Utilizing real-time data analytics and early warning systems enhances the ability of health ministries to anticipate and prepare for climate-induced health crises. This proactive approach minimizes the impact of extreme weather events and disease outbreaks, reducing climate-related morbidity and mortality rates across the continent.

ii. Promoting Digital Health Platforms for Communication and Data Sharing

Digital health platforms facilitate the efficient exchange of information, support remote monitoring, and enhance community engagement in climate-health initiatives. By leveraging mobile technology, telemedicine, and online data repositories and portals, health systems can improve the dissemination of climate-health information and deliver timely interventions. Africa CDC will guide member states in the adoption of digital health tools:

- **Mobile Health (mHealth) Applications**: Develop and promote the use of mobile applications to support climate-health communication, public health education, and remote diagnosis and patient monitoring. These apps can provide real-time health alerts, guidance on managing climate-sensitive illnesses, and instructions on water safety and vector control. The applications further help in real-time climate information and data management for effective health surveillance.
- **Telemedicine and Remote Consultations**: Advocate for integrating telemedicine services into health systems, particularly in remote or underserved areas. Telemedicine enables health professionals to provide medical consultations during climate-related emergencies, such as floods or extreme heat events, particularly in areas where access to healthcare facilities may be limited.
- **Digital Data Repositories**: Establish centralized digital repositories for climate-health data, where member states can store, share, and access information on disease surveillance, environmental monitoring, and public health interventions.

Digital health platforms improve the efficiency and reach of climate-health interventions. They facilitate rapid communication between health authorities and the public, support the delivery of health services in challenging conditions, and promote data-driven decision-making.

iii. Supporting Research and Innovation for Climate-Health Solutions

Research and innovation are crucial for developing context-specific solutions to climate-health challenges. By investing in technological advancements, Africa

CDC aims to support the creation of new tools and methodologies that address the unique climate-health nexus in Africa. Africa CDC will foster a culture of research and technological innovation to enhance smooth implementation of evidence-based and innovative interventions:

- **Research Grants for Climate-Health Technologies**: Provide research grants to academic institutions, research centers, and innovators focusing on developing climate-resilient health interventions, such as low-cost indoor air quality sensors, portable cooling devices, and early diagnostic tools for climate-sensitive diseases.
- **Innovation Hubs**: Establish regional innovation hubs where local entrepreneurs, scientists, and public health professionals can collaborate to develop and test new climate-health technologies. These hubs will serve as incubators for ideas and prototypes, enabling member states to adopt innovative solutions tailored to their specific needs.
- **Participatory Research**: Partner with communities to conduct participatory research that aligns with local climate-health priorities. This approach ensures that innovations are culturally appropriate and effectively address the concerns of those most affected by climate-related health issues.

  Investing in research and innovation leads to the development of advanced tools that can effectively mitigate climate-health risks. These technologies enable health systems to adapt to evolving challenges and implement interventions that are both evidence-based and contextually relevant.

iv. Establishing Air Quality and Environmental Health Surveillance Systems

Climate change impacts environmental factors such as air quality, water availability, and vector habitats. Establishing robust environmental health surveillance systems allows member states to monitor these factors and their effects on public health. Africa CDC will support member states in establishing comprehensive surveillance systems including:

- **Air Quality Monitoring Stations**: Assist in setting up air quality monitoring stations and/or networks in urban and rural areas to track pollutants that affect respiratory health, such as particulate matter and ozone. Integrate this data into public health information systems for real-time analysis and response planning.
- **Environmental Health Surveillance**: Develop standardized guidelines for monitoring environmental health indicators, including water quality, food safety, and vector distribution. Train local health teams in sampling techniques, data collection, analysis and prediction/forecasting to detect climate-sensitive health risks.
- **Climate-Health Data Dashboards**: Create interactive dashboards that present environmental health data and meteorological data in an accessible format for policymakers, health professionals, and the public. These dashboards will provide actionable insights to guide health interventions and policy decisions.

  Surveillance systems enable continuous monitoring of environmental factors, facilitating early detection of health risks and informing evidence-based responses. By understanding the relationship between environmental changes and health outcomes, health authorities can implement targeted interventions to protect communities from impending climate-related health risks including outbreaks of climate-sensitive diseases.

v. Building Interoperable Health Information Systems

Interoperable health information systems enhance data sharing and collaboration across sectors, allowing health ministries to effectively manage and respond to climate-health challenges. These systems support the integration of health, environmental, and climate data, providing a holistic view of climate impacts on public health. Africa CDC will guide the development of integrated health information systems through:

- **Data Integration**: Support member states in linking health information systems with meteorological, environmental,

and agricultural data platforms. This integration provides a comprehensive dataset for analyzing climate-health interactions, predicting disease outbreaks, and planning adaptation measures.

- **Capacity Building**: Train biostatisticians and other health data officers and analysts on Geographic Information Systems (GIS) and other digital tools for mapping climate-health vulnerabilities and tracking intervention outcomes. This training will enable the use of evidence and technology to optimize decision-making processes.

  Interoperable health information systems enhance data-driven decision-making, enabling health ministries to plan and implement effective interventions. They provide the data infrastructure necessary for cross-sectoral collaboration and ensure that climate-health responses are well-informed and responsive to changing conditions.

vi. **Strengthening Technological Capacity within Health Systems**

Technological capacity within health systems is essential for implementing and maintaining climate-health interventions. Health workers must be proficient in using digital tools, data platforms, and surveillance technologies to carry out their roles effectively. Africa CDC will prioritize building technological capacity among health professionals:

- **Technical Training Programs**: Conduct technical training programs for health workers, focusing on the use of digital health platforms, GIS tools, and early warning systems. Training will cover data collection, analysis, and interpretation to ensure accurate and timely responses to climate-related health issues.

