Adapting Together, Thriving Tomorrow

Health National Adaptation Plan

for Climate Change

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UN environment programme

GREEN CLIMATE FUND

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Document Information

Title: Health Adaptation Plan for Climate Change

Prepared for: Government of Ghana with support from GCF and UNEP

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This symbol in the NAP Logo represents the Health Sector and the Health National Adaptation Plan.

List of Abbreviations

CVD	Cardiovascular Diseases
DRM	Disaster Relief Management
HCW	Health Care Waste
HNAP	Health National Adaptation Plan
IDSR	Integrated Disease Surveillance Response
IRS	Indoor Residual Spraying
IVM	Integrated Vector Management
IPCC	Intergovernmental Panel on Climate Change
JTT	Joint Task Team for the Health and Environment Strategic Alliance
LLIN	Long-Lasting Insecticidal Net
NCCC	National Climate Change Coordinating Committee
NDC	Nationally Determined Commitments
NAP	National Adaptation Plan (of the UNFCCC)
RTI	Respiratory Tract Infection
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
V&A	Vulnerability and Adaptation
WHO	World Health Organization
PHEMC	Public Health Emergency Management Committee

1. Introduction

1.1. Background

Climate change, including climate variability, has multiple impacts on human health - both direct and indirect. The World Health Organization (WHO) estimates that climate change may already be causing over 150,000 deaths globally per year and long-term consequences are likely to act through changes in natural ecosystems and their impacts on disease vectors, waterborne pathogens, and contaminants.

We now know from global assessments that the resilience of the health and related sectors in dealing with climate-related diseases will be critical in determining the degree to which climate hazards will affect human health and wellbeing.

It has been predicted that developing countries will bear the brunt of the effects of climate change even though they have less capacity to adapt. Already Africa experiences an extremely high burden of climate-sensitive diseases, including 90% of the global burden of malaria, and the highest per capita burden of malnutrition and diarrhoea.

Despite the increasing understanding of health risks associated with climate change, its public health impacts are still not adequately reflected in the national climate change adaptation as well as development plans of most African countries.

For instance, many of our health institutions still have limited capacity to respond to climate change related health risks like major meningitis and cholera outbreaks. There are still inadequate systems for surveillance, early warning and response for climate sensitive diseases. There is also lack of systematic IEC on climate change-related health risks. The bottom-line is the health sector lacks a strategic policy and guidelines for building resilience to climate change.

There has been limited identification and implementation of strategies, policies, and measures to protect the health of the most vulnerable populations. The relatively recent appreciation of the links between climate change and health, means that many existing public health related policies and practices nationally do not reflect measures taken to manage the current and future burden of climate change-related diseases and disasters.

In response to the growing need for a comprehensive public health response, the WHO Regional Committee for Africa (AFRO) proposed a Framework for Public Health Adaptation to Climate Change in the African Region to its member states, urging them to develop and implement public Health National Adaptation Plans (HNAPs) for climate change based on an essential package of public health of interventions that includes vulnerability assessments, capacity building, integrated environment and health surveillance, awareness raising and social mobilization, public health-oriented environmental management, scaling-up of existing public health interventions, strengthening of partnerships, promotion of research; and establishment of the relevant inter-sectoral coordination mechanisms.

It is also important to recognize that to achieve any meaningful adaptation or mitigation of climate change impacts on the health sector will also depend on the actions or inactions of other sector policies and activities that impact on climate change. Actions taken by these sectors will therefore have co-health benefits. For instance, we know that most sources of greenhouse gases (GHG) emissions also emit 'conventional' air pollutants which have negative impact on health. According to the 2010 WHO Global Burden of Disease country report on Ghana, household air pollution from solid fuels is the leading risk factor, accounting for most of the disease burden of Ghana. By promoting climate change mitigation measures to reduce emission of GHGs like the promotion of cleaner fuels and stoves, the energy policy of Ghana also has co-benefits for human health.

It is therefore expected that this action plan will maximize synergies across sectors, mainly across those that determine health, such as the food, water,

energy and housing sectors and facilitate the mainstreaming of climate change health risks into their plans, programmes and policies.

1.2. Country outlook

In Ghana, a national climate change vulnerability and adaptation assessment in 2008 concluded that the country faces deteriorating human health because of increased incidence of diseases and reduced access to water and food compounded by the disruption of the delivery of health services, e.g. flooding of health facilities, and the loss of transport infrastructure.

Some of the predictions for Ghana following this assessment suggests that rainfall would decrease on average by 2.8%, 10.9% and 18.6% by 2020, 2050 and 2080 respectively in all agro-ecological zones except the rainforest zone, where rainfall may increase.

Another study in 2009 also predicted a cyclical rainfall pattern in Ghana over the period 2006 to 2050 for all regions, with high rainfall levels followed by a drought every decade or so.

The Volta basin is also expected to experience significant reduction in inflows which can have adverse implications for the management of shared water resources, (particularly with neighbouring Burkina Faso), as well as vector borne disease habitats, food crop production and safe drinking water availability.

Fairly wide fluctuations in annual temperature are also expected in all regions of Ghana but mostly in the three northern regions. A temperature rise of 2.2 to 2.3oC has been forecasted by 2050 which is higher than the threshold for dangerous climate change as defined by the United Nations Framework Convention on Climate Change (UNFCCC). This is expected to have implications for cold chain, blood supply and vaccination within our health system. The impacts of climate risks are likely to magnify the uneven social and spatial distribution of risk in Ghana, and possibly amplify poverty in the Northern regions.

1.3. Country level coordination

Ghana is a signatory to the UNFCCC and has played an internationally recognized role through the UNFCCC negotiations and there is emerging commitment more broadly at senior political levels for tackling climate change.

There is a National Climate Change Committee (NCCC) responsible for coordination of all climate-related initiatives in the country; essentially adaptation measures. A national Climate Change Policy Framework (NCCPF) has also been developed with government, private sector, civil society, research organisations and NGO participation as an integrated response to climate change.

Ghana is also a signatory to the Libreville Declaration (2008) and its follow-up Luanda Commitment (2011) which among other objectives envisages that intersectoral action on 'Climate change and Health' (as well as other activities) will be coordinated by a Health, Environment Strategic Alliance (HESA) committee and outputs relayed to the NCCC.

So far, this committee has been able to prepare National Plans of Joint Actions between the Health and Environment sectors which involve collaboration in implementation of climate change related activities. Currently this committee, under the auspices of WHO, is expected to work on a draft national plan of action for public health adaptation to climate change and adapt it to the national context.

The National Disaster Management Organisation (NADMO), which is an institution responsible for the management of disasters and similar emergencies, has also developed a national policy and plan of action for Disaster risk reduction and climate change adaptation in accordance with the Hyogo Framework of Action. This is a coordinated national framework with the overall objective of making the country resilient to natural and man-made disasters including climate change.

