Gap Analysis and Action Plans for the Health and Water Sectors

ICAT Initiative for Climate Action Transparency

Initiative for Climate Action Transparency – ICAT

Gap analysis and action plans for water and health sectors

Deliverable C

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Executive Summary

The Health and Water Adaptation Gap Analysis and Action Plan is the second phase of the Health and Water Adaptation Activity under the ICAT Eswatini project. In the first phase the state-of-play in these two sectors was assessed and, based on the situational analysis, it was observed there were gaps limiting the implementation of adaptation options in both sectors. These gaps can broadly be classified into four groups, namely (a) legal and institutional; (b) financial; (c) capacity; and, (d) Infrastructure and technology gaps. In both sectors, it was observed that there is a fragmented policy framework and inefficiencies in passing legislation, which hinder proper coordination of adaptation actions. The number and qualifications of the personnel in these sectors points to capacity needs, while limited availability of working tools and proper infrastructure suggests a lack of resources. The lack of capacity and resources are linked to financial constraints.

In the water sector, there is currently no legal instrument that can be used for water pricing. The infrastructure that would make this a reality is also lacking due to several reasons, including lack of financial resources. The control and monitoring of available water is also hindered by the lack of real-time water gauging stations as well as poor maintenance of manual gauging systems, some of which are non-functional. The country already has a system that can be used as an early warning system, HydroNet, which still needs thresholds to be set. The implementation of adaptation catchment plans, and removal of invasive alien plant species (IAPS) is also important for water management. Some of the identified gaps in catchment and IAPS management include the lack of coordinated planning on management and adaptation plans as well as inadequacy (and sometimes unavailability) of national data on catchment mapping, practices and activities. Some of the available dam infrastructure suffers from limited resources to maintain them. The limited resources in the country can barely cover the design and construction of multi-purpose dams, let alone climate proofing the available ones. Several actions are proposed to address these gaps. These include passing draft regulations, capacity building, resource mobilization and a number of others.

For the health sector, the main gap is that it is mainly curative, rather than preventative in its approach. There are also capacity, financial and infrastructural gaps in the health sector. Key actors in the sector, particularly government actors, respond to climate change, but the actions are not engineered to develop adaptive capacity as they tend to be responsive in nature. Often, they are not linked to the cause, which may be climate change. The sector is hugely dependent on donor funds, which tends to drive the agenda towards implementing programmes the donors have interest in. There is a need to pump resources into the sector, build capacity of the health workers, improve infrastructure to make it more climate proof and resilient, but also develop a health national adaptation plan which will guide the adaptation activities.

Water, sanitation and hygiene (WASH), as well as gender issues, are cross-cutting for all sectors. Hence adaptation actions related to them must be addressed by both sectors. The WASH infrastructure is poorly planned in rural and peri-urban areas where the users include the highest proportion of vulnerable groups. Some of the gaps in WASH include poor access to clean water which results in poor hygiene practices, poor WASH coordination and poor WASH financing. The inadequacy of water and WASH services affects mainly women and girls who usually have responsibilities of fetching water and caring for the sick. The development and implementation of adaptation measures in these sectors should, therefore, consider such gender roles. One way of taking these into consideration is to involve women in decision making. The mainstreaming of gender issues into climate actions (and other related activities) is still poorly understood. Hence, capacity building on how to mainstream gender is key.

The actions suggested in this report will, in the third and final phase of the Health and Water Adaptation Activity under ICAT Eswatini, be taken to stakeholders and developed into a roadmap showing the way forward for adaptation in these two sectors.

Table of content

List of tables

List of figures

Abbreviations

AdCom	Adaptation Communication
ADB	African Development Bank
ALMA	African Leaders Malaria Alliance
BERCS	Baphalali Eswatini Red Cross Society
BURs	Biennial Update Reports
CBIT	Capacity Building Initiative for Transparency
CMIS	Client Management Information System
CSI	Corporate Social Investment
COMESA	Common Market for Eastern and Southern Africa
COP	Conference of the Parties
DWA	Department of Water Affairs
EEA	Eswatini Environmental Authority
EEC	Eswatini Electricity Company
ETF	Enhanced Transparency Framework
ENTC	Eswatini National Trust Commission
ESARO	Eastern and Southern African Region Office
EWSC	Eswatini Water Services Corporation
FAO	Food and Agriculture Organisation
GHG	Greenhouse gases
HMIS	Health Management Information System
H-NAP	Health National Adaptation Plan
ICAT	Initiative for Climate Action Transparency
INDC	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
IVM	Integrated Vector Management
IWRM	Integrated Water Resource Management
MOA	Ministry of Agriculture
MOH	Ministry of Health
MTAD	Ministry of Tinkhundla Administration and Development
MTEA	Ministry of Tourism and Environmental Affairs
MRV	Measurement, Reporting and Verification
NC1	First National Communication
NCCP	National Climate Change Policy
NCDs	Non-communicable diseases
NC2	Second National Communication
NC3	Third National Communication
NC4	Fourth National Communication
NCs	National Communications
NDC	Nationally Determined Contributions
NDP	National Development Plan
NERCHA	National Emergency Council of HIV/AIDS
NERMA	National Emergency Response Mitigation and Adaptation Plan
NGO	Non-Governmental Organisation
NMCP	National Malaria Control Program
NWA	National Water Authority
RBA	River Basin Authority
SDGs	Sustainable development goals
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
UNICEF	United Nations Children Emergency Fund
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation
WVI	World Vision International

Chapter 1 –Gap Analysis

1.1 Introduction

The Gap Analysis and Action Plan Report presented here is a deliverable within Activity 1 of the Initiative for Climate Action Transparency (ICAT) Eswatini project which aims to develop a roadmap for tracking adaptation in the health and water sectors (with a focus on gender).[1] It is meant to create awareness on current adaptation milestones for the two sectors as well as gaps which need to be filled to achieve the proposed adaptation actions. An action plan to address these gaps is then presented. This deliverable builds upon the National Health and Water Adaptation State-of-Play Inventory and Map.[2] The project is designed to support decision-making processes in Eswatini and to better address future challenges and opportunities in climate change adaptation for the water and health sectors.

The approach was based on the identification and assessment of the current state and activities in key adaptation measures and comparing these with current and future potential for additional adaptation to reduce risks. The analysis of the current state of play in the health and water sectors was based on adaptation actions captured in Eswatini's recently updated Nationally Determined Contributions (NDC). Additionally, the analysis was reinforced by reviewing and highlighting projects from other national documents, public and private institutions and engagement of stakeholders. The gaps identified can broadly be classified into four categories as shown in **Figure 1.1**.

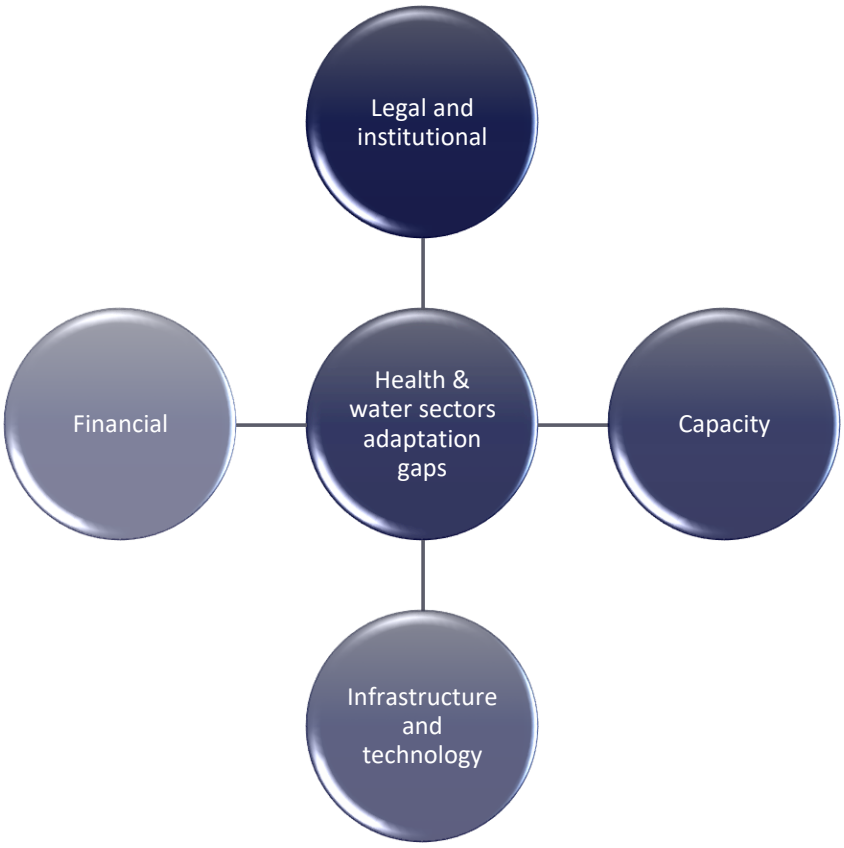

Figure 1. 1: Health and water sectors adaptation gaps

1.2 Gap Analysis for Water Sector

The implementation of climate change adaptation measures in Eswatini has not been without challenges, barriers and gaps. The political situation and stability have an influence on a country's ability to implement their climate commitments. The Eswatini political structure is characterised by direct election of representatives to parliament who account to the electorate through the Tinkhundla centres. Often, these representatives influence interventions to be implemented within their constituencies which is accompanied by reluctance to pay from communities. This promotes conflicts in communities and sabotages the sustainability of interventions and related infrastructure. The country has also experienced political unrest that has resulted in vandalising water, sanitation and hygiene (WASH) infrastructure in rural areas where acts of criminality have sought to sabotage government efforts in service provision and have resulted in weakened sub-national institutions.