- **Support Centers of Excellence**: Establish Centers of Excellence in climate-health research and technology to serve as hubs for training, innovation, and knowledge dissemination. These centers will equip health professionals with advanced skills and tools for addressing climate-health challenges.

  Strengthening technological capacity empowers health professionals to utilize innovations effectively, leading to improved surveillance, data management, and intervention delivery. A technologically proficient health workforce is better equipped to manage climate-sensitive health risks and enhance community resilience.

5.2.4. Respectful Global and Regional Partnerships and Collaborations

The effectiveness of strategic framework implementation will require robust and multiple layers of collaboration at national, regional, and continental levels. Collaboration is crucial to ensure joint efforts in planning and implementing interventions grounded in best practices, with input from diverse disciplines. Africa CDC will cultivate collaborations with private sector companies, NGOs, multi-lateral development banks, international organizations, and the academic society at national, regional, continental and international levels to ensure broad knowledge and insight sharing for effective and impactful interventions to be implemented. Partnerships with diverse stakeholders will enhance planning and implementation of innovative cross-border climate-health interventions.

5.2.5. Political Will and Commitment Within Member States

Political will and commitment within member states are critical enablers for the successful implementation of Africa CDC's Climate and Health Strategic Framework. The support and active involvement of national and local governments, health ministries, and policymakers across the continent drives the integration of climate and health considerations into national agendas, policies, and budgets. Political commitment lays the groundwork for effective resource allocation, policy enforcement, multi-sectoral collaboration, and community engagement, ensuring that climate-health initiatives are prioritized and sustained over the long term.

i. **Climate-health Integration into National Policies and Strategies**

The integration of climate-health considerations into national policies and strategies is a key indicator of political will. By embedding climate-health priorities into national development plans, National Adaptation Plans (NAPs), health policies,

Nationally Determined Contributions (NDCs) and other climate action strategies, governments signal their commitment to addressing climate-induced health challenges. Member states will integrate climate-health into their national policies by:

- **Policy Alignment**: Africa CDC will work with health ministries and other relevant agencies within member states to align national policies with the strategic framework. This process includes revising health and climate policies to incorporate interventions that address climate-sensitive health risks, such as vector-borne diseases, heatwaves, and food insecurity.
- **Legislation and Regulation**: Governments will enact laws and regulations that support climate-health initiatives, including the enforcement of building codes for climate-resilient health infrastructure, regulations for air quality, and measures for climate-smart agriculture to promote food security.
- **Multi-Sectoral Plans**: Political commitment will be demonstrated by the establishment of multi-sectoral climate and health plans that involve different sectors such as environment, water, agriculture, and education. These plans foster a comprehensive approach to tackling climate-health risks, ensuring that interventions are coordinated and integrated across sectors.

  Integrating climate-health considerations into national policies establishes a formal commitment to climate resilience in the health sector. This integration facilitates creating an enabling environment for strategic interventions and promotes consistency in addressing climate-related health vulnerabilities in a joint and holistic manner.

ii. Advocacy and Raising Awareness Among Decision-Makers

Sustained political commitment requires ongoing advocacy and awareness-raising efforts targeted at policymakers and government officials. By educating decision-makers on the health impacts of climate change, Africa CDC can foster an informed policy environment that supports climate-health initiatives. Support from Africa CDC to member states will include:

- **Policy Dialogues**: Africa CDC will organize high-level policy dialogues, workshops, and roundtables with health ministers, parliamentarians, and government officials to discuss climate-health challenges and the strategic framework's interventions. These dialogues will serve as platforms for policymakers to understand the urgency of climate action for public health.
- **Advocacy**: Develop and distribute policy briefs that highlight the economic, social, and health benefits of investing in climate-resilient health systems as well as the impact of inaction. These briefs will emphasize how proactive measures can reduce healthcare costs, enhance economic productivity, and improve population health outcomes.
- **Media Engagement**: Engage media outlets to publicize climate-health issues and policy initiatives, arousing public interest that encourages political leaders to commit resources and action toward climate-health resilience.

  By raising awareness among decision-makers, the Africa CDC can influence policy priorities, secure budget allocations, and promote the enactment of climate-health policies. Informed decision-makers are more likely to support comprehensive, long-term strategies that address climate-related health risks.

iii. Budget Allocation and Resource Mobilization

Political will is often reflected in the allocation of national budgets for climate and health initiatives. Governments must commit financial resources to fund the implementation of climate-health interventions, including capacity building, research, infrastructure development, and emergency preparedness. Member states will promote cross-sectoral coordination through:

- **Dedicated Budget Lines**: Establishment of dedicated budget lines for climate and health in national health budgets. These budget allocations will fund activities such as surveillance systems, climate-resilient health infrastructure, training programs, and community engagement efforts.
- **Public-Private Partnerships**: Engage in public-private partnerships (PPPs) to leverage additional funding for climate-health projects. By partnering with the private sector, governments can mobilize resources for technology transfer, infrastructure upgrades, largescale research and action projects and innovative financing mechanisms.
- **International Climate Finance**: Explore avenues for accessing international climate finance mechanisms such as the Green Climate Fund (GCF), Global Environment Facility (GEF) and Adaptation Fund. Africa CDC will provide technical assistance to health ministries in developing funding proposals that align with national climate-health priorities and requirements of funders.