Another major achievement in Ghana's health sector's process of adaptation to climate change has been the just ended Government of Ghana/ UNDP/GEF

Climate Change and Health project which was piloted in three districts in Ghana to “To identify, implement, monitor, and evaluate adaptations to reduce current and likely future burdens of malaria, diarrheal diseases, and meningococcal meningitis in Ghana”. This project has left behind information on the climate change and health nexus, suggested mechanisms to be instituted to coordinate climate change and health activities and suggestions on interventions for the new demands climate change is posing on the disease surveillance and monitoring and evaluation systems, including measuring the resilience of health systems and health infrastructure.

1.4. Health within the NAP process: the HNAP

The national adaptation plan (NAP) process was established under the Cancun Adaptation Framework (CAF). It enables Parties to formulate and implement national adaptation plans (NAPs) as a means of identifying medium- and long-term adaptation needs and developing and implementing strategies and programmes to address those needs. It is a continuous, progressive and iterative process which follows a country-driven, gender-sensitive, participatory and fully transparent approach.

A Health National Adaptation Plan (HNAP) is defined by the World Health Organization (WHO) as a plan developed by a country’s Ministry of Health as part of the NAP process. HNAP development is critical for: ensuring prioritization of action to address the health impacts of climate change at all levels of planning; linking the health sector to national and international climate change agendas, including an increased emphasis on health co-benefits of mitigation and adaptation actions in other sectors; promoting and facilitating coordinated and inclusive climate change and health planning among health stakeholders at different levels of government and across health-determining sectors; and enhancing health sector access to climate funding.

The HNAP facilitates integration of health adaptation to climate change into national health planning strategies, processes, and monitoring systems. It is also to provide for a flexible and context-specific approach to health adaptation to climate change.

In 2024, the MoH received funding support from the World Bank to develop the Ghana Health National Adaptation Plan that outlines actions based on the results of a climate and health vulnerability and adaptation assessment carried out by the MOH and GHS from 2023 to 2024 to build a climate-resilient health and climate-resilient health systems that can anticipate, absorb and transform in a changing climate to protect population health while improving the management of other health threats.

1.5. Nationally Determined Contributions (NDCs)

Countries across the globe committed to create a new international climate agreement by the conclusion of the U.N. Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP21) in Paris in December 2015. In preparation, countries have agreed to publicly outline what post-2020 climate actions they intend to undertake under a new international agreement, known as their Nationally Determined Contributions (NDCs). The NDCs will largely determine whether the world achieves an ambitious 2015 agreement and is put on a path toward a low-carbon, climate-resilient future. In the lead up to COP 21, Parties were called upon to submit their intended nationally determined contributions (INDCs) - interim NDCs, in effect, intended to help create momentum for the Agreement by showcasing how emission reductions would be possible.

The unambiguous goal which originated from the recent Paris Agreement clichéd at COP21 was on a process for holding global warming to “well below 2°C” and to pursue efforts to limit the temperature increase to 1.5°C above preindustrial levels. Key to that process is the bottom-up submission by Parties of “nationally determined contributions” (NDCs). NDCs are high-level policy plans setting out

the approach each country will take to limit global warming to the “well below” 2°C goal.

1.6. Conclusion

Finally, this action plan has been built upon the WHO Operational framework for building climate resilient health systems (WHO, 2015); as well as the WHO AFRO framework on climate change and health “Adaptation to climate change in Africa: Plan of action 2012–2016”, to essentially guide the implementation of adaptive and mitigation responses by the health sector and its collaborating MDAs in Ghana to address the potential adverse impacts of climate change in the short, medium and long term. By the submission of this plan to MESTI, it is expected that MESTI and the EPA who are leading the overall NAP and NDCs process, will facilitate the incorporation of the “Health National Adaptation plan” into the NAP and the NDCs.

2. The HNAP and its components

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Component 1: Leadership and governance						
Governance	Inadequate coordination and collaboration among key stakeholders on CCH adaption. Limited participation of key stakeholders in the formulation of CCH adaptive strategies.	National Public Policy Formulation Guidelines -2020. National Policy and Legislative Almanac has been developed (Website/ Platform).	L	Establish a multi-sectoral CC&H steering committee at the MoH Assign Regional OEH coordinators as Regional focal persons for climate change.	MOH/GHS	MESTI, EPA, MOF, MOFA, EPA, MSWR, MLNR, MoH, Gmet, NDPC
Policies	CCH issues are inadequately incorporated in our national policies (For example NCDs are not detailed enough).	The Coordinated Programme of Economic and Social Development Policy -2021-2025)	M	Integrate the HNAP into the overall NAP and NDCs. Incorporate CC&H issues in the Coordinated Programme of Economic and Social Development Policy	MOH/GHS	MESTI, EPA, MOF, MOFA, EPA, MSWR, MLNR, MoH, Gmet, NDPC
	There is no standalone climate change and health policy and action plan.	National Climate Change Adaptation Strategy	L	Health sector to develop and adopt the Ghana Health sector Climate Change Policy and the Health National Adaptation Plan for climate change (the H-NAP)	MOH/ EPA	MoH and its Agencies, MESTI, EPA, NAS, MOF, MOFA, MSWR, MLNR, GMet,
	Limited legal framework to regulate the CCH activities	Public Health Act 851 (2012) Environmental Protection Bill 2023 (Draft submitted to cabinet)	M	Revise Public Health Act to integrate climate change risks (Review on-going).	MOH/GHS	MESTI, EPA, MOF, MOFA, EPA, MSWR, MLNR, MoH, Gmet, Parliament.
				Public education on laws, legislations, regulations, and standards	MOH/GHS	NCCE

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Multilateral, Bilateral, and national-level collaboration.	Inadequate comprehensive climate change adaptation coordination mechanism in health sector.	Medium-Term National Development Policy Framework (2022-2025). Guidelines for Preparing Sector District Medium-Term Development Plan (2022-2025)	M	Incorporate CC&H issues into the Medium-Term National Development Policy Framework (2026-2029) Consider and mainstream CC&H as an emerging issue in the Guideline for Sectors to incorporate into their sector plans (2026-2029). Review other existing Policies on Climate change to include health related issues designated within MoH and GHS.	MOH/GHS	Relevant MMDAs, MESTI, EPA, NAS, MOF, MOFA, EPA, MSWR, MLNR, GMet, MoH, MDAS and RCs
	Limited coordination and collaboration among health and health-related sectors. Limited desk on CCH within the institutional framework of the health sector	National Climate Change Policy (2013) Ghana National Climate Change Policy Action Programme for Implementation (2015-2020)	M	Allocate budget for specific workplans to the designated climate change and health focal points. Sponsor Climate Change and health focal persons on capacity building and training program to build capacity.	MOH/GHS	Relevant MMDAs, MESTI, EPA, NAS, MOF, MOFA, EPA, MSWR, MLNR, GMet, MoH
	Weak coordination and institutional arrangement within the health sector on CC	Ghana's Updated Nationally Determined Contributions – 2021 National Adaptation Plan	M	Climate change and health focal points to collaborate with relevant climate-sensitive health programmes (e.g. vector-borne diseases, nutrition, infectious diseases, and disaster risk reduction) to build resilience of programmes.	MOH/GHS	Relevant MMDAs, MESTI, EPA, NAS, MOF, MOFA, EPA, MSWR, MLNR, GMet, MoH
	Limited collaboration and engagement at global, regional and national levels on CC Limited capacity to access international support (Human Resource, Technology and Finance) Limited cross-sectorial collaboration.	Carbon Market and Non-Markets	M	Strengthen partnerships with global partners for improved resource mobilization for public health response to CC. Health and Climate Change related issues should be incorporated into the framework for Carbon Market and Non-Markets Promote inter-country experience sharing and information exchange. Health sector to sponsor representation in main climate change processes at national, regional, and global levels (e.g. UNFCCC meetings and Conference of the Parties (COP).	MoH/GHS	Relevant MMDAs, MESTI, EPA, NAS, MOF, MOFA, EPA, MSWR, MLNR, GMet, MoH