Even though appreciable progress has been made, the limit posed by these barriers and/or gaps have had adverse effects on equitable water governance, on management of pollution, on catchment adaptation, and on water supply provision and related sanitation and hygiene service provision, especially in rural areas. The coverage in urban areas and ease of implementation of projects in urban areas has been used for reference and sustainable programmatic planning for the rural areas. The identified challenges, which are not unique to Eswatini, have been grouped into; financial resources, technology and infrastructure needs, legal frameworks and capacity gaps. These are discussed below. Specific gaps and recommendations are linked to each adaptation measure and presented in **Table 1.1**.

1.2.1 Legal and institutional gaps

The slow passing of new legislation and outdated existing legislation have been constant barriers in the management and implementation of climate change adaptation in Eswatini. For instance, the water permitting regulation of 2015, the dam safety regulation of 2016, drinking water regulation of 2020 and other legislative documents are still drafts (i.e. have not been passed into law or policy). This often slows and delays the implementation of climate action and limits public awareness on country directions and commitments. This has been even more troublesome for Eswatini in the management of catchment, water pricing, and sectoral joint reviews through the WASH forum, amongst other affected adaptation measures as outlined in **Table 1.1**.

1.2.2 Financial Resources

Eswatini has a strong export-oriented economy relying on agricultural produce and other industrial exports. The country has faced challenges that resulted in fiscal consolidation of the budget from 2020 which was also followed by the COVID-19 pandemic that negatively affected the economy and availability of resources for implementation of water, sanitation and hygiene programs. Even so, the country has invested more than SZL 5 billion[i] in water supply projects that have been co-funded by the government, African Development Bank (ADB), World Bank, (United Nations Children Emergency Fund/UNICEF), Baphalali Eswatini Red Cross Society (BERCS), WaterAid, World Vision International (WVI) and other developmental partners and non-governmental organisations since 2020.

Although such a huge investment has been made, this has been specifically directed towards water supply projects and there is still a financing gap, particularly for other climate change adaptation measures such as strengthening and capacity of early warning systems, control of invasive alien plant species, research, among others. Infrastructural set-up and routine infrastructural maintenance plans could not be implemented in time to ensure limited disruption of service provision, also due to limited funding. In most instances, the country has prioritised the

i SZL 5 billion is roughly equivalent to USD (US Dollars) 310 million (13 May 2022).

development of new infrastructure, enactment of legislation, development of action plans, with little to no budget for maintenance and implementation of the plans.

However, the country has made strides in resource mobilisation and made progress in accessing climate finance which has improved awareness and successful proposal submissions to international and regional climate funds. To date, the country has received financial support through various agencies including ICAT, United Nations Development Programme (UNDP), Common Market for Eastern and Southern Africa (COMESA) and Food and Agriculture Organization (FAO) to implement measures that seek to strengthen the climate resilience of the water sector.

1.2.3 Technology and infrastructure needs

The implementation of several adaptation actions as outlined in the updated NDC, and other country commitments to climate change adaptation, requires real time data collection for analysis to inform decisions and actions by implementing bodies. Technology development, transfer and support needs are central and integral elements for successful implementation of the adaptation measures. Even when available, costs and complexity in operation and maintenance may be a deterrent. These, then, require building capacity above resource mobilization and acquiring technology and installation of infrastructure. For instance, early warning systems and the monitoring of water availability and use, requires real time data gathering infrastructure. These require a data management system that would inform monitoring, review and reporting processes, and systems including needs for capacitation research institutions. Various stakeholders, including the Department of Water Affairs (DWA), Ministry of Natural Resources and Energy (MNRE), and partners in sub-national structures, have cited the access and cost implications for procuring, installing and maintaining of technologically advanced infrastructure as a major gap for the sector in climate change adaptation.

1.2.4 Capacity needs in the water sector

Capacity needs in the water sector are mainly found within the enforcement and implementing bodies. Eswatini has established the River Basin Authority (RBA) to try and improve water governance and compliance in the water sector. This authority currently has a limited number of personnel to perform its mandate which is country-wide. In some cases, the available personnel have limited skills to perform their duties. Capacity on climate change, as well as the importance of implementing the outlined adaptation measures, is also a huge gap in the country which requires different levels of engagement including general awareness raising.

Table 1. 1: Gap analysis for the water sector

	Adaptation option	Actions taken	Gaps	Recommendations
1.	Improve water governance & compliance	○ Commissioning of assessments ○ Development of numerous legal documents ○ Improvement of institutional set-up ○ Human capacity building and re-establishment of monitoring and evaluation structures	○ Fragmented policy frameworks ○ Inadequate capacity to manage and respond to climate change impacts in rural areas ○ Lack of national data management systems for easy access ○ Lengthy protocol in passing legislation ○ Lack of monitoring and evaluation unit	○ Harmonise all water sector and related policy frameworks to streamline climate change and reflect climate change adaptation measures and gender mainstreaming. ○ Update the Water Act of 2003 and the Water Services Corporation Act of 1992 to synergise water supply in urban, rural and peri-urban areas. ○ Lobby for the finalisation of the review processes of pending bills and the inclusion of climate change issues and gender mainstreaming (ensure) ○ Establish and capacitate an M&E section in the water sector ○ Establish a data management system ○ Government should fully implement the decentralization model to reach all corners of society ○ Build capacity amongst implementing partners and regulating bodies ○ Review the 1976 Water Sharing Agreement incorporating the Lomahasha/Namacha Water Supply Project ○ Build capacity for rural communities for climate change adaptation

2	Develop water pricing structures	○ Development of the draft water permitting regulations of 2015 ○ Enforcement of currently passed legislation ○ Development, capacitation and formalization of the Joint River Basin Authority (JRBA) project board ○ Capacity building on water user associations and irrigations boards ○ Stakeholder engagement on the draft water pricing regulations	○ Inefficient stakeholder consultation aligned to the system of governance hence limited awareness ○ Lack of funding for water pricing infrastructure ○ Capacity from DWA and sub-national organisations to monitor and implement water pricing ○ Water pricing regulations still not finalised ○ Unregulated water pricing (operations and maintenance) structures	○ Broaden stakeholder consultation to reach all constituencies through the Ministry of Tinkhundla Administration and Development (MTAD) ○ Strengthen the capacity of the JRBA on water pricing ○ Consider incentivising water pricing infrastructure through co-funding ○ Lobby for the speedy passing of water pricing regulations ○ Develop the water pricing guidelines to incorporate rates ○ Regulate all water pricing activities through NWA ○ Develop an integrated water pricing and charging system and build capacity for the implementation of water pricing

3	Strengthen the control & monitoring of water availability & use	○ Launch and formalization of the National Water Policy (NWP) of 2018. ○ Development of the draft water permitting regulations of 2015 ○ Capacity building of the JRBA boards, irrigation districts and water user associations ○ Installation of a few near real time gauging stations.	○ Inadequate and slow installation of real time river gauge and monitoring infrastructure ○ Slow implementation of water pricing to promote efficient water use ○ Lack of legislative and institutional guidance and capacity to collect, analyse and share data for climate change planning and decision making ○ Lack of ground water recharge systems, lack of enforcement of ground water use and inadequate ground water monitoring systems ○ Limited financial resources to promote educational drives and awareness campaigns on water use	○ Expedite the infrastructural set up for ground water monitoring ○ Support the development of a central data management platform and publicise its importance and foster linkages with other projects ○ Develop sustainability plans for infrastructural management and maintenance ○ Develop and implement plans for ground water recharge systems ○ Improve monitoring of abstractions and water use ○ Build capacity for ground water management ○ Mobilise financial resources to promote educational drives and awareness campaigns ○ Build capacity on climate financing