Adequate budget allocation ensures the sustainability and effectiveness of climate-health interventions. Financial commitment from governments demonstrates the seriousness with which climate-health issues are addressed and provides the resources necessary for comprehensive implementation at national and local levels.

iv. Strengthening National Governance Structures

Establishing robust governance structures at the national level is key to ensuring coordinated and effective implementation of the strategic framework. Political will drives the establishment of inter-ministerial committees, climate-health task forces, and working groups to oversee the integration of climate considerations into health policies and systems. Africa CDC will work with politically engaged member states in various ways:

- **Climate-Health Task Forces**: Create national climate-health task forces or committees with representatives from various sectors, including health, environment, agriculture, education, and finance. These task forces will coordinate policy development, resource allocation, and implementation of climate-health interventions.
- **Capacity Building**: Invest in building the capacity of national and sub-national health authorities to develop, monitor, and evaluate climate-health policies. Africa CDC will provide training programs to strengthen the institutional capacity of member states in areas such as policy development, data analysis, and program implementation and evaluation.
- **Policy Monitoring and Review**: Establish mechanisms for regular monitoring, evaluation, reporting, and review of climate-health policies to ensure they are aligned with national priorities and are responsive to changing climate-health dynamics at local and national levels. This will involve engaging policymakers in the review process and adapting policies based on emerging evidence and lessons learned.

Strengthening national governance structures fosters accountability, coordination, and responsiveness in implementing climate-health interventions. Clear leadership and governance frameworks support the strategic framework's objectives, ensuring that climate-health initiatives are effectively managed and sustained.

v. Mainstreaming Climate-Health Advocacy into National and Regional Agendas

Political will is vital for mainstreaming climate-health advocacy into national, regional, and global forums. Africa CDC's efforts to promote climate-health integration must be reflected in the national agendas of member states and regional platforms to drive collective action and policy alignment. Member states, with political backing, will ensure:

- **Inclusion in National Adaptation Plans (NAPs)**: Advocate for the integration of health considerations into National Adaptation Plans (NAPs), ensuring that climate-health priorities are incorporated into broader national climate adaptation strategies.

- **Regional Cooperation**: Prioritize climate-health issues within regional economic communities (RECs), fostering collaborative efforts to address transboundary climate-health risks and share best practices.
- **Representation in International Forums**: Advocate for climate-health issues in international forums, including the United Nations Climate Change Conference (COP) and the World Health Assembly (WHA). Africa CDC will support health ministries in preparing advocacy materials and policy briefs to present a unified African perspective on climate-health challenges.

  Mainstreaming climate-health advocacy into national and regional agendas strengthens Africa's unified position in global climate-health discourse. This collective advocacy strengthens the voice of African member states, influences international policy decisions, mobilizes resources, and reinforces the commitment of African governments to implement the strategic framework effectively.

vi. **Fostering Multi-Sectoral Engagement**

Political will drives multi-sectoral engagement, ensuring that health ministries collaborate with sectors such as agriculture, environment, water, education, and energy to address the multi-faceted nature of climate-health risks. Africa CDC will support member states in fostering multi-sectoral engagement through:

- **Cross-Sectoral Coordination Mechanisms**: Establish cross-sectoral coordination mechanisms, such as inter-ministerial working groups, to facilitate the integration of climate-health interventions across different sectors. These mechanisms will promote information sharing, joint planning, and coordinated response actions.
- **Policy Synergy**: Align health policies with environmental, agricultural, and energy policies to create constructive collaboration in addressing climate-health vulnerabilities. For example, integrating water and sanitation (WASH) initiatives with health programs can effectively reduce the burden of waterborne diseases.
- **Stakeholder Involvement**: Engage stakeholders from civil society, academia, private sector, and local communities in policy dialogues to foster inclusive decision-making and enhance the relevance of climate-health interventions.

  Multi-sectoral engagement ensures that climate-health interventions are comprehensive and address the root causes of climate-related health risks, keeping in mind the interdisciplinary nature of required response to multi-faceted health risks induced by climate change. It facilitates a comprehensive approach, leveraging the strengths and resources of various sectors to implement effective and sustainable solutions.

5.3. Sustainability plan

The sustainability plan for the strategic framework is two-dimensional. The first dimension is environmental sustainability, whereby all interventions implemented will aim at minimizing harm to humans, animals, and the shared environment. It is important to note that environmental sustainability is indeed the main focus of this strategic framework, with interventions geared towards building health system resilience amidst climate change and extreme weather events. The second dimension of sustainability is financial, ensuring continuity of interventions beyond the lifetime of the strategic framework and associated funding. Measures to ensure this continuity and sustainability include:

- Capacity building and institutional strengthening to ensure long-lasting capabilities of member states to design and implement climate-resilient health initiatives.
- An exist strategy that will be developed with each member state where sub-national and national institutions will be capacitated and motivated to take on and continue implementing the established climate change and health initiatives.
- Advocacy for member states to secure budgetary allocations for climate-resilient health initiatives will ensure their sustainability at member state level.

6. Implementation Plan and Costed Budget

The Africa CDC Continental Strategic Framework on Climate Change and Health will be implemented over a five-year period from 2025 to 2029. Interventions will be rolled out in a logical sequence, starting with those under the Governance and leadership and Capacity Building pillar in 2025. The rest of the pillars or key result areas will be implemented throughout the entire framework period between 2025 and 2029. These include Risk Communication and Community Engagement, Public Health Emergency and Disaster Response, Research, Innovation and Data and Innovative Financing. The continuous implementation of these pillars reflects the continuous nature of interventions that necessitates continuous effort to create lasting impact. The overall budget for the strategic framework is estimated at $482,494,500 spread across the six KRAs or pillars and five years of implementation, with the biggest share of the budget devoted to interventions under the Public Health Emergency and Disaster Response (25.18%) and National Health systems strengthening mechanisms (20.73%) pillars. Key budget assumptions include: Currency stability of the dollar, Minimal inflation over the 5year duration, member states buy-in and sustained statutory contributions to Africa CDC/Africa Union, minimal climate change-induced emergencies and sustained commitment by multilateral partners and identified donors. The estimated budget for the strategic framework, disaggregated by strategic pillar and activity, is presented.