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Component 2: Health Workforce						
Human resource capacity building for health sector adaptation to climate change.	Despite an increase in the magnitude of the health workforce in the country over time, the country faces a shortfall in specialized areas related to climate issues e.g. skin, respiratory, allergies. The distribution of the health workforce is inequitable with resources concentrated in the urban areas of the country.	National Health Human Resource Policy and Strategy -2020. GHS Health Sector Staffing Norm (2014) National Health Human Resource Policy and Strategy -2020.	L	Include planning for the size of the health workforce, the skill mixes, and the geographical distribution, particularly urban-rural disparities, to meet climate related health issues. Use the portal for posting to address the maldistribution of newly recruited health workforce.	MOH, GHS	Relevant MMDAs eg MESTI, EPA, NAS, MOF, MOFA, , MSWR, MLNR, etc.
	Inadequate workforce training initiatives relevant to climate change and health.	National Health Human Resource Policy and Strategy -2020.	L	Prepare and implement capacity-building plans specific to climate change adaptation and mitigation to fill the gaps identified from vulnerability assessments.	MOH, GHS	MESTI, EPA,
	Lack of integration of CC and health-related issues in educational curriculum.	National Health Human Resource Policy and Strategy -2020.	L	Integrate climate change and related Health issues into curriculum of basic school and health training institutions (e.g. nurse, physician and allied health). Introduction of CPD course on CC by regulatory agencies and other Professional Associations.	MOH, GHS	GES, MDC, PC, AHPC, NTI, NMTC
	Limited training courses on health vulnerability, impact assessment, and adaptation for health workers.	GHS Occupational and Environmental Health Unit.	L	Institutionalize training on health vulnerability, impact assessment, adaptation assessment, communication, and management of public health impacts of climate change for health workers.	MOH, GHS	
	Lack of comprehensive database on staff with knowledge on CC in Health. Inadequate organizational capacity assessment on human capacity to address health vulnerability and climate impact.	Climate Health Vulnerability and Adaptation Assessments (World Bank, WHO)	L	Develop a database to capture information on staff with expertise and knowledge in CC in health.	MOH, GHS	EPA
Organizational capacity development	Lack of medium to long-term strategy/plan to train and deploy health workers in response to climate-resilient and health-related emergencies.	National Climate Health Adaptation Plan.	L	Develop national and regional contingency plans for the deployment of sufficient health personnel in case of acute shocks, such as extreme weather events and outbreaks developed at the relevant level (i.e. national, regional, district).	MOH, GHS	EPA

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Communications and awareness raising	Limited awareness creation in CC and Health	MOH National Health Promotion Strategy (2022-2026)	L	Training on gender-sensitive CC&H communication strategy and implement it, outlining the scope of information for diverse audiences (e.g. media, public, health personnel and other sectors) and events, including who should communicate, and the means of communication.	MOH, GHS	Relevant MMDAs, MESTI, EPA, NAS, MOF, MOFA, EPA, MSWR, MLNR, etc
Component 3: Climate and health financing						
Health-specific funding mechanisms.	Inadequate funding for the development of CCH policies, programs, strategies etc. Inadequate funding for the implementation of CC&H, plans and programs.	National Health Financing Strategy-2023-2030 Health Sector Medium-Term Development Plan 2022-2025	L	Mobilize resources to fund development and implementation of climate change global commitment, policies, frameworks and strategies	MoH, GHS	MoF/Donor Partners, NDPC, MoF
		National Health Financing Strategy-2023-2030. Health Sector Medium-Term Development Plan 202 2-2025. National Health Insurance Scheme Universal Health Coverage, 2020-2030.	L	Develop investment plans to implement prioritized HNAP actions. Develop Health and Climate change expenditure tracking tool	MoH/GHS	EPA, Donor Partners, NDPC, MoF
Funding for sectors influencing health.	Limited Funding for collaboration with other sectors implementing climate change and health issues.	Universal Health Coverage, 2020-2030.	L	Develop CC&H tools for screening proposals for funding projects and programmes to ensure inclusion of key sectors. As a criterion for investment, MOH/GHS should systematically screen proposals of investors in key health determining sectors, such as water and sanitation, and food and nutrition security etc. to assess for climate sensitive health impacts. Monitor the health impacts of climate change in programmes funded through financial mechanisms specific to health-determining sectors.	MoH/GHS	MOFA, MSWR, MGCSP, NDPC, EPA, MOF

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Climate change funding streams	Inadequate Funding streams specifically for the dealing with climate change and health issues. Limited technical capacity needed to access available international funding streams for climate change and health issues.	Global Climate Fund: Enhancing Direct Access National Designated Authority, Revised Operational Manual.	L	Create opportunities for increasing sources of funds for building health adaptive capacity such as GoG budget, Vertical Climate Trust Funds, Bilateral & Multilateral Engagements, Carbon Market, Public Private Partnership model, Innovative Finance Sources (Green Credit/Bonds) etc Organize training periodically to enhance and build the technical capacity of personnel from heath sector to access global CC funding streams.	MoH/GHS	MoF/MESTI/NDPC/ Donor Partners
Component 4: Climate resilient and sustainable technologies and infrastructure						
Adaptation of current infrastructures, technologies, and processes.	Limited number of health facilities adaptive enough to withstand extreme weather events.	Ghana Building Codes: Building and Construction-2018 Ghana Health Infrastructure Classification and Standards (Draft)	L	Ensure that specifications for siting/ construction of health facilities and providing energy, water and sanitation facilities are revised in line with projected climate risks.	MOH, GHS, Ghana Standard Authority (GSA), NRA, NAS & HeFRA	MoEn, MoWH, MSWR, MMDA's, NADMO, EPA, GNFS
	Various national policy documents mention the need to strengthen health facilities and "climate proof" existing health infrastructure, though concrete steps need to be taken to further these strategies.	National Climate Change Policy, NAP, NDCs	M	Future health infrastructure should be designed with a climate-proof concept (Green concept)	MOH/GHS	MoEn, MoWH, MSWR, MMDA's, NADMO, EPA, GNFS
	No assessments have been conducted to determine the climate resilience of health facilities in the country		L L L	Build the capacity of MOH/GHS to periodically organize climate change V&A assessment for prioritized health care facilities per region to address capacity gaps for managing climate related health emergencies. Conduct a campaign on Climate safe/ resilient Hospitals and establish safety accreditation for Hospitals.	Estates units of MOH/GHS, HeFRA	MMDAs, EPA, GSA
	There is limited information on the frequency of stock outs of drugs used to prevent and manage common climate sensitive conditions.	Nil		Develop a robust drug information system for drugs used in the management of Climate sensitive diseases	MOH/GHS	FDA