4	Strengthen the capacity of early warning systems	○ Development and implementation of a national flood and drought risk reduction strategy by 2030 ○ Development, launch and capacitation of JRBA project board ○ Rehabilitation and infrastructure upgrade for water gauging, related hazards and other disaster risks	○ Limited compatible infrastructure for the detection and monitoring of water availability and associated risks. ○ Inadequate historical data to allow for modelling and anticipation of cyclic changes in water availability, droughts and heat waves ○ Inadequate coordination of data gathering, analysis and sharing between Ministry of Natural Resources and Energy (MNRE's) DWA and stakeholders ○ Reduced visibility and joint sector reviews and discussions ○ HydroNET is still under development & hence no timely release of warning messages to the public & interested stakeholders ○ Limited number of near real time gauging stations available to give instant data ○ Thresholds not set yet to give early warning information	○ improve the implementation of infrastructural set-up for early warning detection ○ Strengthen data collection, analysis and sharing systems by the Department of Meteorology (Ministry of Tourism and Environmental Affairs/MTEA) for weather forecasting ○ Develop sustainability plans for the management and maintenance of water monitoring and gauging infrastructure ○ Establish national laboratories for water quality testing ○ Mobilise funds to upgrade manual gauging systems to be near real time gauging stations and to manage and maintain the HydroNet platform ○ Develop system operation rules and procedures ○ Incorporate indigenous knowledge systems in early warning systems

5	Develop & implement catchment adaptation plans & strategies	○ Development of the draft Wetlands Management Policy of 2020 and the Invasive and Alien Plant Species (IAPS) Strategy of 2021 and the implementation of the National Environmental Policy of 1997 ○ Partnering with research institutions on water use adaptation, impacts of climate change and innovative plans for the agriculture sector ○ Awareness raising on best practices for water use and climate change adaptation	○ Lack of coordinated planning on catchment management and adaptation plans ○ Lack of national data on catchment mapping, practices and activities ○ Limited awareness on catchment management and related impacts on climate change ○ Inadequate enforcement of catchment legislation and protected areas management ○ Fragmented regulations and guidelines on catchment management ○ Limited funding of related research	○ Implement the recommendations from the Mbuluzi RBA climate change vulnerability assessment and development of catchment and community adaptation plans to incorporate lessons learnt into the development of other catchment adaptation plans and strategies ○ Upscale climate adaptation plans for other RBAs ○ Enforce catchment legislation and promote the management of environmentally sensitive areas that contribute to water security ○ Build capacity within RBAs and other sub-national organizations for catchment management ○ Mobilise funding for research related to catchment adaptation strategies

6	Control Invasive Alien plant species & pollution in catchments	○ Inclusion of the IAPS and streamlining of climate change in the NWP of 2018, the draft National Wetlands Policy of 2020, second NBSAP of 2016 and the formalization of the IAPS Control & Management Strategy of 2021 ○ Special attention to IAPS, and pollution of catchments in the state of environment reports ○ Drafting of the Komati Catchment Climate Change Strategy ○ Development and implementation of waste management strategies for major towns ○ Mapping of IAPS in 2010	○ Lack of coordinated and sustainable approach to eradicating IAPS ○ Ineffective monitoring and slow mapping of IAPS and catchment pollution hotspots ○ Slow uptake of innovative measures to beneficiate and control the progression of IAPS ○ Incomplete implementation of various strategies for the control of IAPS and catchment management ○ Limited capacity at Eswatini Environment Authority (EEA) to monitor environmental pollution through wastewater effluents and breach of environmental guidelines on pollution. ○ Inadequate capacity at Eswatini National Trust Commission (ENTC) to manage IAPS ○ Lack of resources to implement strategies that deal with IAPS	○ invest in research on alternative beneficiation of IAPS for economic benefit ○ Improve the monitoring and mapping of IAPS ○ Capacitate and synergise the operations of ENTC, EEA and community organizations in the control of IAPS and the prevention of pollution of catchments ○ Mobilise resources for the implementation of the strategy ○ Pass the draft wetlands policy

7	Design & construct water storage infrastructure for multiple use i.e., large dams, earth dams, sand dams etc	○ Several dams have been built in the country, some have multiple uses e.g., Maguga, Lubovane etc ○ Development of draft dam safety regulations of 2020 and implementation of the streams and banks regulations of 1951 ○ Feasibility studies for of Nondvo, Mpakeni and Ethemba dams ○ Dam drawing are available for Mpakeni ○ Development and implementation of chiefdom development plans ○ Improvement and expansion of potable water reservoirs and rural potable water schemes	○ Non-upgradable dam designs ○ Limited resources to design, construct and maintenance of multi-purpose dams ○ Ineffective sustainable dam infrastructure management and maintenance ○ Imbalance in the distribution of resources for rural and urban population, and amongst other water uses ○ limited number of climate proof dams ○ Poor dam maintenance resulting in reduced capacity over time	○ Rehabilitate and maintain existing dams ○ Establish a rehabilitation & management plan for water storage facilities ○ Climate proof available dams where possible ○ Mobilise resources for the contraction of the Nondvo, Mpakeni and Ethemba dams ○ Carry out periodic bathymetric surveys for all dams
8	Assess sustainable water supply options beyond 2030 through conducting water assessments/studies	○ Development of water supply guidelines ○ Strengthen and formalise the WASH forum ○ Strengthen relationships with research institutions for research into water supply options and innovative means for water supply	○ Isolated commissioning of assessments for the water sector ○ Limited access to baseline data for ease of conducting assessments ○ Supposed neglect of rural communities on stakeholder engagement on water supply ○ Lack of funding and coordination of research for local solutions in water supply	○ Coordinate sectoral research which will be a base for decision making for the sector ○ Source and commit funding for research into alternative water supply options

1.3 Gap Analysis for Health Sector

One of the barriers to the development of adaptive capacity to the impacts of climate change in the health sector in Eswatini is its curative, rather than integrated care approach. The curative approach is very costly[3] and fails to prevent the occurrence of the disease events but responds to it once presented. This is a limitation to planning and prevention of diseases, particularly taking into consideration the burden on the health sector that is already exacerbated by climate change. The specific gaps in health adaptation are presented in **Table 1.2**.

1.3.1 Legal and institutional gaps

The lack of policies, strategies and plans for mainstreaming climate change in the health sector is one of the biggest barriers impeding the health sector's adaptation to climate change. Although the heart of the National Health Policy 2016 and the National Health Sector Strategic Plan 2019-2023 is overall, to provide universal health coverage, it becomes difficult to implement such ambitious plans in the absence of the appropriate and enabling policies and strategies. To develop such policies, it is important to have research data that support the policy. However, often research is lacking for climate change-related impacts in Eswatini, therefore, there is need to strengthen scientific research in the health sector, particularly, in relation to climate change. There are also gaps in political buy-in where available scientific information is not used to make policy decisions, poor intergovernmental collaboration and poor collaboration between the private and public health facilities. As a result of, among others, lack of resources, there is also poor implementation of existing policies and strategies, coupled with poor institutional arrangements resulting in suboptimal use of the available resources. There is therefore a need for the health sector to focus on establishing policy frameworks and collaboration mechanisms to provide the needed guidance and support in order to mainstream climate adaptation into the health sector. In addition, the development of a health national adaptation plan will go a long way in strengthening the health sector's adaption to climate change.

1.3.2 Capacity gaps in the health sector

The lack of capacity in the health sector, particularly for climate change adaptation, cannot be over-emphasised. The current climate change disease-sensitive response programmes have reported human resource capacity gaps. There is lack of understanding and linkage between climate change and health outcomes. This is because there are no training programmes that help health workers link the observed health outcomes to climate change. There is need to strengthen the capacity of healthcare workers to respond to climate change through relevant training. These courses can also be mainstreamed in the health training institutions in the country to ensure that capacity is built pre-service. There are also capacity gaps for use of technology, particularly the Client Management Information System (CMIS), early warning systems and within specific programmes, therefore there is a huge opportunity to strengthen capacity of healthcare workers. In addition, the community is not adequately capacitated with knowledge to evade the impacts of extreme weather events and climate change. Training and information dissemination fora are needed to educate both healthcare workers and the population on the impacts of climate change on health.