Budget & Activities for Africa CDC's Strategic Framework on Climate Change and Health Implementation Plan

Strategic Pillars	Activities	Unit	USD Cost Per Unit	Frequency	2025	2026	2027	2028	2029	Total Budget Cost (USD)
Governance and Leadership One Health Multisectoral coordination mechanisms for climate change resilience at national and regional levels	Support establishment of regional One Health MCMs inclusive of climate change focal points led by RCCs and RECs	5	250000	1	1,250,000			1,250,000		2,500,000
	strengthen incorporation of Climate Change into Health Coordination Mechanisms	55	5,000	1	275,000	275,000	275,000	275,000	275,000	1,375,000
	Support Ministerial leadership programs for stronger one health governance and leadership for climate change	55	100000	1	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000	27,500,000
	Establish or Strengthen national Climate change and Health Working Groups	55	20000	1	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	5,500,000
	Embed Climate Change in International Cooperation	5	30000	1	150,000	150,000	150,000	150,000	150,000	750,000
	Facilitate African Health Ministerial participation in COP events to ensure countries lead national advocacy at global meetings	20	60000	1	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	6,000,000
	Advocate and support digitalization of climate change and health Data	15	6500	1	97,500	97,500	97,500	97,500	97,500	487,500
Sub- Total					9,572,500	8,322,500	8,322,500	9,572,500	8,322,500	44,112,500

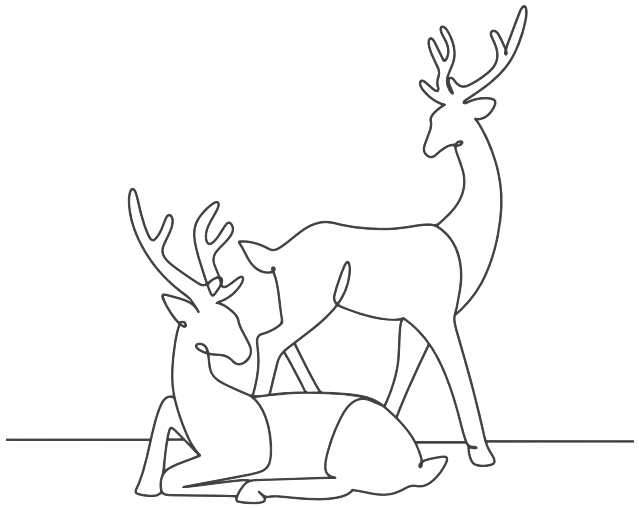
Strategic Pillars	Activities	Unit	USD Cost Per Unit	Frequency	2025	2026	2027	2028	2029	Total Budget Cost (USD)
Capacity Building	Create periodic continental and regional peer-to-peer Learning Workshops	20	50,000	1	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
	Develop Climate change and health training modules and materials	5	50,000	2	500,000	500,000	500,000	500,000	500,000	2,500,000
	Support national and subnational level trainings and capacity building for climate change and health	55	50,000	1	2,750,000	2,750,000	2,750,000	2,750,000	2,750,000	13,750,000
	Establishment of a Pool of Experts, support the maintenance of a database for climate experts RRTs in collaboration with AVoHC.	40	84,000	1	3,360,000			3,360,000		6,720,000
	Support establishment of national Climate change and health programs	20	100,000	1	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	10,000,000
	Develop/standardize capacity gaps assessment tools and conduct training needs Assessments	55	10,000	1	550,000			550,000		1,100,000
	Establish continental forums for and build capacity of CSOs, youth groups and non-state actors on advocacy for Climate Change and Health	55	10,000	2	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	5,500,000
	Support national Vulnerability and adaptation (V&A) Assessments capacity building and implementation using a one health approach	20	90,000	1	1,800,000	1,800,000	1,800,000	1,800,000	1,800,000	9,000,000
	Establish Community of Practice and community of practice platforms (e.g. workshops, training sessions, and webinars) for sharing lessons learnt.	50	10,000	1	500,000	500,000	500,000	500,000	500,000	2,500,000
	Support national workshops for development and review of Health National Adaptation Plans (HNAPs)	20	90,000	1	1,800,000	1,800,000	1,800,000	1,800,000	1,800,000	9,000,000
	Establish Regional Centers of Excellence for Climate and Health	5	150,000	1	750,000	750,000	750,000	750,000	750,000	3,750,000
Sub- Total					16,110,000	12,200,000	12,200,000	16,110,000	12,200,000	68,820,000