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
	Non-availability of a national-level health infrastructure Plan. Lack of awareness on management of heat stress in health facilities in the Northern part of Ghana. Limited supply of safe-water, conservation and inadequate sanitation and vaccine cold chain in some health facilities. There is no systematic reporting on health facilities being flooded due to extreme weather events Some health facilities have access cut off due to flooding There is limited information/data on the state of health infrastructure	Ghana Health Infrastructure Classification and Standards-(Draft)		Accelerate the progress of the health infrastructure plan for its adaptation and its implementation.	MOH, GHS, HeFRA, FDA, GSA, GRA	GNFS, ECG, GWCL, EPA, MMDAs & Min. of Roads & Highways
				Develop guidelines for the management of heat stress in the workplace, e.g. modification of work hours, fluid intake, cool shower etc. Create awareness on management of heat stress.	MOH, GHS, NAS & HeFRA	GES, Min. of Info. & NCA.
				Promote the use of technology that provides safe water supply, ensures water conservation, adequate sanitation, and maintains the vaccine cold chain in health facilities.	MOH, GHS & HeFRA	GWCL, EPA & Min. of Sanitation
				Estate management officers to systematically report on: health facilities being flooded due to extreme weather events. inaccessible health facilities due to flooding.	MOH, GHS & HeFRA	NADMO, MMDAs & EPA
				Capacity building for sectors & agencies mandated to provide adequate information /data on the state of health infrastructure.	MOH, GHS & HeFRA	

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
	Limited knowledge, experience, and resource capacity (including human, material, financial, supplies chain, and logistics) to manage flood risk in health facilities.	Ghana Building Codes: Building and Construction-2018 Ghana Health Infrastructure Classification and Standards-**(Draft)**	M	Train estate managers in the management of flood-related issues in health facilities. Accelerate the development, adoption and implementation of a plan for Ghana Health Infrastructure Classification and Standards	MOH, GHS & HeFRA	NADMO, EPA & MMDAs
	Inadequate collaboration with the regional government/ agencies (e.g. NADMO) around policy making, planning and implementation and to support vulnerable population to actively participate in flood risk reduction management.	Health vulnerability & adaptation assessment, 2024 Ghana NADMO Act (Act 927) 2016 Ghana NADMO Act	L	MOH/GHS to actively participate in disaster and risk reduction meetings of NADMO.	MOH & GHS	NADMO, MMDAs & EPA
	Inadequate protection and insulation against moisture and Mold Many health facilities with secret roof designs are leaking	Ghana Building Codes: Building and Construction-2018 Ghana Health Infrastructure Classification and Standards-(Draft)	L	Accelerate progress of plan for Ghana Health Infrastructure Classification and Standards for its to ensure the use of DPM and application of DPC on new and existing health facilities. HCFs with adoption and implementation leaking roofs require maintenance with leak-proof material to insulate against rainfall. Regular planned maintenance.	MOH, GHS & HeFRA	MMDAs
Promotion of climate resilient and sustainable technologies and infrastructure.	Availability of diagnostic tools, vaccine, and treatment available at most health facilities is not yet targeted at addressing health risks of climate change.		L	Promote the use of non-incineration technology for treatment of Health care waste from the health sector to reduce harmful emissions (as well as GHGs).	MOH/GHS	MSWR, EPA
				Promote innovative use of technology to enhance community participation in management of climate-sensitive diseases and disaster risk reduction (e.g. Use of community radio, mobile telephones etc. to facilitate patient referral or management).	MOH/GHS	NADMO, Academia

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
				Improve capacity building of health care workers using climate services and information. Make use of early detection tools to identify changing disease incidence risk mapping and climate-informed early warning systems. New technologies such as e-health or satellite imagery to improve health system performance.	MOH/GHS	NADMO, Academia
	Very few health facilities are using renewable energy sources such as solar energy.		L	Promote the use of renewable energy sources such as solar energy in health facilities.	MOH & GHS	MoE, Academia
	Limited ways of streamlining patient records and efficiency in accessing the healthcare.	GHS Policy & Strategy on Digital Health 2023-2027		Employ new technologies such as e-Health, tele-medicine or satellite imagery to improve health system performance.	MOH & GHS	Lightwaves, Min. of Information & Telecommunication Companies.
	Inadequate modern safe methods to manage and dispose of waste generated in the health facilities and addressing health risks of climate change.	Health Care Waste Management in Ghana. MOH Policy Guidelines	M	Promote awareness on waste segregation and non-incineration technology for and treatment of Health care waste from the health sector to reduce harmful emissions (as well as GHGs).	MOH & GHS	EPA & MMDAs
Sustainability of health operations	Health sector carbon footprints are significant	Nil		Impact of health sector on the environment assessed, and appropriate mechanisms to monitor carbon emissions and environmental impacts developed.	WHO, MOH/ GHS	EPA, Academia
		Supply chain policy & guidelines		Update guidelines for health sector procurement of services or products impacted by CC (including energy, water, transport, and waste management) to prioritize sustainability in the selection process.	MOH/GHS	EPA, MoE, MoSWR, MoTI,
	Inadequate tree planting to serve as wind break.	Green Ghana Campaign.	L	MMDAs to intensify tree planting campaigns.	Forestry Commission/ MoLNR	EPA, MMDAs, MoH/GHS

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
	No evaluation of the conditions and safety of structural and non-structural elements impacted by previous exposure to flood. No operation of a regular schedule to inspect health facilities both internally and externally, for signs of deterioration (e.g. cracks or sinking structural elements) to avoid or reduce flood impacts.		L	Regularly assess structural and non-structural integrity of HCFs for climate hazards.	MoH/GHS	MoWH
	No contingency plan in place for safe/efficient personnel evacuation (including health staff and patients), and for equipment and other essential supplies before, during and following a flood		L	Develop a contingency plan for health staff and patient evacuation for climate-related emergencies	MoH/GHS	NADMO
NAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (Limited, Moderate, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Component 5: Vulnerability, capacity, and adaptation assessment						
Vulnerability	There is an absence of technical capacity and institutional mechanisms that integrate strategies for addressing the impact of climate change into all vertical health programs by utilizing a systems approach.	African Risk Capacity (Risk Transfer- Insurance package supporting the vulnerable in emergencies)		Undertake a comprehensive health vulnerability and adaptation assessment at the population level, related to diseases (e.g. priority climate-sensitive health outcomes), environment (e.g. climatic variables), social (e.g. poverty and demographics), economic (e.g. occupation) and current level of interventions and health systems capacity.	MoH/GHS	NADMO, EPA, MoFA
				Conduct a health impact assessment of future health risks and impacts of climate variability and change at a strategic level.		
				Develop or update vulnerability maps for climate-sensitive health outcomes, build the capacity of health systems to manage climate risks.		