1.3.3 Technology and infrastructure gaps

Infrastructure plays a critical role in enabling long-term development. It is, therefore, important to close infrastructural gaps to enable adaptive capacity of systems. The health sector in Eswatini is particularly vulnerable to climate change impacts and this is increased by the infrastructural gaps that exist within the sector. The health facilities are not climate-proofed and, therefore, are vulnerable to the impacts of climate change. During extreme weather events, some health facilities become inaccessible and face operational challenges due to loss of power and/or water supply. It is, therefore, important that these facilities have sustainable water and power supply to be able to continue to operate even during periods when their grid supply is interrupted. There is also a huge technology gap in the health sector, particularly hardware and software. These are necessary to enable the sector

to utilise early warning systems, plan for adaptation actions and maximally use the CMIS to collect and collate data for easy reporting and tracking of some climate-sensitive disease outcomes. A fully functional CMIS at facility level helps the Health Management Information System (HMIS) obtain accurate reports and be able to track important health variables. There are also very weak surveillance systems to inform decision making and no projections for future climate related diseases are currently being done. These all need to be strengthened to enhance the adaptive capacity of the health sector.

1.3.4 Financial needs

There is a glaring financial gap in the health sector, due to the government's fiscal challenges. The health sector finds itself heavily reliant on donor funding. This shifts the focus of the health sector to programmes that have funding and unfortunately may not always reflect local priorities. Climate-related disease outcomes are normally underfunded, except for Malaria where the country currently holds the chairmanship of the African Leaders Malaria Alliance (ALMA). The lack of resources compromises a lot of the adaptation measures articulated in the NDC and communications to the United Nations Framework Convention on Climate Change (UNFCCC). There is a need to inject finance to the health sector for it to be able to meet its adaptation ambition.

Table 1. 2: Gap analysis for the health sector

	Adaptation option	Actions taken	Gaps	Recommendations
1.	Mainstreaming climate change into the national health policy and other strategic documents	Currently no actions to achieve this adaptation option. National Health Policy 2007 and National Health Sector Strategic Plan 2019-2023 are the backbone documents	○ Lack of policies, strategies and plans for mainstreaming climate change ○ Limited local research to inform policy options ○ Minimum awareness about the impacts of climate change on health. ○ Health sector is mainly curative in approach	○ Conduct a risk assessment for the health sector to understand the impacts of climate change on the sector ○ Establish policy frameworks and collaboration mechanisms to provide guidance and support to mainstream climate adaptation into the health sector ○ MOH, with the assistance of climate change unit, need to design and implement projects that mainstream climate adaptation ○ Strengthen partnerships with key ministries to galvanize broad support for strengthening health systems ○ Develop a Health National Adaptation Plan (H-NAP) ○ Include climate planning when developing and reviewing policies and strategies in the health sector
2.	Strengthening climate-informed disease control programs	Currently, there are several programmes that respond to climate sensitive disease outcomes, and these have done some considerable work such as: ○ Malaria control - National Malaria Control Programme ○ Infection control of water-borne, and water-washed diseases - Infection prevention & control programme and Neglected Tropical Disease Programme	○ Limited resources – financial, HR, working tools, infrastructure ○ Sustainability challenges - donor funded programmes normally fail when government must take over them ○ Fragmentation of the response – no collaboration with other relevant ministries ○ Limited multi-sectoral collaboration (not formalised in some cases) ○ Policies and strategies are not adequately implemented	○ Strengthen and incorporate early warning systems into disease surveillance and response systems ○ Tap into climate finance to deal with the challenges associated with lack of resources ○ Improve communication systems for early warning information among the key departments/programmes ○ integration, coordination within the ministry of health & with other ministerial departments for optimal use of IVM ○ Need for continuous awareness raising in the communities

Adaptation option	Actions taken	Gaps	Recommendations
	Strengthening vector control in the communities – integrated vector control management ○ Improving sanitation - Environmental Health Programme ○ Other programmes and projects such as Epidemiology and Disease Control Unit, Integrated Management of Neonatal and Childhood Illnesses, development partners, NGOs, etc., also play a critical role in water related diseases Screening for non-communicable diseases Snake bite has now been incorporated by the World Health Organisation (WHO) in neglected tropical diseases, this has been through the efforts of MOH working together with the Eswatini Antivenom Foundation. Promoting of exclusive breastfeeding and complementary breastfeeding to prevent acute malnutrition There is a specialised hospital to deal with mental health illnesses in Manzini	○ Fragmented availability of medicines for treatment and prevention – supply chain issues ○ Climate change is not mainstreamed in the health response ○ Political influence in scientific decisions - scientific information from technocrats is not used to inform decision making **Specific programme challenges** <u>Vector-borne diseases</u> ○ The Integrated Vector Management (IVM) tool is not adequately used for the control of bilharzia because the bilharzia and malaria programmes were functioning as separate programmes ○ No mosquito nets in newly encroached malaria areas since the mosquito nets distribution programme was partner supported ○ Mosquito nets are misused – in other cases, communities use them for fishing <u>Food and nutrition to prevent malnutrition</u> ○ There is lack of policies & legislation, particularly to regulate food quality, including imported foods	○ Strengthening preventative strategies, particularly strengthen the one health approach ○ Review of health policies & strategies on climate-sensitive diseases ○ Implementation of breastfeeding hour in companies ○ Education about mental health ○ Spread awareness on locally available nutrient rich indigenous foods to circumvent the problems of malnutrition

	Adaptation option	Actions taken	Gaps	Recommendations
			○ Lack of monitoring and hence there is often a misuse of resources ○ Poor adoption of backyard gardens, particularly in urban areas ○ No budget for therapeutic foods to support populace in cases of malnutrition ○ Responsibility of malnutrition council is not well defined ○ Lack of infrastructure for monitoring of food nutritional value <u>Climate induced mental health conditions</u> ○ Lack of coordination within mental health units ○ No government monitoring of private practitioners and therefore lack of data ○ Mental health hospital is stigmatised	
3.	Improving and integrating the health management information system with other systems from relevant sectors to achieve a centralized Monitoring Review and Verification (MRV) system	○ Conducted trainings on Client Management Information System (CMIS) and basic computer skills at facility level and final students in the health institutions. ○ Disbursement of hardware to health facilities ○ Data migration from paper recording to CMIS	○ No link between the HMIS and other climate information systems ○ Lack of funding and therefore shortage of tools and equipment ○ Data collection tools need to be reviewed to capture some of the required information ○ Mortality information not disaggregated by sex, age and cause of death	○ Train personnel to ensure accurate data capturing and timely reporting ○ Transition from paper based client data capture to CMIS ○ Using the knowledge gained from the COVID-19 disease surveillance to improve data capturing and use of technology for other notifiable diseases ○ Disaggregate patient information in the CMIS to capture defined climate change variables/indicators ○ Relate health data to weather events

	Adaptation option	Actions taken	Gaps	Recommendations
			○ Challenge of recording climate change related deaths as some do not go via healthcare services ○ Private practitioners – no adequate access to data ○ Not all facilities have access to CMIS, therefore data capture is paper based in some facilities.	○ Link HMIS with the births and deaths register to ensure that non-hospital deaths are synchronised in health reporting
4.	Strengthening the preparedness and resilience of the health sector to respond to climate related emergencies and illnesses through preparedness plans and programs.	○ Prevention – Motor Vehicle Accident Fund hosts a programme to prevent accidents, raise awareness, and conduct health facility & community preparedness ○ Response to emergencies – provision and use of 112 national emergency reporting health line ○ Collaborating with rural health motivators to build emergency preparedness capacity in communities	○ Preparedness plans are not implemented and monitored ○ Assessment of hospital health index is not completed ○ Establishment of emergency disaster management is not sustained ○ Poor intergovernmental coordination (improve technology) also with private companies ○ Lack of political buy-in ○ Causality units not managed efficiently (competing mandates, conflicting agendas & protection of niches) ○ Call centres are not integrated as there are many emergency numbers in operation ○ Lack of accountability among health workers ○ Limited awareness of emergency strategies (Essential health care package) ○ Limited multi-sectoral collaboration (not formalised in some cases)	○ Improve early warning to enable preparedness and response ○ Ensure adequate supply of human resource equipment, and drugs to enable response in emergencies ○ Complete the hospital health index assessment ○ Ensure preparedness plans are implemented ○ Improve management and coordination of preparedness systems to ensure that hospitals are readily organized and resourced to receive patients in times of emergencies ○ Forecast and monitor emergence of other climate change related diseases ○ Integrate call centres for improved management and response ○ Government should subcontract private emergency service providers to ensure efficient provision of emergency vehicles at all times