Strategic Pillars	Activities	Unit	USD Cost Per Unit	Frequency	2025	2026	2027	2028	2029	Total Budget Cost (USD)
Risk communication and community engagement	Development of Climate and Health Risk Communication Strategy for member states' adaptation	1	100,000	1	100,000	100,000	100,000	100,000	100,000	500,000
	Develop, standardize and translate communication Tools in all AU languages and Indigenous Knowledge and support adaptation at national levels	55	20,000	1	1,100,000			1,100,000		2,200,000
	Establishment of Africa Climate and Health Day and support national commemoration activities	55	50,000	1	2,750,000	2,750,000	2,750,000	2,750,000	2,750,000	13,750,000
	Engagement of local Communities by CSOs, youth group etc.	55	30,000	1	1,650,000	1,650,000	1,650,000	1,650,000	1,650,000	8,250,000
	Advocacy and awareness among decision and policy makers	55	4,500	1	247,500	247,500	247,500	247,500	247,500	1,237,500
	Engagements and training on Health Journalism and Climate-Health Communication by regions	5	100,000	1	500,000		-	500,000		1,000,000
		110	2500	1	275,000	275,000	275,000	275,000	275,000	1,375,000
	Media Programs for Climate and Health Awareness	55	5,000	1	275,000	275,000	275,000	275,000	275,000	1,375,000
	Youth engagement focused on Creating Climate and Health Content for Dissemination using social media platforms	55	5,000	1	275,000	275,000	275,000	275,000	275,000	1,375,000
	Annual KAP Surveys on Climate and Health Monitoring	55	10,000	1	550,000	550,000	550,000	550,000	550,000	2,750,000
Sub- Total					7,722,500	6,122,500	6,122,500	7,722,500	6,122,500	33,812,500

Strategic Pillars	Activities	Unit	USD Cost Per Unit	Frequency	2025	2026	2027	2028	2029	Total Budget Cost (USD)
Public Health Emergency and Disaster Response	Enable Climate-Sensitive EWARS	55	20000	1	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	5,500,000
	Support Integration of Climate Intelligence in national PHEOCs	55	200000	1	11,000,000	11,000,000	11,000,000	11,000,000	11,000,000	55,000,000
	Support Integration of Climate Intelligence in RCCs PHEOCs and Africa CDC HQ	6	200000	1	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	6,000,000
	Strengthen Environmental Surveillance through lab networks, EBS, genomic/ wastewater surveillance and meteorological surveillance	55	100000	1	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000	27,500,000
	Support Member States in conducting climate emergency simulation exercises and one health continency plans for climate sensitive threats	55	100000	1	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000	27,500,000
Sub- Total					24,300,000	24,300,000	24,300,000	24,300,000	24,300,000	121,500,000
Research, innovation and data	Support Innovative Technologies for Climate-Related Risks	55	5000	3	825,000	825,000	825,000	825,000	825,000	4,125,000
	Support Integration of Climate Data into DHIS 2 Platform	55	25000	3	4,125,000	4,125,000	4,125,000	4,125,000	4,125,000	20,625,000
	Establish regional Air Quality Monitoring Stations	5	250000	1	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	6,250,000
	Establish Africa CDC Climate Change and Health Research hub	1	1000000	1	1,000,000		1,000,000		1,000,000	3,000,000
	Establish Africa CDC Data modelling hub for climate change and early warning surveillance systems	1	1000000	1	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
	Strengthen legal frameworks and MoUs for ethical Data Sharing to ensure timely data sharing across sectors, countries and regions	5	50000	3	750,000	750,000	750,000	750,000	750,000	3,750,000
	Support annual scientific forum at the CPHIA focused on climate change, support African research	1	500000	1	500,000	500,000	500,000	500,000	500,000	2,500,000
Sub- Total					9,450,000	8,450,000	9,450,000	8,450,000	9,450,000	45,250,000

Strategic Pillars	Activities	Unit	USD Cost Per Unit	Frequency	2025	2026	2027	2028	2029	Total Budget Cost (USD)
Innovative Financing	Quarterly continental policy briefs on climate change and health	5	100000	1	500,000	500,000	500,000	500,000	500,000	2,500,000
	Incentivize Private Sector on Climate Health Funding- Annual 'Africa CDC Climate Change and Health fundraising dinner for a safer Africa	1	50,000	1	50,000	50,000	50,000	50,000	50,000	250,000
	Economic use case of climate change and health financing	1	100000	1	100,000	100,000	100,000	100,000	100,000	500,000
	Convene annual Heads of State high level Forum on Climate Change and health	1	500000	1	500,000	500,000	500,000	500,000	500,000	2,500,000
	Annual Africa Climate Change and Health Side event at COP	1	500000	1	500,000	500,000	500,000	500,000	500,000	2,500,000
	Provide technical assistance to the 55 Member States in conducting cost assessments and cost impacts of climate change on health	55	50,000	1	2,750,000	2,750,000	2,750,000	2,750,000	2,750,000	13,750,000
Sub- Total					4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	22,000,000
National Health systems strengthening mechanisms for climate change resilience and stockpiling of emergency commodities.	Support national climate-smart health systems improving WASH	10	500,000	1	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	25,000,000
	Support national climate-smart health systems (improving medical health waste management)	10	500,000	1	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	25,000,000
	Strengthening emergency capacities including stockpiling for medical countermeasures such as vaccines, therapeutics and diagnostics for climate change related outbreaks.	10	500,000	1	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	25,000,000
	Support NPHIs in building climate change resilience health systems	10	500,000	1	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	25,000,000
Sub- Total					20,000,000	20,000,000	20,000,000	20,000,000	20,000,000	100,000,000

