



Barbados National Multi-Hazard Early Warning Systems Policy 2024



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11.1°N 56.5°W	WNW at 18 mph	960 mb

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TABLE OF CONTENTS

LIST OF ACRONYMS.....	4
MESSAGE FROM THE MINISTER OF HOME AFFAIRS AND INFORMATION.....	6
MESSAGE FROM THE DIRECTOR DEPARTMENT OF EMERGENCY MANAGEMENT ...	8
ACKNOWLEDGEMENTS	9
1.0 BACKGROUND.....	10
2.0 POLICY CONTEXT	11
2.1 RISK CONTEXT	14
2.2 RATIONALE FOR NATIONAL MHEWS POLICY.....	15
3.0 ENABLING FRAMEWORK.....	16
3.1 PURPOSE	18
3.2 GUIDING PRINCIPLES	18
4.0 POLICY STATEMENT.....	20
4.1 VISION	20
4.2 GOAL.....	20
4.3 OUTCOMES	20
4.4 STRATEGIC INTERVENTIONS	20
4.4.1 STRATEGIC INTERVENTION 1: Robust and effective governance arrangements to support a MHEWS.....	23
4.4.2 STRATEGIC INTERVENTION 2: - Defined standards for the detection, monitoring, analysis and forecasting of hazards established and maintained to support MHEWS.....	24
4.4.3 STRATEGIC INTERVENTION 3: Disaster response capabilities are enhanced to deliver the MHEWS through science-informed and evidence-based improvements.....	26
4.4.4 STRATEGIC INTERVENTION 4: An inclusive, accessible, robust network for data collection, management, early warning, dissemination and communication infrastructure, easily accessible by at-risk populations.....	27
4.4.5 STRATEGIC INTERVENTION 5: Science informed, evidenced-based multi-hazard Disaster Risk Knowledge platform that provides the inputs for warning, preparedness planning and disaster mitigation.....	28
4.4.6 STRATEGIC INTERVENTION 6: Enhancement of incentivised national programmes to support MHEWS Resourcing.....	29
5.0 IMPLEMENTATION	30

5.1	Mainstreaming and Partnerships.....	30
5.1.1	Mainstreaming.....	30
5.1.2	PARTNERSHIPS.....	31
5.2	IMPLEMENTATION STRUCTURE	32
5.3	MONITORING EVALUATION AND REPORTING ON ACHIEVEMENTS	33
5.4	POLICY REVIEW	34
6.0	RESOURCING THE POLICY	34
	Annex 1- MHEWS Policy Strategic Framework.....	35
	References.....	36

LIST OF ACRONYMS

BRICS	Building the resilience of the CARIFORUM States to Disaster Risks and Climate Change Impacts
CARIFORUM	Caribbean Forum of the Organisation of African, Caribbean and Pacific States
CARPHA	Caribbean Public Health Agency
CBOs	Community-Based Organisations
CCA	Climate Change Adaptation
CCCCC	Caribbean Community Climate Change Centre
CDEMA	Caribbean Disaster Emergency Management Agency
CDEMA PS	Caribbean Disaster Emergency Management Agency Participating State
CDM	Comprehensive Disaster Management
CDB	Caribbean Development Bank
CERMES	Centre for Resource Management and Environmental Studies
CIMH	Caribbean Institute for Meteorology and Hydrology
CMO	Caribbean Meteorological Organisation
CSO	Civil Society Organisations
CWP	Country Work Programme
CZMU	Coastal Zone Management Unit
DEM	Department of Emergency Management
DEO	District Emergency Organisation
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EDF	European Development Fund
EMAC	Emergency Management Advisory Council
EW	Early Warning
EWS	Early Warning Systems
EWSTWG	Early Warning Systems Training Working Group
GOB	Government of Barbados
ICT	Information, Communications and Technology
ICZM	Integrated Coastal Zone Management
KAP	Knowledge, Attitudes and Practices
MER	Monitoring, Evaluation and Reporting
MHEWS	Multi-Hazard Early Warning Systems
NEMS	National Emergency Management System
NCRIP	National Coastal Climate Risk Information Planning Platform
NGOs	Non-Governmental Organisation
OIEWG	Open-ended Intergovernmental Expert Working Group
PDP	Physical Development Plan
R2R	Roofs to Reefs Programme
SDG	Sustainable Development Goals
SFDRR	Sendai Framework for Disaster Risk Reduction
SRC	Seismic Research Centre

SIDS	Small Islands Developing State
TMAC	The Multi-Hazard Early Warning System Advisory Council
UN	United Nations
UWI	University of the West Indies
WMO	World Meteorological Organisation

MESSAGE FROM THE MINISTER OF HOME AFFAIRS AND INFORMATION



A more resilient Barbados. This is the goal that we strive for nationally. A resilient Nation which places people, their safety and prosperity at the center. Core features of this people centered resilience are equity as well as partnership and collaboration.