	Adaptation option	Actions taken	Gaps	Recommendations
			○ Death information not disaggregated in sex, age and cause of death ○ Compromised sustainability of programmes as most are donor funded and normally fail when government must take over ○ Ambulances are not managed centrally ○ Lack of maintenance of resources e.g., ambulances are not maintained adequately resulting in shortages as many are in the central transport administration garage	
5.	Strengthening capacity of healthcare workers on the adverse impacts of climate change; and	Health workers, particularly from the Environmental Health Programme, have been invited to climate change workshops and trainings. Participation in the United Nations Framework Convention on Climate Change (UNFCCC) Climate Change Conferences (COP)	○ Insufficient capacity among healthcare workers on matters related to climate change impacts on health ○ Capacity gaps within specific programmes ○ Insufficient training of stakeholders about climate change health risk and adaptation needs	○ Climate change should be mainstreamed in education sector and healthcare workers should receive climate training pre-service ○ Conduct on-the-job training for healthcare personnel on climate change ○ Strengthen processes for Nurse's and Dental Councils to include pre-service training on climate change impacts on health ○ Support capacity-building through the setting of norms and standards.
6.	Educating and informing the public of the needed measures to protect health from the adverse impacts of climate change.	○ NERCHA has done a documentary on climate change impacts on health ○ Many education initiatives but not climate change centric	○ Lack of Awareness & training ○ Inadeqaute knowledge about climate change and its impact on health	○ Produce infographics about the impact of climate change on health and the measures to protect health from climate change ○ Use the media for briefings on climate change and health e.g., use of national radio, national television and social media ○ Produce documentaries about climate change and health

	Adaptation option	Actions taken	Gaps	Recommendations
				○ Publish weather alerts with related health risks
7.	Adopting sustainable climate smart technologies to enhance the resilience of communities and health care facilities	○ Eastern and Southern African Region Office (ESARO) project 2019 to determine the state of WASH financing in Eswatini ○ Health System Strengthening for Human Capital Development in Eswatini Project, 2020 ○ Infrastructure built through funding from world bank requires climate proofing building	○ Poor financing of the WASH sector ○ Mapping of outside toilets ○ Lack of public awareness ○ Availability and Accessibility of climate technologies for sanitation and hygiene ○ Regulation of NGOs for the implementation of WASH activities ○ Investment for sanitation is low ○ Municipalities do not have authority for water & it rests with Eswatini Water Services Corporation (EWSC) ○ Coordination with other service providers is limited EWSC & Eswatini Electricity Company (EEC) – infrastructure ○ Working together with land management committee for construction of homes (toilets) ○ Land regulation	○ Policy for infrastructure development in the health sector should include climate proofing ○ Make hospitals and community clinics more climate-resilient through appropriate design and building materials. ○ Develop guidelines for the design and locating of health care infrastructure outside climate risk prone areas. ○ Design and build climate-proof water facilities to prevent flooding and contamination of water supply. ○ Plan for backup power capacity in health service facilities in areas where natural disasters may occur
8.	Establishing a multi-hazard early warning system to trigger prompt public health intervention when certain variables	○ National Malaria Control Programme (NMCP) has installed 8 automatic weather stations in different clinics in the four regions of the country	○ Surveillance infrastructure and technologies are limited ○ Limited technical capacity to establish a multi-sectoral early warning system	○ Strengthening the health system to share information from early warning systems ○ Develop weather forecasting, early warning systems, and local climate impact scenarios to ensure that information reaches the most exposed and vulnerable.

	Adaptation option	Actions taken	Gaps	Recommendations
	exceed a defined threshold.	○ Epidemiology and Disease Control Unit together with National Malaria Control Programme participate in seasonal and monthly meetings for weather forecasting with the Meteorology Department ○ HydroNET is being installed to give early warning for upcoming weather events	○ Very weak surveillance systems to inform decision making ○ Information about weather changes and/or extremes is not adequately shared within the different health departments ○ No projections for future climate related diseases – lack of institutional research - the current research unit is partner driven ○ Information shared is unreliable e.g., early warning (conflicting statements sent to the public) ○ Surveillance of climate related diseases is not adequate.	
10.	Financing health actions to address inequities and climate related vulnerabilities	○ Eastern and Southern African Region Office (ESARO) project 2019 to determine the state of WASH financing in Eswatini ○ Health System Strengthening for Human Capital Development in Eswatini Project, 2020 ○ End Malaria Fund 2019	○ Lack of funds – government fiscal challenges ○ Heavy reliance on partner funds	○ Engage private sector to fund specific programmes as part of their corporate Social Investment (CSI) ○ Tap into climate change funding
11.	Promoting capacity building through research and development, education and awareness, and training in climate change related issues	○ Epidemiology and Disease Control Unit conducts research ○ National Health Research and Innovations Department also facilitates research within the sector	○ No link between climate data and health outcomes ○ Lack of capacity to do research ○ Very weak research to inform decision making ○ Inadequate local data to inform development of adaptation options	○ Invest in research on risks and responses to protect health from climate change ○ Invest in research to link health impacts to climate change

	Adaptation option	Actions taken	Gaps	Recommendations
12.	Mainstreaming gender responsive climate policies and emphasize special efforts to support vulnerable groups (women, youth, and children) in climate change adaptation efforts within all sectors of the economy	○ Health System Strengthening for Human Capital Development in Eswatini Project, 2020 focussing on Non-communicable Diseases (NCDs) and reproductive, maternal, new-born, child and adolescent health ○ Current health actions are not gender biased as health has specific programmes targeting women, adolescents and children.	○ Gender, climate change and disability are recognised as cross cutting strategic issues, however, there are no defined strategic goals and actions stipulated to enable implementation ○ Accessibility of some health programmes due to climate change impacts, e.g., during adverse weather events, some clinics may become inaccessible and therefore this may affect access for pregnant women and children	○ Include vulnerable groups in climate change strategies in the health sector ○ Ensure that programmes are not gender biased and therefore increase the already existing inequalities ○ Improve accessibility of health facilities by constructing them in areas that are less prone to the impacts of adverse weather events and ensure use of climate-smart technologies in health facilities

1.4 Cross-cutting issues

Water, sanitation and hygiene (WASH) as well as gender issues (including all vulnerable groups) are cross-cutting for all sectors. These are therefore discussed jointly in this section for both water and the health sector.

1.4.1 Water, Sanitation and Hygiene (WASH)

Sanitation and hygiene are influenced by the availability and quality of water, yet they have a huge bearing on the health sector. Water, Sanitation and Hygiene (WASH) adaptation measures therefore need to be addressed by both sectors. In Eswatini, WASH issues are generally under the health sector as demonstrated by the National Sanitation and Hygiene Policy, 2019 which is under the Ministry of Health. The MNRE, especially the DWA is also responsible for the provision of clean water in the country. NGOs such as WaterAid and many others have also played a key role in the WASH space. Adaptation to address WASH issues can therefore be a joint effort between these two sectors.

The main gaps in WASH are illustrated in **Table 1.3** and include, among others, poor access to clean water which results in poor hygiene practices, poor WASH coordination poor WASH financing, etc. These impede the gains that may be realised through improving WASH. Although there are several projects targeting improved access to WASH, these are not coordinated and sometimes human settlements and particularly pit latrines are inappropriately situated close to water sources and thereby negate the gains of installing, for example, boreholes.

1.4.2 Gender and vulnerable groups

One of the guiding principles in climate change adaptation and programming outlines that an adaptation plan should be gender inclusive, transparent, accountable and culturally appropriate. This principle therefore advocates for sensitivity towards vulnerable groups which include the elderly, children below 5 years, LGBTQI, rural population, elderly, disabled and youth. In communities, the responsibility to collect water, care for the elderly and the sick lies with women. Women and young girls must travel long distances to water sources in some instances, yet they are vulnerable to rape, murder and other gender related harm. Carrying water over long distances may also be harmful to women of childbearing age yet also reducing the time available to carry out other domestic responsibilities that promote sanitation and hygiene.

These circumstances have resulted in rationed water for domestic uses with priority given to cooking whilst neglecting health and hygiene needs for the household therefore leaving the population more susceptible to disease and infections as demonstrated by the challenges faced during the COVID-19 pandemic. The gaps related to gender and other vulnerable groups in both sectors may be classified as developmental and further interventions should be implemented with a climate lens. Other gaps include lack of capacity in gender mainstreaming and lack of participation of women and girls in decision making.