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Baseline information on capacities and gaps.	There are no baselines on existing human resources, technical and health service delivery capacity, for HCFs that have been prioritized to provide service in event of natural disasters or emergencies.	Country Risk and Vulnerability Assessment	L	Conduct climate and health V&A assessment at the health care facility level in all regions to establish baselines on health service delivery capacity of HCFs prioritized to operate in event of natural disasters or emergencies, the existing human resources, technical and, with identification of weaknesses.	MoH/GHS	NADMO, GMeT
	The routine health information and surveillance systems in Ghana does not collects information on some climate sensitive health outcomes (e.g. health related health mortality/morbidity, RTA, injuries/deaths due to extreme weather events etc.) There are information systems outside the health sector that track changes in climate and weather, though they are not integrated with the health information systems. Consequently, there is no integrated information system that captures data on climate change related diseases on human and animal health.	There is a summary of CSHO indicators in DHIMS Health Information Management (HIM) guidelines. HIMS SOP. IDSR TG 3rd Edition	L	Develop data sharing agreements between agencies, international organizations/ institutions, and other countries. Patronize/ develop an online multisectoral climate change information sharing portal accessible to all key MDAs	MoH/GHS	MoFA, Ministry of Communication, NITA.
Adaptation options	The current climate change NAP is outdated.	Ghana National Climate Change Policy (2013)	M	Use the results of the V&A assessment at national level to identify and prioritize need based adaptive actions to develop the HNAP.	MoH/GHS	EPA, GMET, Academia, HSA
				Use the results of the V&A assessments at the regional level to develop Regional Adaptation Plans Establish a mechanism for iterative review of the HNAP and Regional Adaptation plans based on information obtained from V&As as well as current scientific evidence		

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Component 6: Management of climate sensitive health outcomes						
Vector-borne and zoonotic diseases	Malaria incidence rose steadily since 2014 and plateaued from 2019	Indoor Residual Spraying, Larviciding Larval source management, Malaria Vaccine Distribution of bednets to school children, pregnant women and children due for measles II immunization, Point Mass Distribution of LLIN IPTp	L	Expand IRS, LSM & Malaria vaccination- improve quality of delivery and coverage. Maximize Population-based ITN Campaigns. Develop a vector control epidemic preparedness plan and conduct regular stratification on changes in transmission/ disease burden and intervention.	MoH/GHS	EPA, Zoomlion, MoE/GES

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
		EPI Yellow Fever routine childhood vaccination. National Malaria Elimination Strategic Plan 2025-2028 Mass Drug Administration (MDA) for Bilharzia by NTD IDSR. Emergency preparedness and response plan by MOH/ GHS. Routine Public education and sensitization by PHD of GHS Center for Health Security programs	M	Intensify advocacy and inter-sectoral collaboration in health and relevant sectors.	MoH/GHS	FDA, NVI, Zoomlion, MoE/ GES, NCCRM
	Most interventions for zoonotic disease target Rabies, Anthrax, and Trypanosomiasis with few interventions There is low awareness on emerging zoonotic threats.	There is Anthrax and Rabies vaccination Plan for livestock. There is a Response plan to address zoonotic disease outbreak	M	Improve interventions and awareness on emerging zoonotic threats. Improve access to free prophylactic ARV vaccination	MoH/GHS	FDA, NVI, Zoomlion, MoE/ GES, NCCRM

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Cerebrospinal Meningitis	Spread of meningitis to non-endemic parts of the country due to climate change	IDSR. Emergency preparedness and response (EPR) plan by MOH/ GHS. Routine vaccination with PCV and Men A. Draft National Strategic Plan to defeat Meningitis by 2030. Routine Public education and sensitization by PHD, GHS activity. Center for Health Security programs	M	Vaccinate at-risk populations Activate the EPRP to cover non-e Complete National Strategic Plan to defeat Meningitis by 2030ndemic areas. Intensify Public education and sensitization on Meningitis.	MoH/GHS	MoE/GES, Media, NCCE, ISD

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Malnutrition	Poor mining practices, sand winning and other causes of loss of farmlands threatening food security. Drought threatens food security. Floods can threaten food security by destroying farmlands. Climate change resulting in conflicts (i.e. Migration of Fulani herdsmen)	Ghana Nutrition Improvement Program, GHS Policy on Small Scale Mining Education/awareness creation by PHD, GHS. Community based management of acute malnutrition by PHD, GHS. Growth monitoring and promotion by FHD, GHS. IOM-International Organization for Migration NIS policy on immigration.	M	Advocate for effective enforcement of regulations on mining practices and other causes of loss of farmlands threatening food security Raise awareness on linkages between risk factors and climate sensitive health outcomes.	MoH/GHS	EPA, MoFA, Security Services
Respiratory illnesses and allergic dxs	Inadequate surveillance on allergic diseases.	Standard treatment guidelines, MOH/GHS TB vaccination/ screening/case detection by NTP	M	Build capacity of health system to initiate a surveillance system that monitors climate sensitive health outcomes	MoH/GHS	Teaching hospitals
		National Guidelines on Surveillance on Respiratory Pathogens, 2023	L	Continue sentinel surveillance on viral influenza	MoH/GHS	MOFA
	Low awareness on relationship between climate and allergic/ hypersensitivity diseases.		L	Intensify public and HCW awareness on relationship between climate and allergic diseases e.g. asthma. ICD of GHS to develop a strategic plan to improve surveillance on allergic diseases	MoH/GHS	

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Cardiovascular Diseases	Low awareness about links between air pollution (outdoor & indoor) and CVD High usage of biomass fuel causing indoor air pollution Increased exposure to harmattan (desert) dust Inadequate surveillance on allergic diseases	Case management guidelines by PHD & ICD of GHS Health Education Health screening by NCD Program of GHS Capacity building of health workers by NCD Program	M	Intensify public and HCW awareness on relationship between outdoor and indoor air pollution and CVD e.g. Heart failure. Sensitize the public on the health benefits of using cleaner fuel and stoves.	MoH/GHS	ISD, NCCE
Food-borne illness	Inadequate access to information/ data on food borne illnesses (FDA-INFOSAN)	Health Education Treatment guidelines	L	FDA to strengthen surveillance/ reporting on food borne illnesses.	FDA	
	Low awareness on preventive measures among the food vendors	Screening of food Vendors by EHD Accredited food safety laboratory at Veterinary Services.		Train food vendors on IPC practices.	EHD of MoLGRD	
	Inadequate sanitation and hygienic practices in the hospitality industry	Monitoring of hospitality industry by FDA/EPA/ EHD				