Strategic Pillars	Activities	Unit	USD Cost Per Unit	Frequency	2025	2026	2027	2028	2029	Total Budget Cost (USD)
	Administration and Overhead Fees (10% of the Total Budget)	-	-	-	9,155,500	8,379,500	8,479,500	9,055,500	8,479,500	43,549,500
	Africa CDC Climate change and Health Team	-	-	-	-	-	-	-	-	-
Africa CDC ADMIN	1. Principal Technical Officer	1	140,000	1	140,000	140,000	140,000	140,000	140,000	700,000
	2. Senior Technical Officer	2	125,000	1	250,000	250,000	250,000	250,000	250,000	1,250,000
	3. Technical Officer	2	115,000	1	230,000	230,000	230,000	230,000	230,000	1,150,000
	4. Administration Assistant	1	70,000	1	70,000	70,000	70,000	70,000	70,000	350,000
Sub- Total					690,000	690,000	690,000	690,000	690,000	3,450,000
GRAND TOTAL COST	-	-	-	-	101,400,500	92,864,500	93,964,500	100,300,500	93,964,500	482,494,500



7. Monitoring and Evaluation

7.1. Monitoring Framework

Monitoring will be an essential component of the Climate Change and Health Strategic Framework and is designed to systematically track the progress of the various interventions and activities implemented under the framework. It will provide continuous oversight, allowing for real-time adjustments to ensure alignment with strategic objectives. The monitoring framework will rely on well-defined indicators that will measure progress toward desired health outcomes in response to climate change. Three categories of indicators related to climate-health monitoring will be crucial. These are: vulnerability and exposure to climate variability and change; indicators of the health impacts of climate change; and indicators of adaptation and health system resilience. Specifically, the M&E framework will track metrics like the reduction in climate-sensitive disease incidences, improved access to climate-resilient healthcare services, and the adoption of adaptive practices within health facilities and vulnerable communities. Regular data collection will be done through surveys, health information systems, and direct stakeholder engagement to ensure the necessary data is obtained. This approach will facilitate the identification of any emerging challenges or deviations from the intended pathway, allowing for timely corrective actions.

The monitoring activities will involve setting baselines, establishing benchmarks, and providing periodic progress reports to stakeholders. These reports will offer insight into the success of interventions, gaps that require adjustments and additional resources, and specific areas that need further policy support. Effective monitoring and reporting will require collaboration among all relevant actors, including public health institutions, government agencies, local communities, academic institutions, and international partners.

The evaluation framework will be designed to answer critical questions, such as whether strategic interventions are reducing vulnerabilities to climate-related health risks and improving the resilience of health systems. Qualitative data will be instrumental in understanding the enablers and challenges to effective implementation of climate-health initiatives, emphasizing driving factors for the realization of achieved milestones. Indicators used for evaluation may include reductions in morbidity and mortality related to climate-sensitive diseases, improvements in community-level adaptive capacities, and enhanced public awareness regarding climate change impacts on health. The findings of the evaluations will be communicated through detailed reports and stakeholder workshops, which will provide an opportunity for feedback and the co-creation of recommendations. Importantly, these evaluations will help determine the scalability of successful interventions and provide evidence for mobilizing further resources and informing policy formulation.

As an aide to the assessment of progress made in implementing the strategic framework, a set of high-level indicators has been proposed for each of the six strategic pillars or key result areas (Annex 1). Additionally, a monitoring, evaluation, and learning (MEAL) template has been provided for member states to adapt and modify for use in evaluating progress of member state-level implementation of customized interventions associated with this strategic framework (Annex 2).

7.2. Stakeholder Involvement in Monitoring and Evaluation

The monitoring and evaluation (M&E) process is participatory, involving diverse stakeholders ranging from government bodies and healthcare providers to civil society and affected communities. Engaging stakeholders at every stage of M&E will ensure that the process is inclusive and accounts for varying perspectives and needs. Community-based monitoring mechanisms will be vital to ensure that local knowledge is incorporated and that the most vulnerable populations are adequately represented, with customized interventions tailored to their needs. Stakeholder workshops and focus groups will also provide platforms for sharing findings, discussing challenges, and making necessary adjustments.

Partnerships with academic institutions and research organizations will be essential for technical support, particularly in designing indicators, data analysis, interpreting findings,

and preparing summaries and policy briefs with key messages for non-technical policy makers. These partnerships will contribute to capacity building among local institutions, empowering them to independently monitor and evaluate climate-health interventions in the future. The participation of these stakeholders in M&E will foster ownership of the strategic framework and its outcomes, which will be crucial for ensuring the sustainability of interventions beyond the lifespan of the initial project.