The Government of Barbados (GoB) has sought to maintain alignment with the changing hazard landscape frameworks, spanning national, regional, and international frameworks as well as initiate actions as part of its commitment to building a resilient state. A key priority on the disaster risk reduction agenda in Barbados has been the deliberate effort

to improve the national multi hazard early warning system as a critical systemic contributor within the comprehensive disaster management process. The Comprehensive Disaster Management Strategy and Framework is the vehicle by which Barbados and the Caribbean are implementing the Sendai Framework for Disaster Risk Reduction 2015-2030. This ultimately will contribute to attainment of targets under the Sustainable Development Goals Agenda.

Barbados is susceptible to a myriad of hazards including, inter alia, hydro-meteorological, biological and seismic. Yet, despite the changing hazard landscape, there was a recognition that the arrangements for early warning did not reflect a comprehensive appreciation for this dynamism and complexity of our operating environment. The framework for a Multi-Hazard Early Warning System (MHEWS) is designed to provide warning for multiple different hazards and increase the efficiency and consistency of warnings through coordinated and compatible mechanisms and capacities. It also involves a multi-disciplinary approach to providing the science for understanding and monitoring these diverse threats.

Effective Early Warning Systems (EWS) play a prominent role in disaster preparedness and climate change adaptation. Not only do they employ data and technological machinery, but also embody the components as defined by the World Meteorological Organisation (WMO) (WMO et al. 2018): Pillar 1: Disaster Risk Knowledge; Pillar 2: Detection, Monitoring, Analysis, and Forecasting; Pillar 3: Warning Dissemination and Communication; Pillar 4: Preparedness and Response Capabilities.

Our country has a well-documented journey of seeking to enhance its early warning capacity as a national public good which will benefit our entire population with the aim of reducing the vulnerabilities of at-risk populations. Facilitating early warning for early action with the intention of saving lives is at the core of our national actions and intent.

One of the key actions undertaken in this regard is the articulation and approval of the National Multi Hazard Early Warning System Policy. *Nationally, we have managed to collectively achieve the development of the MHEWS Policy through partnership and collaboration.* It gives me the greatest pleasure to thank all stakeholders for being an active part of this process. A process stewarded by the Department of Emergency Management which is a key pillar of the Ministry of Home Affairs and Information.

MESSAGE FROM THE DIRECTOR DEPARTMENT OF EMERGENCY MANAGEMENT



Undoubtedly the Caribbean is a hazard prone region, characterised by small economies of scale which are very sensitive to external shocks. Thus the [physical environmental, social and economic] impact of disasters can give rise to the retardation of development impacting on our lives and livelihoods. As a Caribbean small island developing state, Barbados recognises the importance of the special vulnerabilities of the island within this hazard context. Thus, in the execution of its disaster risk management programme,

Barbados is cognizant that the two main elements giving rise to risks are the hazards themselves, and secondly, the vulnerability of populations and other national assets to these hazards.

Considering the needs for preparedness, monitoring and response to various hazards, Early Warning Systems is an area which we focus on as part of our work programme deliverables. This area has been deliberately espoused in the 2019-2024 National Country Work Programme for Disaster Risk Reduction and further developed in the Barbados Road Map and Action Plan 2021-2024. The requirement of a multi-hazard early warning system to assist us with achieving our mission critical goals and reducing our vulnerability to hazards cannot be underscored enough.

Early warning systems are a major component of disaster risk reduction. Having effective and efficient Early Warning Systems in place contributes to the prevention of loss of life, property and contributes to the reduction in the economic impact of hazards. Increasing the availability of multi-hazard early warning systems and disaster risk information is one of seven global targets set by The Sendai Framework for Disaster Risk Reduction 2015-2030. **Specifically, Sendai Framework Target G:** Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030.