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Water-borne diseases (cholera, Typhoid, Diarrhoea	Increased disease risk due to shortage of drinking water (Drought). Contamination of drinking water sources (ground and surface water) during flooding events. Poor mining practices causing chemical pollution of water sources Poor environmental sanitation and hygienic practices	IDSR IPC/WASH activities Health Education Treatment guidelines Guidelines by EPA, Council for Scientific and Industrial Research (CSIR), WRC National Environmental Sanitation Policy by Ministry of Local Government and Rural Dev't,1999 National Environmental Sanitation Strategy and Action Plan (NESSAP) 2010 MMDA's by laws on sanitation	M	Train food vendors on IPC practices. Implement WASH–fit program in HCFs Sensitize the public on basic control measures and promote alternative methods of harvesting clean drinking water,	MoH/GHS	EHD of MoLGRD, GWCL, CWSA.
Mental Health and psychosocial disorders	Inadequate surveillance on mental health. Displacements due to disasters caused by extreme weather events	Capacity building of staff National Mental Health Policy 2019-2030 Early Warning Systems on climate related disasters National Plan of Action for Disaster Risk Reduction and Climate Change Adaptation	L	Improve DHIMS reporting on Mental health disorders Provide post disaster mental health counselling services for victims	Mental health Authority MOH/GHS	MOH/GHS/ MMDAs

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Injuries & accidents (from extreme weather events)	Increase in disasters caused by extreme weather events Inadequate access to data on injuries & accidents (extreme weather events) Inadequate data linking injuries & accidents to extreme weather events	Public Education National Road Safety Authority Regulations, 2020	L	Strengthen surveillance on Injuries & Accidents from extreme weather events Develop data sharing agreements between agencies, international organizations/ institutions, and other countries. Patronize/ develop an online multisectoral climate change information sharing portal accessible to all key MDAs	NADMO, MOH/GHS,	MOHG/GHS, NRSC, EPA, MMDAs
Snake Bites	Increase risk of exposure during heat episodes. Inadequate access to ASV.	Treatment guidelines	M	Improve supply chain for ASVs Improve access to free ASV treatment Promote preventive strategies	MOH/GHS	MMDAs
Water washed diseases (Yaws, Scabies, Trachoma etc.)	Increased disease risk due to shortage of water (Drought) Poor sanitation and hygienic practices.	NTD strategic Plan IDSR IPC/WASH activities Health Education Treatment guidelines Monitoring of Sanitary practices by FDA/EPA/ EHD	L	Promote WASH program in vulnerable communities Public awareness raising campaigns Awareness raising on preventive measures	MOH/GHS	EHD of MMDAs, GWCL, CWSA
Heat Related Illness (Heat stress, heat strokes)	There is no surveillance, inadequate preventive interventions for heat related illnesses Loss of work hours and productivity among large section of workforce engaged in outdoor work. Heat related adverse reproductive health outcomes	Treatment guidelines- Institutional Care Division (ICD) MMDA's have by laws/ guidelines on the establishment of markets Health education on heat related adverse reproductive health practices- HPD	L	Setup surveillance systems in health institutions that capture data on heat related illness. MMDA's should regulate outdoor activities. Raise Public education of the effect of heat on health. Provide alternative livelihood for workforce engaged in outdoor work. Related Agencies to develop guidelines on Heat related adverse reproductive health conditions.	MOH/GHS	EHD of MMDAs, EPA, MOFA, MOELR

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Injuries & Accidents (from RTAs)	Dust storms and fog reducing visibility for drivers.	NRSC Regulations EPA AQMPs MTTD-Police DVLA Private Driver Unions GMeT	M	Improve monitoring of outdoor visibility Provide advice/warning to motorists and aviation based on weather state	EPA, GMet	NRSC, MOH/GHS
	Inadequate access to data on injuries & accidents (extreme weather events) and data on injuries & accidents (RTA) Fog reducing visibility for lake transport causing boat disasters. Dust storms and fog reducing visibility causing air crashes	MTTD RTA reports DHIMS II collected data on RTA though not segregated into those caused by extreme weather events. Treatment guidelines-ICD Air Transport Policy and Regulation Civil Aviation Regulation	L	Develop data sharing agreements between agencies, international organizations/ institutions, and other countries.	EPA, GMet	NRSC, MOH/GHS

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Component 7: Integrated risk monitoring and early warning						
Integrated disease surveillance and early warnings	There is no interoperability among disease surveillance and early warnings systems	Epidemic Intelligence Open Source DSR Talk walker Media Scanning	M	Strengthen systems for H&E surveillance to allow for measurement of interlinked H&E impacts, and to identify emerging risks including climate-sensitive environmental risk-factors, to manage them better. Develop and prioritize health indicators to be adopted by H&E Integrated Surveillance. Develop data sharing agreements between agencies, international organizations/ institutions, and other countries. Design a multi-hazard EWS to predict infectious disease epidemics, with identified key areas of focus and collaborating agencies. Undertake an inventory of existing EWS. Mechanisms should be established to ensure there is interoperability among early warnings systems. Establish databases on climate change and health, rosters of local experts, and knowledge management experts (health system information, health surveys);	MoH/GHS	MoFA, VSD, Wildlife, Forestry Commission, MLNR

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
				Conduct H&E information sharing/exchange and validation workshops. Analysis of data from the H&E surveillance system and timely dissemination of outputs (risk maps, EWS, reports, etc.) to all relevant stakeholders. Update the health management information system (DHIMS2) to capture data for monitoring health impacts of climate change. Conduct enhanced surveillance for prioritized climate-sensitive diseases in health facilities. Use early detection tools (e.g. rapid diagnostics, syndromic surveillance) to identify changing incidence and trigger early action. Conduct periodic supplementary surveys to complement IDSR.		
Monitoring CC indicators	There are no integrated indicators for monitoring climate change	Ghana National Climate Change Policy-2013 National Climate Change Adaptation Strategy	L	Indicators on climate change impacts, vulnerability, response capacity and emergency preparedness capacity, as well as climate and environmental variables included in health sector monitoring systems at all levels and reported in the DHIMS over time. Indicators on climate change impacts, vulnerability, response capacity and emergency preparedness capacity, as well as climate and environmental variables shared by relevant MDAs at national level and reported over time. Organize periodic reviews for improvement of capacity gaps identified in V&A assessments Conduct monitoring of prioritized climate sensitive environmental risk-factors for diseases: water quality, air quality in some areas. Identify avenues for providing feedback to operational levels on results of monitoring.	MOH/GHS	GMeT, EPA, MESTI

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Risk communication	There is no integrated risk communication Strategy/Plans among key stakeholders and partners.	There are individual risk communication plans for MoH/GHS, MESTI, NADMO and other Agencies.	L	Development and implementation of internal and external communication plans (including the development of knowledge products) to raise awareness of health and climate change, and response options targeting key audiences, such as health professionals and decision-makers, communities, the media and other sectors. Community engagement and feedback mechanisms established to empower affected populations to respond to warnings, and to guide future development of monitoring and warning systems. Conduct daily health education at the various service delivery points (OPD, ANC, CWC sites). Information gathered on seasonal trends used to plan communication on risks and preventive measures for CSHOs Develop trainings for capacity building of health care workers on health climate services information	MoH/GHS	MESTI, NADMO, GMeT, MTTD
Component 8: Emergency preparedness and management						
Inform policies and protocols.	No costed emergency preparedness plans Health systems within the health sector not properly forecasted to withstand emergency situations	Emergency Expenditure Management Guidelines for Public Institutions Occupational and Environmental Health Unit of GHS NADMO Act,927 National Climate Change Policy	M	Develop costed emergency preparedness plans. Climate-sensitive health risks included under national disaster reduction strategy and plans, and wider development processes. Building resilient health systems for emergency responses within the health sector. Integrate the HNAP with the national disaster risk reduction plan.	MoH/GHS	NADMO, CSOs, Local Government, Security Services, MoF