Table 1. 3: Gap analysis for the WASH

	Adaptation option	Actions taken	Gaps	Recommendations
1	Enhance Water supply, Sanitation and Hygiene (WASH) Sector contribution	○ Development of the draft drinking water regulations of 2020 and the health bill of 2018 ○ Launch of the national sanitation hygiene policy of 2019 ○ Strengthen and formalize the WASH forum ○ Expansion and maintenance of potable water infrastructure and dam capacity for both rural and urban areas ○ Development of drought response plan for water storage facilities ○ Implementation of recommendations of WASH and climate change assessments	○ Lack of access to clean water limit practice of good hygiene ○ Lack of comprehensive capacity building for rural water management within communities and MTAD ○ Lack of verified and consistent data for water reach and use ○ Capacity inefficiencies within the DWA and sub-national organisations for water management ○ High cost of implementation of sanitation and hygiene programs in rural areas ○ Poor sustainability of WASH infrastructure in rural areas	○ Assess the sustainability of sanitation & hygiene infrastructure in the country, especially in peri-urban & rural areas ○ Capacitate rural communities on water management including sanitation & hygiene ○ Mobilise resources for the implementation of sanitation and hygiene programmes in peri-urban & rural areas ○ Clarify and confirm legal status and ownership of rural water supply assets ○ Review economic and community aspects and select preferred management models for rural water service provision ○ Promote best and appropriate technologies for rural water supply ○ Facilitate and encourage safe and equitable rainwater harvesting technologies at household and community levels
2	Create an enabling environment for the governance of WASH activities to promote resilience against climate change	○ Development of the draft health bill of 2018 ○ The launch of the National sanitation strategy 2019-2023 ○ Financing and capacity building of the National Water Authority (NWA), JRBA project board	○ There is no legal obligation to participate in the WASH forum ○ Limited climate change mainstreaming & sustainability considerations of interventions in rural areas ○ Leadership deficiencies in the management of rural WASH infrastructure and management of projects	○ Revive and formalise the WASH forum ○ Lobby for the passing of outstanding WASH related legislation ○ Implement the sanitation and hygiene strategy with gender and climate change mainstreaming ○ Capacitate MTAD and relevant sub-national structures on programming community cooperation with emphasis on sustainability in water supply ○ Develop Water Safety Plans for all water supply schemes.

3	Secure climate proof WASH infrastructure	○ Open Defecation Free Project 2016-17 ○ Environmental Health Programme building VIP latrines in different regions ○ Waste and livelihoods project implemented by UNDP ○ Project to develop National Integrated Waste Management Pollution Prevention and Control Policy ○ Several WASH projects in communities, schools and clinics funded by Microprojects and World vision International (WVI)	○ Need for sanitation facilities that cater for specific needs of vulnerable groups (physically challenged, elderly, physically infirm and children) ○ Lack of coordination (WASH management information system) ○ Poor financing of the WASH sector ○ Proper mapping of pit latrines to prevent contamination of water sources ○ Lack of public awareness ○ Availability and accessibility of climate technologies for sanitation and hygiene ○ Investment for sanitation is low – ○ Municipalities do not have authority for water & it rests with EWSC ○ Coordination with other service providers is limited (EWSC & EEC) – infrastructure ○ Lack of enforcing mechanism for land regulation ○ Lack of access to clean water limit practice of good hygiene	○ Regulate and coordinate the implementation of WASH interventions by NGOs for equitable and sustainable solutions ○ Working together with land management committee for construction of homes (toilets) ○ Adhere to regulations posed by donors who are climate change conscious and environmentally compliant such as the World Bank funded projects

Chapter 2 – Adaptation action plan for the water and health sectors

2.1 Introduction

The previous chapter outlined the gaps identified for the adaptation measures in the water and health sectors. This chapter presents an action plan that will help to close the identified gaps for the two sectors, including WASH.

2.2 Adaptation action plan for the water sector

The country has achieved and made progress in climate change awareness within the sector. The set-up of systems to respond and adapt to climate change has been received well and appreciated by stakeholders. The uptake of drip irrigation in agriculture is but one of the strategies that gives a measure of the appreciation of the impacts of climate change. The slow passing of legislation into law is viewed as a hindrance to the implementation of several adaptation measures such as enforcing water use efficiency, water pricing and the consideration of alternative water supply options beyond 2030. The slow passing of legislation, coupled with limited access of climate finance, capacity gaps within government and limited use and access to technology and advanced infrastructure needs a well-coordinated action from stakeholders to overcome the challenges and hasten climate change adaptation in the sector. The analysis of the identified gaps has resulted in the development of the adaptation action plan as shown in **Table 2.1.**

Table 2. 1: Adaptation action plan for the water sector

Adaptation measure	Activities	Performance Indicators	Responsible institution	Priority
Improve water governance & compliance	○ Finalise & pass all the draft policies, bills & regulations that are relevant for water governance	Policies & laws that have been passed and adopted as national documents	MTEA MNRE	1
	○ Commission a skills audit for ministries & departments that are key in water governance & compliance including RBAs	Skills assessment report	MNRE, MTEA	1
	○ Capacitate implementing partners including national and sub-national organisations	Number of trained personnel		2
Develop water pricing structures	○ Lobby for the speedy passing of water pricing regulations	Passing into law and implementation of the water pricing regulations	MNRE, MoA, MoJ	1
	○ Strengthen the capacity of the JRBA on water pricing	Number of personnel trained on water pricing implementation	MNRE, MoA	1
	○ Consider incentivising water pricing infrastructure through co-funding	Stakeholders buy-in on the water pricing and guidelines on the incentives	MNRE, MoA, MEPD, MTAD	2
	○ Broaden stakeholder consultation to reach all constituencies through MTAD	Number of communities in constituencies engaged in the water pricing	MNRE, MTAD	2
Strengthen the control & monitoring of water availability & use	○ Upgrade manual gauging systems to be near real time gauging stations.	Number of manual gauging stations that have been upgraded to near real time	MNRE	1
	○ Capacitate personnel involved in control & monitoring of water availability & use	Number of personnel with improved skills and/or qualifications within the RBA & any other monitoring institutions	MNRE	1
	○ Create more positions within the RBAs to improve monitoring and service provision	Number of personnel employed by the RBA to help in the control & monitoring of water availability	MNRE	2

Adaptation measure	Activities	Performance Indicators	Responsible institution	Priority
	○ Support the development of a central data management platform and publicise its importance	Functioning central data management system Records for public awareness activities on the data management system	MNRE	1
	○ Develop plans to control & monitor water availability such as sustainability plans for infrastructural management & maintenance, ground water recharge systems	Water control & monitoring plans developed & implemented	MNRE	1
Strengthen the capacity of early warning systems	○ Improve the implementation of infrastructural set-up for early warning detection	Functional early warning system in place	MTEA, MNRE, MOH	2
	○ Strengthen data collection, analysis and sharing systems by MET for weather forecasting	Weather data collected, analysed & shared efficiently	MTEA	1
	○ Establish national laboratories for water quality testing	Number of water testing national laboratories established	MNRE, MEPD, MICT, EEA	1
	○ Mobilise funds to upgrade manual gauging systems to be near real time gauging stations	Number of near real time gauging stations installed	MNRE	2
	○ Mobilise resources to build up HydroNet	HydroNet giving out early warnings on climate related information	MNRE	1
	○ Capacitate other collectors of data to analyse their data for incorporation into HydroNet	Data from different institutions/stakeholders available and loaded to HydroNet	MNRE	2

Adaptation measure	Activities	Performance Indicators	Responsible institution	Priority
Develop & implement catchment adaptation plans & strategies	○ Implement recommendations from the Mbuluzi catchment assessment and adaptation to incorporate lessons learnt into the development of other catchment adaptation plans and strategies	Number of commissioned projects with focus on catchment adaptation	MNRE, MTEA	2
	○ Build capacity within DWA and other sub-national organizations for catchment management	Number of officers trained and capacitated on catchment adaptation	MNRE	1
Control Invasive Alien plant species & pollution in catchments	○ Invest in research on alternative beneficiation of IAPS for economic benefit	Number of research reports on IAPS beneficiation	MTEA, MNRE, MoE	2
	○ Improve the monitoring and mapping of IAPS	Number of monitoring & mapping reports	MTEA, MNRE	3
	○ Mobilise resources for the implementation of the IAPS control & management strategy	Implemented IAPS strategy	MTEA, MNRE, MoF	2
	○ Pass the draft wetlands policy	Adopted wetlands policy	MTEA, MoJ	1
Design & construct water storage infrastructure for multiple use i.e., large dams, earth dams, sand dams etc.	○ Rehabilitate and maintain existing dams	Number of well-maintained dams which can hold maximum capacity of water	MNRE, MOA, MPWT	2
	○ Establish a rehabilitation & management plan for water storage facilities	Rehabilitation & management plans developed for water storage facilities	MNRE, MOA, MPWT	3
	○ Climate proof available dams where possible	Climate proof dams available	MNRE, MOA, MPWT, MTEA	3

Adaptation measure	Activities	Performance Indicators	Responsible institution	Priority
	○ Mobilise resources for the construction of the Nondvo, Mpakeni and Ethemba dams	Resources available for the construction of proposed dams	MNRE, MOA, MPWT	3
Assess sustainable water supply options beyond 2030 through conducting water assessments/studies	○ Conduct studies that assess the sustainability of water supply beyond 2030	Assessment report available	MNRE, MTEA, MOA, MOH	3

2.3 Adaptation action plan for the health sector

The health sector has many opportunities to adapt to climate change and increase its resilience and adaptive capacity. The key gaps identified should be attended to in order to realise the benefits. One of these would be to develop a Health National Adaptation Plan (H-NAP) which will outline the specific actions that should be taken to increase the sector's adaptive capacity and reduce the gaps identified. Other actions include the raising of general awareness and building capacity among healthcare workers on the impacts of climate change.