As a collective, the National Emergency Management System identified the development of the Barbados MHEWS Policy as an essential strategic step and critical action in providing the platform for addressing EWS gaps at community, parish, and national levels. The crafting of this public policy seeks to remedy a national challenge which we face, noting that as a Small Island Developing State, investing in multi-hazard and impact-based early warning systems for anticipatory and early action is a key success factor in our quest for resilient development.

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ACKNOWLEDGEMENTS

The Department of Emergency Management (DEM) secured funding through the Eleventh European Development Fund (EDF11) Project with the support of Caribbean Disaster Emergency Management Agency (CDEMA) to undertake the development of a National Multi-Hazard Early Warning Systems (NMHEWS) Policy.

Mr. Jeremy Collymore, Consultant was engaged through CDEMA on behalf of the DEM to prepare the policy documentation. This documentation benefitted from the technical expertise and views of the national emergency management stakeholders. This group, under the leadership of the DEM included stakeholders from public and private sector organisations, civil society, community organisations and academia.

Subsequent to the development of the document, the Minister of Home Affairs and Information who has responsibility for the disaster risk management portfolio nationally, stewarded this piece of pioneering strategic policy guidance through Cabinet for final approval.

The Policy will provide guidance and direction to the NMHEWS programme.

1.0 BACKGROUND

The Caribbean region has recently experienced record occurrences of category four and five hurricanes making landfall in the region, including the 2017 Hurricanes Irma and Maria and Hurricane Dorian in 2019. Ongoing research by the Climate Studies Group Mona (2020) suggests that this trend is likely to continue. This is part of the hazardous environment, that includes earthquakes, pandemics, volcanic eruptions, floods, droughts and coastal erosion, for which Barbados must be prepared.

Barbados is a Small Island Developing State covering a total surface area of 432 square kilometres with a coastline of 97km. It is located at 13°9' N and 59°34' W, making it the most easterly Caribbean Island. Its geology is predominantly comprised of limestone, excluding the central highland region of the Scotland District, which consists of clay and shale. The estimated population at the 2010 census was 277,821, (Government of Barbados, 2010). Barbados' economy is supported mainly by tourism and foreign direct investments.

The recent simultaneous and sequential multi-hazard events the country experienced in 2021, including the ash falls from the eruption of the La Soufrière volcano in nearby Saint Vincent and the Grenadines, Hurricane Elsa, the first hurricane to hit the island in a generation, the unfolding COVID-19 Pandemic and environmental impact of the Sargassum Seaweed, suggest the picture of what the country's early warning systems must be able to accommodate.

The country also has a long history of flooding, especially in major urban centres, (Collymore, J and Griffith, M 1987; Farnum F. C, 1975) and several events in the last five years. Hydrological and agricultural drought, (Farrell, D. 2019), Sargassum seaweed (University of the West Indies Centre for Resource Management and Environmental Studies Sargassum sub-Regional Outlook Bulletins), coastal erosion, storm surge, oil spills (Coastal Zone Management Unit, 2020) and earthquakes are part of the dynamic and changing hazard landscape.

The early warning arrangements in Barbados must adjust to this changing multi-hazard environment. Early warning (EW) is the provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for an effective response. It is the integration of the four pillars for effective EWS:

- I. Disaster Risk Knowledge: Risk assessment that provides essential information to set priorities for mitigation and prevention strategies and designing early warning systems.
- II. Monitoring Analysis and Forecasting: Systems with monitoring and predicting capabilities which provide timely estimates of the potential risk faced by communities, economies and the environment.
- III. Warning, Disseminating and Communications: Communication systems for delivering warning messages to the potentially affected locations to alert local and regional governmental agencies. The messages need to be reliable, relevant and simple to be understood by authorities and the public.

- IV. Disaster Response Capability: Coordination, good governance, and appropriate action plans for effective early warning. This includes public awareness and education which are critical aspects of disaster mitigation, (United Nations International Strategy for Disaster Reduction 2009).

The result is the envisioned ‘Multi-Hazard Early Warning System’ - an integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities, systems, and processes. One that enables individuals, communities, governments, businesses and others to take timely action to reduce disaster risks in advance of hazardous events. The MHEWS is intended to cover a range of hazards and impacts that may occur simultaneously, cascadingly or cumulatively over time and takes into account potential interrelated effects, (United Nations International Strategy for Disaster Reduction-Open-ended Intergovernmental Expert Working Group 2016). Failure of any of the elements implies a failure of the whole system.