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
	No Costed plan for post evaluation response	Emergency Expenditure Management Guidelines for Public Institutions Occupational and Environmental Health Unit of GHS NADMO Act,927 National Climate Change Policy	L	Development of response system and plans for key climate-sensitive risk factors and coordination with the DRR sector. Institute post disaster evaluation interventions as a component of emergency response Improve early warning systems Establish Disaster risk management command/control teams within MOH & GHS. Actively participate in collaborative activities with the National Disaster Management Inter-sectoral Coordination Committee (NDMICC)	MoH / GHS	NADMO, Security agencies, AESL
Risk management	Lack of contingency plans for evacuation purposes	National Emergency Preparedness and Response Plan Emergency Preparedness and Response Plan - MiDA Emergency Evacuation and Contingency Plan for Ghana	L	Routinely use risk assessments for current and projected future exposure to extreme weather events to inform development of contingency plans by vulnerable healthcare facilities. Develop and monitor implementation of health sector contingency plans for extreme weather events, including risk reduction, preparedness and response, in line with the WHO emergency response framework. Prepare a plan of action & make budgetary allocations for the physical reinforcement of Health facilities in natural disaster risk prone areas. Provide backup power generation units to key health facilities to ensure energy supply for cold chain, emergency, and essential health services Improve capacity building of health care workers on health emergency operations. Mobilization of funds for the implementation of emergency preparedness plan. Built and operate new public health infrastructure to minimize loss and damage caused by climate risks. Upgrade the District Hospital to a Standard Hospital.	MoH/ GHS	NADMO, GMeT, Security Services, National Geological Services, Ministry of Foreign Affairs and Regional Integration.

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Empowerment of communities	Inadequate community engagement on the health impacts of climate change	CHPS Policy NADMO Act,927- 2016 EPA	M	Establish stakeholder mechanisms to support participation, dialogue and information exchange, to empower civil society and community groups as primary actors in emergency preparedness and response.	MoH/GHS Association of Private Hospitals, CHAG, Public and Private service delivery agencies	Security Services, NADMO
				Implement capacity development programmes to build capacity of local communities to identify risks, prevent exposure to hazards and take action to save lives in extreme weather events.		
HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (Limited, Moderate, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Component 9: Management of environmental determinants of health						
Coordinate management of environmental risk factors for CSHOs	Storms / floods causing Injuries /accidents, displacement and drowning of both children and adults	National Disaster Management Plan. National Disability Inclusive Disaster Risk Management Guidelines National Water Policy, 2024 Environmental Sanitation Policy, 2024 (pending) NHIS policy	M	Conduct health impact assessments for policy and programmes in sectors such as transport, agriculture, environment and energy. Promote multi-sector approaches to address the primary risks to health, related to water, waste, food security and air pollution	NADMO, NDPC	Security (GNFS, GPS, GAF), MOH/ GHS/Ambulance, GMET, Ghana Hydrological Authority

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
	Victims/survivors suffer from psychological and mental health issues because of damage to houses, loss of properties and livestock and other animals from storms and floods.	Mental Health Policy (2019 - 2030). Ghana Psychological Council	L	Harmonise existing psychosocial support systems and institute pre and post disaster-related psychosocial support, working with state & non-state actors for affected communities	MOH/Mental Health Authority	NADMO, MOGSCP, GHS, Ghana Psychology Council, Non-State actors (e.g. Basic Needs), academia etc
	Lack of access to the health facilities within the communities during flooding.	Roadmap for Attaining Universal Health Coverage (2020 – 2030) National Health Infrastructure Strategy.	M	Evaluate pilot and scale-up inter-agency climate change coordination committee meetings at all levels - district, regional and national. Engage, Establish and Resource the Health & Environment Strategic Alliance (HESA) as an inter-sectoral coordinating committee to coordinate climate change & health collaborative activities.		MMDAs, MORT, OTP, One Health Secretariat, EPA, GMET, MSWR, NADMO, MOFA, Academia
	Contamination of surface and ground drinking water sources	National Drinking Water Quality Management Framework Quarterly Monitoring of Water facilities and water catchment by WRC and MSWR Water Resources Commission, any documents??? National Water Policy, 2024 The Ghana Clean Water Project.	M	Enhance water volume & quality surveillance to monitor status of water resources and track capacity of stakeholders on water scarcity risks.	MSWR	MOH, MMDAs, Regional & Area Offices of EPA, WRC, CWSA, GWL Academia

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
	Breeding of disease vectors such as mosquitoes.	National Malaria Elimination Programme National NTD Elimination Programme National Environment & Sanitation 2024 (pending)	L	Invest in research and evidence generation on nexus between meteorological variables and vector-borne disease incidence and spread, at regional & district level Use existing national regional and district coordination mechanisms for enhancing coordination and management of climate change-related health risks, including disasters and emergencies at all levels	MOH/GHS	GMET, Academia
	Food insecurity leading to malnutrition.	West Africa Food System Resilience Program (FSRP) Project. Rice Value Chain Improvement Project. Gulf of Guinea Northern Regions Social Cohesion (SOCO) Project Planting for Export and Rural Development PROCASHEW			MOFA	
	Drought causing: Food insecurity leading to malnutrition. Human mobility leading to overcrowding, WASH challenges & risk of communicable & non-communicable disease spread (e.g., cholera, HIV, mental health etc)	Ghana National Drought Management Plan West African Food Systems Resilience Programme (FSRP 2) National Migration Policy, 2016	M	Mobilise, implement and scale-up drought preparedness, response and recovery actions to improve food security and health Implement and scale-up climate-smart agriculture practices in drought-prone zones	MOFA	MOH, NADMO, CSIR

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
	Heighten bushfires resulting in destruction of food crops & tree covers leading to malnutrition, air pollution generating particulate matter Lack of access to potable water during drought leading to communicable and NCDs.	National Wildfire Management Policy, 2006 The Ghana Clean Water Project	M	Establish coordinated early warning systems including well formulated social and behaviour change, programmes, community capacity response to prevent bushfires	MLNR, MSWR	MLGRD, Forestry Commission, MOH
	Extreme heat causing: high risk of heat stress / stroke/ deaths, especially at-risk population -e.g., outdoor workers, elderly	Occupational Health & Safety Policy & Guidelines, 2010	M	Develop emergency operational guidelines and standards on preparedness and response during periods of heat waves (high temperatures)	MOH	MoELR, MoWH
	Psychosocial and mental health Physical inactivity, exacerbating sedentary lifestyles leading to NCDs Adverse reproductive health outcomes because of heat waves and stress. Dehydration due to heat waves and stress.	Mental Health Act, 2012; Mental Health Policy, 2019-2030 & Mental Health Strategy, 2023-2026; NCD Policy, 2022 Absence of systematic & coherent programmes on mental health outcomes driven by climate-related weather events NCD Policy, 2022	L	Develop essential minimum package of mental health psychosocial support services (MHPSS) to prepare and response to climate related extreme weather events	MOH/MHA	MOGCSP, GHS, NADMO, NHIS, Min Employment & Labour, Trade Union Congress, CLOGSAG
	Sea level rise causing: Injuries, death and displacement leading to loss of livelihoods, impacting on health (e.g malnutrition, psychological and mental health) at coastal communities	Sea Defence Project			Min Works & Housing	NADMO
	WASH challenges					