7.3. Learning and Adaptive Management

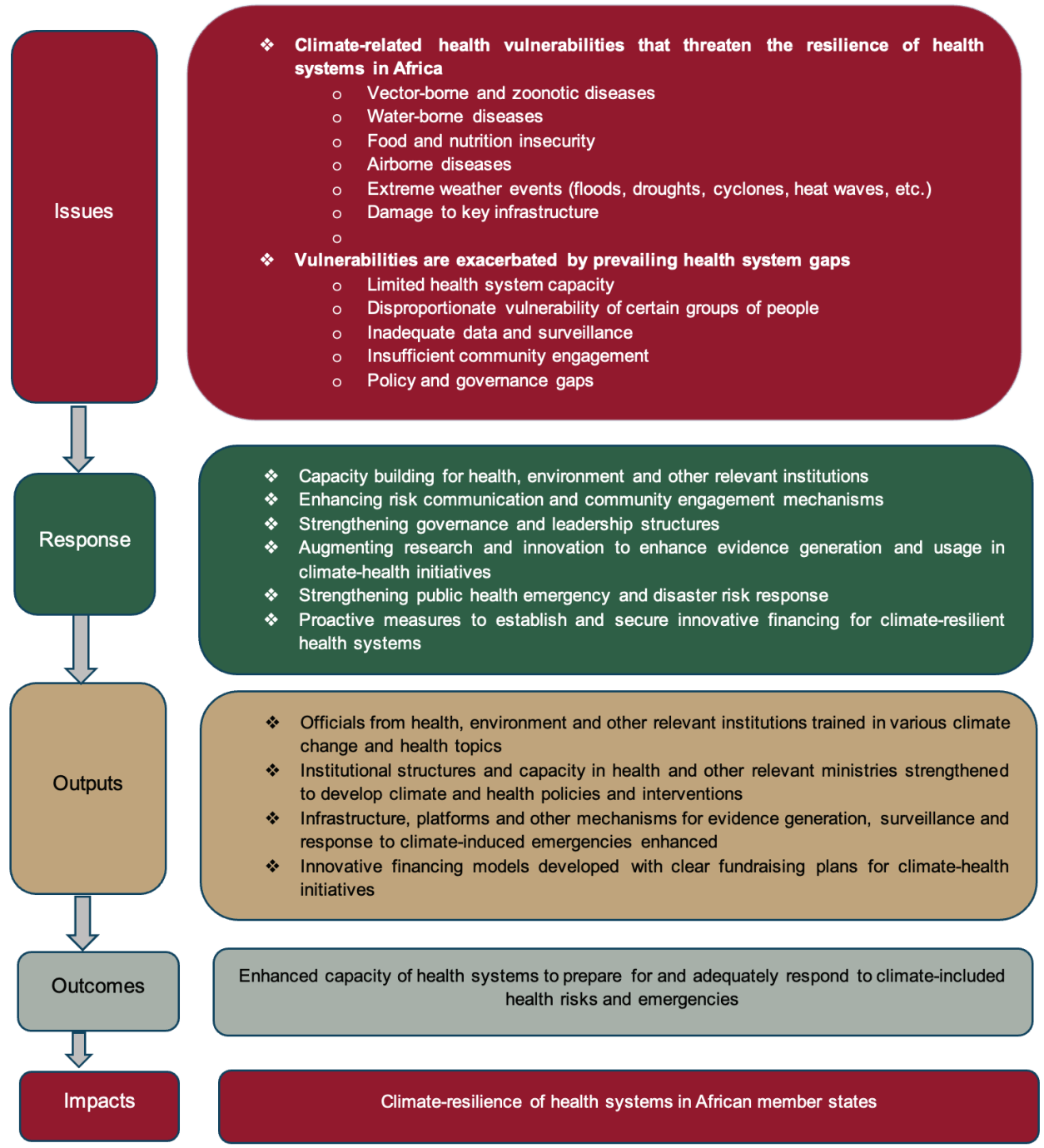
The M&E framework will include mechanisms for learning and adaptive management, which will be key to addressing the dynamic nature of climate change and its impacts on health. By continuously analyzing data and assessing progress, the framework will ensure that lessons learned are systematically captured and fed back into the implementation process. This approach will allow for iterative adjustments to interventions, policies, and resource allocation to enhance their effectiveness. Learning sessions, such as reflection workshops and knowledge-sharing forums, will be conducted regularly to disseminate insights gained from M&E activities among all stakeholders. Adaptive management will be particularly important in the context of climate change, where conditions will be highly variable and will require flexible, responsive strategies.

The aim of monitoring and evaluation within this strategic framework will be not only to measure success but also to foster a culture of accountability, transparency, evidence-based decision making, and continuous learning. Through rigorous M&E processes, the framework will document and demonstrate its contributions to reducing climate-related health risks, thereby providing evidence for scaling up successful initiatives and mobilizing future investments in climate and health resilience.

7.4. Theory of Change

This strategic framework proposes a theory of change through which health systems in Africa will be strengthened to be more resilient to the impending threat of climate change. With the current trend of climate change, climate variability and associated extreme weather events, the vulnerability of health systems is anticipated to worsen in coming decades if no measures are put in place to reverse the trend. Key climate-related health risks and impacts already observed in Africa include vector-borne and zoonotic diseases, water-borne diseases, food and nutrition insecurity, airborne diseases, damage to key infrastructure, and extreme weather events – floods, cyclones, droughts, and heat waves. These risks are exacerbated by prevailing health system gaps such as limited health system capacity, disproportionate vulnerability of certain groups of people, inadequate data and surveillance lack of sectoral integration, insufficient community engagement, policy and governance gaps, and inadequate funding and resources.

In response to these issues, the Continental Climate Change and Health Strategic Framework attempts to build the climate-resilience of health systems in Africa through targeted and evidence-based interventions spanning across six key result areas or strategic pillars. These are: capacity building, risk communication and community engagement, governance and leadership, research and innovation, public health emergency and disaster response, and innovative financing. By continuously engaging with stakeholders at all levels – continental, regional, member state and sub-national – the framework is expected to build the capacity of individuals, communities, and member states to integrate climate information in health system planning and implementation, resulting in strengthened institutional capacities and climate-resilience of health systems. The mechanism of this change from high vulnerability to enhanced climate-resilience is elaborated in the theory of change diagram.