It is also important to strengthen the health system to transition from the curative care approach to integrated care approach to be able to optimally use the benefits from health promotion and preventative care. For this, financing will be important to shift the already strained financial resources which are currently used for curative care to target prevention and health promotion. Climate change adaptation must not lean on strengthening response only, but also preventing the adverse health events resulting from climate change. To deal with the huge financing gap, the Eswatini health sector needs tap into climate financing. The One Health[4] approach will also facilitate the use of co-benefits from mitigation/adaptation actions from other sectors to enhance the health sector's adaptive capacity. The overarching enabling tools for all these actions, is centred around a legal framework that is cognisant of climate change impacts and therefore prioritises and enables the health sector to design programmes/projects/activities that will facilitate and aid the sector to ride above the climate change tide. **Table 2.2** is a detailed action plan, which proposes specific actions which need to be undertaken to close the gaps identified in the gap analysis (**Table 1.2**).

Adaptive action must consider the emergence of future global pandemics, such as the COVID-19 pandemic which further increase the health sector's vulnerability, adding onto the already existing burden of HIV/AIDS, tuberculosis, cancer and non-communicable diseases.

Table 2. 2: Adaptation action plan for the health sector

Adaptation measure	Activities	Performance indicators	Responsible institution
Mainstreaming climate change into the national health policy and other strategic documents	Conduct a risk assessment for the health sector	A risk assessment report	MOH, MTEA
	Sensitizing Senior Health Personnel on Climate change	Buy-in from top management for the mainstreaming of climate change in the sector	MTEA
	Include climate planning when developing and reviewing policies in the health sector	Number of policies incorporating climate change	MOH
	Incorporate climate planning when developing and reviewing strategies in the health sector	Number of strategies incorporating climate change	MOH
	Developing Health National Adaptation Plan (H-NAP)	Approved H-NAP report	MOH MTEA
	Develop a costed implementation plan for the H-NAP	Costed implementation plan report for the H-NAP	MOH MTEA
	Develop an M&E plan for the H-NAP	M&E plan for H-NAP developed	
Strengthening climate-informed disease control programmes	Strengthen and coordinate vector control with other ministerial departments for optimal use of IVM	Number of multi-sectoral meetings Number of projects for collaborative vector control	MOH MOA
	Strengthen preventative strategies, particularly the one health approach	Number of interventions using the one health approach	MOH
	Build capacity of healthcare workers within the programmes	Number of healthcare workers trained per year for specific climate related diseases	MOH
	Implement breastfeeding hour in the workplace to improve nutrition of under 5	Number of employers complying with breastfeeding hour Number of employers fined for non-compliance with breastfeeding hour	Ministry of Labour National Nutrition Council
	Conduct continuous education and awareness raising in communities	Number of information sharing or awareness raising sessions e.g., radio programmes, community meetings, etc.	MOH - all programmes

Adaptation measure	Activities	Performance indicators	Responsible institution
	Spread awareness on locally available nutrient rich indigenous foods to circumvent the problems of malnutrition (especially in under 5 and elderly)	Number of information sharing or awareness raising sessions e.g., radio programmes, community meetings, etc.	MOH - all programmes Ministry of Agriculture MTEA MNRE
Improving and integrating the health management information system with other systems from relevant sectors to achieve a centralized Monitoring Review and Verification (MRV) system	Train personnel to ensure accurate data capturing and timely reporting	Number of personnel trained	MOH -HMIS MTEA
	Appoint a focal person for health on climate change	Focal person appointed	MOH
	Create a link between climate change and MOH data	Link created	MOH-HMIS MTEA
	Develop an interoperable system between health and other climate data sources	System created	MOH-HMIS MTEA
	Develop a module within the CMIS to incorporate climate change	Tools developed and system able to disaggregate patient data	MOH -HMIS MTEA
	Use knowledge gained from the COVID-19 disease surveillance and vaccination to improve data capturing and use of technology for other notifiable diseases	Improved technology and data capture for notifiable diseases Data easily available and more accurate reporting	MOH -HMIS EDCU
	Transition from paper-based client data capture to CMIS – currently at about 80% coverage	Number of hospitals, clinics and healthcare centres using CMIS	MOH -HMIS
	Relate patient data to climate change events	Reports on climate sensitive disease data	MOH -HMIS M&E EDCU Research
	Link HMIS with the births and deaths register to improve reporting	Links with births and deaths register created	MOH -HMIS

Adaptation measure	Activities	Performance indicators	Responsible institution
	Create links with other climate change data capturing systems	Number of links created	MOH -HMIS
Strengthening the preparedness and resilience of the health sector to respond to climate related emergencies and illnesses through preparedness plans and programmes	Develop integrated preparedness plans and programmes	Number of preparedness plans/programmes developed	MOH
	Integrate climate change to existing preparedness plans and programmes	Number of programmes and plans integrating climate change	MOH
	Complete the hospital health index assessment	Hospital health index assessment completed	MOH -EPR
	Ensure adequate supply of human resource, equipment and drugs to enable response in emergencies	Adequate resources within hospitals and health centres % reduction in mortality and incidence for diseases related to weather patterns	MOH Pharmaceuticals
	Ensure hospital emergency rooms are readily organized and resourced to receive patients in times of emergencies	Improved patient outcomes	MOH – PR
	Improve management and coordination of preparedness systems to ensure that hospitals are prepared to receive patients in case of emergencies	Reduction in number of ambulances rejected/not received by emergency units in health services	MOH
	Integrate emergency numbers into one central call centre	Integrated emergency call centre	NDMA MOH Fire Services Department Royal Eswatini Police Service
	Conduct research to forecast and monitor emergence of other climate change related diseases	Early detection of emerging climate related diseases	MOH – Epidemiology Department
	Subcontract private emergency service providers to always ensure efficient provision of emergency vehicles	Number of public private partnership agreements signed	MOH, Ministry of Finance
	Develop tracking systems to determine availability of beds/space in health facilities	Central tracking system for hospital emergency rooms developed	MOH -EPR
Strengthening capacity of healthcare workers	Mainstream climate change in training institutions	Courses with contents on climate change and health	Ministry of Education Ministry of Health Nursing Council

Adaptation measure	Activities	Performance indicators	Responsible institution
on the adverse impacts of climate change			Medical and Dental Council
	Development and updating of curriculum in training institutions where health workers are trained	Courses with contents on climate change and health	Ministry of Education Higher Education Institutions
	Introduce regular on the job training/awareness for healthcare personnel on climate change	Number of training workshops/seminars/webinars hosted Number of participants trained	Ministry of Health MTEA - CCU
	Develop modules on climate change	Training modules developed	Ministry of Health MTEA - CCU
	Strengthen processes for Nurse's and Dental Councils to include pre-service training on climate change impacts on health	Pre-engagement assessment by Nursing and Dental Councils	Nursing Council Medical and Dental Council
	Develop standard operating procedures and operational norms	Standard operating procedures and operational norms defined	MOH – each department
	Strengthen capacity by training of trainers on climate change	Number of trainers trained	MOH MTEA
Educating and informing the public of the needed measures to protect health from the adverse impacts of climate change	Prepare, print and distribute infographics about the impact of climate change on health and the measures to protect health from climate change	Number and types of infographics distributed	Ministry of Health – Health Education Programme
	Use the media for briefings on climate change and health e.g., use of national radio, national television and social media	Number of programmes on climate change in the radio/national television/social media	MTEA-CCU MOH
	Strengthen Health talks by training health workers to integrate climate change in their routine health talks at facility level	Health talk integrating climate change	MOH MTEA
	Develop a talk package for healthcare workers	Standard health promotion package developed	MOH MTEA
	Produce a documentary about climate change and health	Number of documentaries produced	MTEA MOH Health Partners and stakeholders