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
	Destruction of health & other social infrastructures (e.g. transport, schools etc)					
	Land use and land cover changes from poor mining practices (e.g. use of heavy metals, processing and disposal -release of pollutants) causing: Contamination of food chain	LUSPA Act, 2016			MESTI	
	Pollution of air, soil and water (surface and groundwater sources) leading to poor child and maternal effects, communicable and NCDs				MSWR	
	Spread of communication diseases - e.g. HIV					
	Logging / charcoal production causing: deforestation and loss of biodiversity impacts health and food insecurity	Ghana Landscape restoration and small-scale mining project by World bank. Green Ghana project			MOFA	
	Air pollution-related diseases due to charcoal production.				EPA	
	Poor sanitation (liquid and solid waste) leading to: Contamination of surface and ground water resulting in both communicable and NCDs. Poor sanitation leading to breeding of disease vectors.	GAMA Sanitation & Water Project, by WB Community Lead Total Sanitation			MSWR	

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
	Land and water conflicts and fighting leading to: injuries, accidents, displacements and deaths psychological and mental health issues				NADMO	
	Engineering inadequacies leading to: Non-climate resilient infrastructure (e.g. roads, water facilities, houses, health facilities) leading to injuries, diseases, and displacements.	Ghana Secondary City Districts Project initiative.			MSDI	
	Poorly planned communities leading to flooding, injuries, diseases and deaths (i.e. lack of access by emergency services).				MMDAs	
	Forced migration / displacement from extreme weather events leading to: Injuries, deaths, displacement, infectious & noncommunicable diseases, life course destruction	National Disaster Management Plan.			NADMO	
	Sand winning leading to: Loss of farmlands, biodiversity. Creation of breeding ground for disease vectors.				EPA	
	Overgrazing / destruction by livestock leading to food insecurity and malnutrition				MOFA	
	Unsafe drinking water leading to communicable and NCDs.	The Ghana Clean Water Project			MSWR	

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
Monitor environmental risk factors for CSHOs	Information systems of health sector agencies are in silos.	MOH Monitoring & Evaluation Framework (2014)		Establish integrated monitoring systems allowing collection and analysis of data on environmental hazards, socioeconomic factors and health outcomes. Established a database system for information sharing and input Mobilisation of funds for the implementation of the surveillance and monitoring system.	MOH	GSS, MMDAs
	Lack of Climate-Resilient Water Safety Plans which includes strategies within the WSPs	National Drinking Water Quality Management Framework		Develop and monitor implementation of climate resilient water-safety plans to promote access to safe-water for the whole population.	MSWR	WRC, CWSA, GHA, GWL, EPA, MMDAs
	Poor evidence on the environmental burden of disease at national and local levels.			Assess the environmental burden of disease at national and local levels.	MOH (Disease Surveillance Department), VET	GSS, EPA,
	Lack of framework for developing climate indicators in the Health Sector			Development of indicators for climate impacts and vulnerabilities, and periodic monitoring of the health impacts. Improve capacity building of health care workers on methods and materials for ecosystem intervention and environmental sanitation. Community sensitization on Larviciding, sanitation and hygiene. Mobilization of funds for the implementation of the surveillance and monitoring system.	MOH	MSWR, MMDAs, DPs, MOF, GSS, EPA
Develop/ strengthen regulations for management of environmental risk factors for CSHOs	Inadequate mainstreaming of health impacts of climate change into regulations that control environmental risk factors of CSHOs		L	Promote and strengthen the implementation of the health care wastes management policy and guidelines and improve community management of health care waste through education. Develop a national database for sanitation and waste reporting	MoH/GHS	EPA, MSWR, ZOOMLION, MMDAs
				Advocate for finalization of the national air quality standards and pass a legislative instrument to enforce it.	EPA	MOH/GHS, GSA

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
				Define, revise and enforce legislation, policy, guidelines, strategies and plans that regulate key environmental determinants of health (air, water, food, waste and housing) to reflect climate change and climate variability risks.	MOH/GHS	EPA, MSWR, MOFA, FDA, MoWH
Component 10: Monitoring progress						
	Limited Monitoring and Evaluation framework/ Plan on health-related CC. Inadequate national-level indicators for reporting on Climate Change and Health	National Adaptation Framework 2018 Medium Term National Development Policy Framework 2022-2025 National Climate Change Adaptation Strategy.	M	Development of Health National Adaptation plan with a comprehensive M&E framework. Identify climate change and health processes, result, and impact indicators.	MOH/GHS	MESTI, EPA, GSS, NDPC.
	Limited comprehensive database on health-related CC risks	Ghana's 5th National Greenhouse Gas Inventory report Ongoing Project Standards for Official Statistics on Climate-Health Interactions in collaboration with academia, RIPS-UGL (UK Office for National. Statistics (ONS) and financially supported Wellcome Trust). National Environmental Sanitation Strategy Action Plan. DHIMS2	M	Review existing database and platforms, integrate/create and operationalize climate change and health database	MOH, GHS	MESTI, EPA, GSS, NDPC, MMDAs

HNAP objectives	Vulnerabilities/ gaps in adaptive capacity	Current and planned PPPs	Adaptive capacity ratings (L, M, Adequate)	Adaptive actions recommended	Lead health sector agencies	Non-health sector agencies
	Limited institutional structures for reporting on health-related CC indicators at all levels (including sectoral, national and international).	Guidelines for developing medium-term development plans 2020 Medium-Term National Development Policy Framework 2022-2025 National Adaptation Plan Framework 2018 Mid-term / Annual Health Sector Performance Reviews platform.	M	Mainstream HNAP process, outcome and impact indicators into existing M&E systems within the health sector. Prioritize the identified climate change and health indicators and initiate reporting on these indicators at all levels of the health sector through the DHIMS2. Establish and operationalize reporting structures/ mechanism (sectoral, national and international levels).	MOH, GHS	MESTI, EPA, GSS, NDPC, MMDAs
	Inadequate capacity of evaluators for monitoring and evaluation on health-related CC adaptative actions, projects and programmes.	Health Sector Human Resource Plan Mid-term / Annual Health Sector Performance Reviews platform Innovations Desk within the MOH.	L	Strengthen institutional capacity to monitor and evaluate implementation of HNAP and other climate change interventions at all levels. Adopt innovations and technologies for advancing climate change and health monitoring and evaluation.