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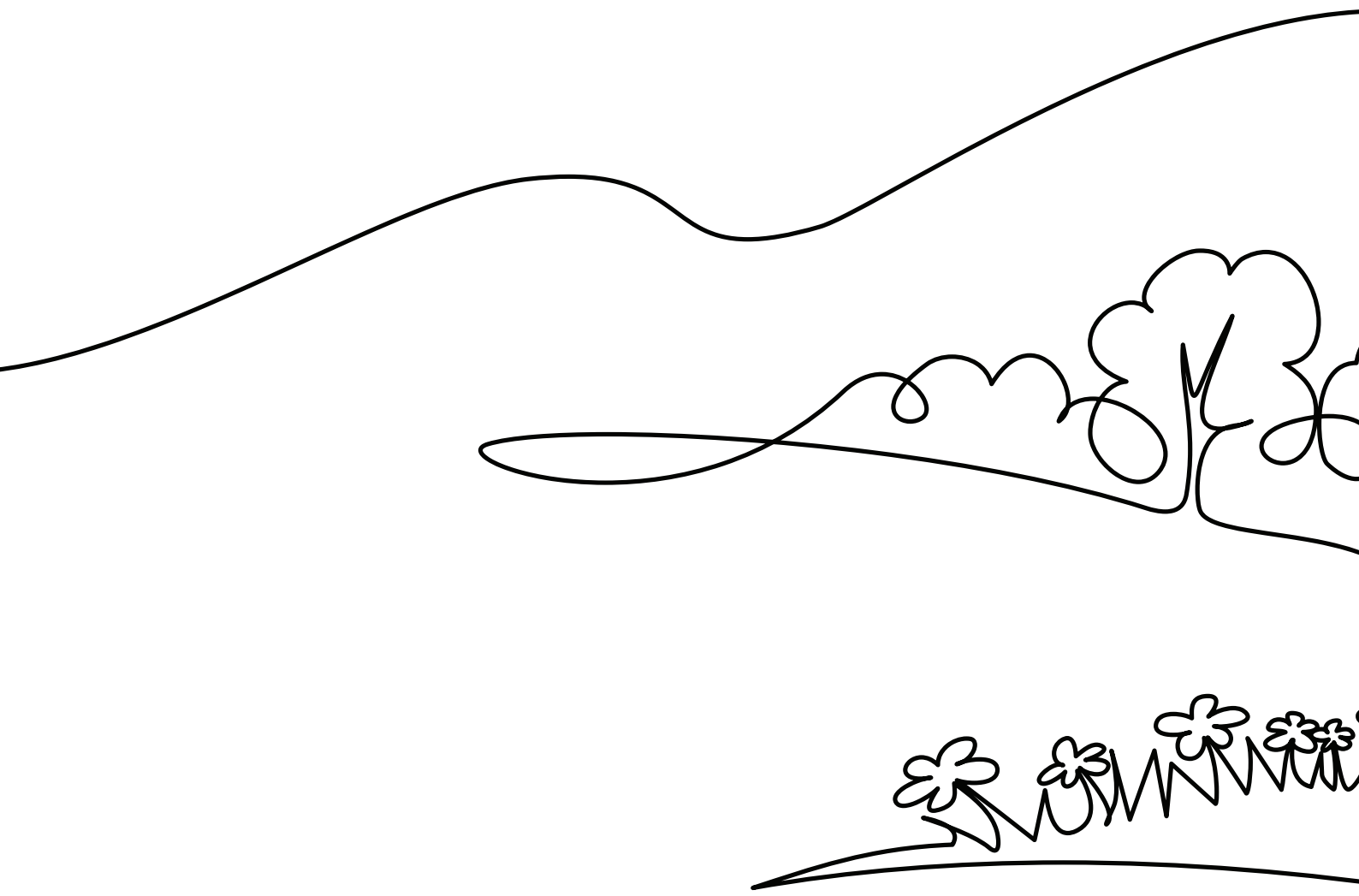

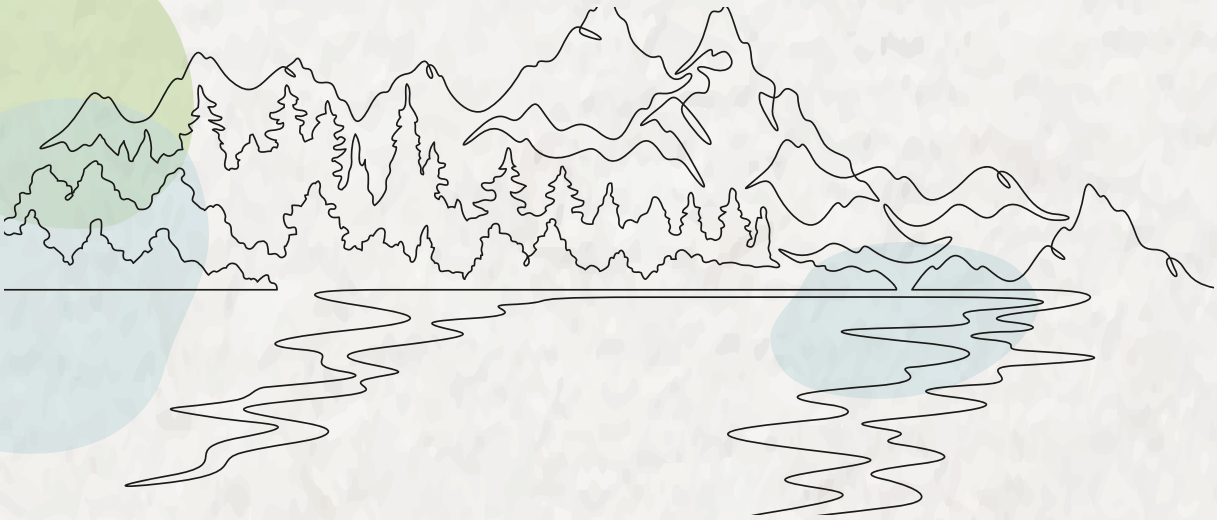

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Africa CDC is a continental autonomous health agency of the African Union established to support public health initiatives of Member States and strengthen the capacity of their public health institutions to detect, prevent, control and respond quickly and effectively to disease threats.

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