Adaptation measure	Activities	Performance indicators	Responsible institution
	Publish weather alerts with related health risks	Number of weather alerts e.g., Air quality, temperature extremes, droughts, floods, etc. and their possible adverse effects on health published	MTEA-CCU MOH
Adopting sustainable climate smart technologies to enhance the resilience of communities and health care facilities	Make it mandatory to incorporate climate proofing in new infrastructure development for the health sector by incorporating climate proofing in the national health policy and strategic documents	Number of hospitals health services /clinics climate proofed	Ministry of Public Works MOH-Biomedical Engineering Unit Development partners/communities
	Develop guidelines for the design and locating of health care infrastructure outside climate risk prone areas	Guidelines developed	Ministry of Public Works MOH-Biomedical Engineering Unit
	Design and build climate-proof water facilities to prevent flooding and contamination of water supply	Number of climate proof water facilities in hospitals and clinics	MOH-Biomedical Engineering Unit NGOs WASH Partners
	Install sustainable and weatherproof power supply in health service facilities, particularly those located in areas where natural disasters may occur	Number of hospitals with backup power supply	Biomedical Engineering Unit Environmental Health Programme Ministry of Public, Works Development Partners
	Install boreholes in health facilities, especially rural clinics and provide tanks for water harvesting	Number of boreholes installed	Biomedical Engineering Unit Environmental Health Programme
Establishing a multi-hazard early warning system to trigger prompt public health intervention when certain variables exceed a defined threshold	Improve weather forecasting, early warning systems, and local climate impact scenarios to ensure that information reaches the most exposed and vulnerable.	Improved weather forecasting and early warning	MOH MTEA-CCU NDMA
	Improve communication of early warning information among the key departments/programmes within MOH	Communication reaching the necessary offices/programmes	MOH – Emergency Preparedness and Response Unit

Adaptation measure	Activities	Performance indicators	Responsible institution
Financing health actions to address inequities and climate related vulnerabilities	Engage private sector to fund specific programmes as part of their CSI	Number of private sector funding climate change health related vulnerability interventions	MOH
	Build capacity on the development of climate bankable proposals	Number of proposals submitted for funding Number of funded projects implemented	MOH
	Mobilise resources for the health sector (use lessons learnt from Covid-19 resource mobilisation)	Number of resource mobilisation strategies implemented	MOH
	Develop projects and project proposal to target climate change funding	Number of proposals submitted for funding Number of funded projects implemented	MOH
Promoting capacity building through research and development, education and awareness, and training in climate change related issues	Avail grant funds to conduct research on climate change and health - through budget allocation	Amount provided for grant funding	MOH research department Health partners Universities / Research Institutions
	Using the UNESWA-MTEA MOU, encourage and fund students to conduct health adaptation projects	Number of students conducting health adaptation research Number of students funded for health adaptation projects	UNESWA MTEA
	Develop specific reaserch topics and share with tertiary institutions	Number of research topic developed	MTEA, MOH
	Write proposals for funding to conduct research on climate change and health	Number of proposals submitted to funding agencies	MOH research department Health partners Universities / Research Institutions
	Commission studies on health and climate change	Number of publications (reports and manuscripts)	MOH research department Health partners Universities / Research Institutions
Mainstreaming gender responsive	Include vulnerable groups in climate change strategies in the health sector	Gender inclusive policies and programmes developed	MOH

Adaptation measure	Activities	Performance indicators	Responsible institution
climate policies and emphasize special efforts to support vulnerable groups (women, youth, and children) in climate change adaptation efforts within all sectors of the economy	Ensure that programmes are gender responsive and sensitive and therefore do not increase the already existing inequalities	Gender inclusive policies and programmes developed	MOH

2.4 Adaptation action plan for WASH

Table 2.3 gives the action plan for WASH. These actions also cover strengthening of the legal framework for WASH activities, infrastructural improvements, capacity building and implementation of appropriate technologies.

2.5 Adaptation action plan for gender and vulnerable groups

Some of the activities that have been adopted to enhance WASH in rural areas include use of water harvesting technologies (especially at household level), installation of communal water collection points (boreholes) which are meant to improve water access. Although the installation of boreholes has assisted adapting to the impacts of climate change, in most instances, maintenance is very poor and hence they usually have a short lifespan. It is also important to take into consideration the maladaptive practices that can result from this adaptation action. These include negative effects on health, especially mental health due to reduced social exposure for women and girls. In other instances, the women and girls look forward to the interaction provided by the water collection trips as these provide an opportunity to interact with other women/girls and may provide necessary relief to mental health stresses.

Some of the adaptation actions that can be employed in mainstreaming gender into climate action include capacity building. This ensures that the interests of vulnerable groups, such as women, youth, elderly and under 5s, are taken into consideration when planning for climate action. Presently, gender mainstreaming is poorly understood and building capacity would enhance meaningful consideration of gender issues. Another action that will improve equality and equity is the enhancement of participation of women and girls in decision making to facilitate representation of gender issues and finding solutions to gender-based problems. The development of gender responsive policies and strategies in natural resource management is also equally important. It should be noted that wherever capacity development (technically and financially) is being implemented, vulnerable groups should always be included.

Table 2. 3: Adaptation action plan for the WASH sector

Adaptation measure	Activities	Performance Indicators	Responsible institution
Enhance Water supply, Sanitation and Hygiene (WASH) Sector contribution	○ Assess the sustainability of sanitation & hygiene infrastructure in the country, especially in peri-urban & rural areas	○ Assessment report	MOH, MNRE, NGOs
	○ Capacitate rural communities on water management including sanitation & hygiene	○ Number of trained communities plus training records	MOH, MNRE, NGOs
	○ Mobilise resources for the implementation of sanitation and hygiene programmes in peri-urban & rural areas	○ Resources available for WASH in rural & peri-urban areas	MOH, MNRE, NGOs
	○ Facilitate and encourage safe and equitable rainwater harvesting technologies at household and community levels	○ Use of alternative water harvesting technologies at household level	MOH, MNRE, NGOs
Create an enabling environment for the governance of WASH activities to promote resilience against climate change	○ Lobby for the passing of outstanding WASH related legislation	○ WASH legislation passed	MOH
	○ Implement the sanitation and hygiene strategy with a climate change lens	○ Increase in percentage implementation of WASH strategy	MOH, MNRE, NGOs
	○ Capacitate MTAD and relevant sub-national structures on promoting resilience on climate change adaptation for all sectors, including WASH.	○ Number of capacity building initiatives	MOH, MNRE, NGOs
Secure climate proof WASH infrastructure	○ Regulation of NGOs for the implementation of WASH activities	○ NGOs reporting centrally for WASH intended projects	MOH, MNRE, NGOs
	○ Work together with land management committee for allocation of land to construct homes and in particular pit latrines	○ Number of homes and pit latrines located away from water sources	MTAD
	○ Construct climate proof pit latrines in schools and health service facilities	○ Number of health facilities and schools with waste management facility	MOH MOE

Chapter 3 – Conclusions

3.1 Conclusions

This report details the gaps and proposed actions for the water and health sectors with consideration for WASH and gender issues, which are cross cutting between the two sectors. The major gaps identified in both sectors can be categorised as legislative, technological, financial as well as capacity related gaps. In the water sector, appreciable progress has been made but there are still challenges related to water governance, management of pollution and catchment adaptation. There are still several legal instruments that need to be finalised to facilitate the implementation of some of the proposed adaptation measures for Eswatini such as the draft water pricing regulations. The scarcity of financial resources has been identified to cut-across most of the adaptation options hence some of the actions in the implementation plan involve resource mobilization. Finances also have a huge effect on the developed infrastructure and adopted technologies, which must be climate smart for resilience and sustainability.

In the health sector, the curative care approach was identified as the weak link because it does not focus on prevention and health promotion, which are the cornerstones for developing adaptive capacity. To withstand the impacts of climate change, the system must be able to project, plan and implement projects/programmes which increase its resilience. Legislative gaps within the health sector could be covered with relevant research that will inform policy and strategic decisions. The huge funding gap and subsequent reliance on donor funds by the health sector have resulted in the sector actively pursuing programmes and projects that have funding instead of the country priorities and gaps. It is therefore important for the health sector to pursue alternative sources of funding, such as climate finance, to be able to develop and implement adaptive strategies.

Access to clean water is one of the factors that affect sanitation and hygiene. It is for this reason that adaptation options for WASH overlap between these two sectors. The proposed action plan for this sector seeks to address issues of poor access to clean water, poor WASH infrastructure as well as the financing of WASH activities.

There are different activities that have been proposed for implementation, these should be coordinated by the leading institutions which include MNRE, MOH and MTEA. This ensures sustainability and ownership of the activities. The report also proposes the involvement of other government ministries/departments, as well as stakeholders who need to play key roles in some of the activities.

3.2 Way forward

Having concluded the state-of-play inventory and the current proposed action plan, it is important to then develop a roadmap to communicate the plan at a higher level. The proposed actions will be prioritised together with the stakeholders and then used to develop a strategic roadmap, linking the current state of events with the adaptation measures proposed in the NDC to increase resilience and build adaptive capacity for both the water and health sectors.

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