2.0 POLICY CONTEXT

Multi-Hazard Early Warning Systems (MHEWS) play a prominent role in disaster preparedness and climate change adaptation. Effective MHEWS include **Disaster Risk Knowledge, Detection, Analysis and Forecasting, Warning and Communication, and Preparedness and Response Capabilities** as promoted by the UNDRR and supported by the World Meteorological Organisation (WMO) with a supporting Checklist to facilitate assessment of MHEWS status and progress at national level. This internationally agreed tool was adapted by CDEMA and partners to the Caribbean context in 2018¹ and further enhanced by CDEMA in 2021². In 2021, Barbados reviewed its national arrangements for early warning by applying the enhanced Multi-Hazard Early Warning Systems (MHEWS) Checklist. The four components (pillars) for effective early warning when evaluated for Barbados informed the preparation of the Barbados MHEWS Gap Analysis Report, 2021 and the Barbados MHEWS Roadmap and Action Plan, 2021 and the Barbados MHEWS Policy, 2022.

¹ Adaptations made in 2018 included the integration of gender, the inclusion of major social groups and other stakeholders among the key actors; the inclusion of general information on the population to be served by the MHEWS and the incorporation of levels against which to objectively identify attainment/progress for each action.

² Enhancements made in 2021 address feedback provided by stakeholders in 2018. Specifically, compound questions have been disaggregated, an indicator framework has been developed to support evaluation, and the rating scale refined from a four- point to a three-point scale that measures progress on legislative, institutional, and administrative arrangements across all EWS pillars.

The Checklist Rating Scale applied three (3) points of attainment relative to actions taken across the 13 measures and 131 items were assessed. The three-point scale defined the assessment criteria as Level 1- **Not Initiated**, Level 2-**Partially Met**, and Level 3-**Fully Met**. These were summed for each Pillar to give the indicated level of attainment. The overall rating for MHEWS in Barbados was rated at "Level 2" with a score attainment of 2.4. The area of **Disaster Risk Knowledge** was the weakest Pillar, attaining a Level 1 rating and a score of 1.91 and that on **Warning Dissemination and Communication** was the strongest of the areas assessed, at Level 2 with a 2.31 score. The three weakest measures in the local MHEWS were within Pillar 1 and the three strongest measures in Pillar 3. This suggests that the EWS in Barbados is at a stage where action on most of the items has been initiated and is at varying implementation points.

The Barbados MHEWS Gap Analysis Report, 2021 identified the status of early warning systems (EWS) and the gaps to be addressed with indications for priority actions. These gaps aligned with those generated in the development process of the Barbados Comprehensive Disaster Management (CDM) Country Audit and the Department of Emergency Management (DEM) CDM Strategy 2019-2023 and the related Country Work Programme (CWP). It also reinforced the common themes for focused action that include effectiveness, efficiency, redundancy, continuity, capacity building, and deeper stakeholder engagement and governance in the early warning systems.

The Barbados MHEWS Gap Analysis Report, 2021, which was informed by the Checklist assessment of the four pillars of a people-centred MHEWS, was used to develop the Barbados MHEWS Roadmap and Action Plan, 2021. Five (5) priority areas to guide national actions and investments towards improving EWS in moving towards the realisation of a more integrated MHEWS were identified. These include:

1. *Enhanced EWS Policy* – Develop the Barbados MHEWS Policy to provide the platform for addressing EWS gaps at community, parish and national levels.
2. *Improved Management Systems for Data Capture and Use* – Provides comprehensive information on all the dimensions of disaster risk, including hazards, exposure, vulnerability and capacity related to persons, communities, and organisations and their assets to provide the platform decision making at all levels.
3. *Public Education and Communication* - Building awareness to address gaps in the understanding of 'at-risk' populations and ensuring that there is capacity and readiness to prepare for, prevent and respond to the threat. The intent is to effect behavioural change and ownership. To this end, the assessment of the knowledge, attitude and application of the new initiatives, tools, and other EWS products are encouraged. Building on the acquired trust in warning and communications is essential to generate products and messages that improve timeliness and accuracy while recognising the differentiated nature of stakeholders being serviced. The design should be gender-responsive and inclusive facilitating accessibility to varying demographics, including the elderly and persons with disabilities. Using the extensive proliferation of mobile phones and social media platforms, public information and education campaigns, and the traditional media can increase the reach of awareness products.

4. *Capacity Development and Enhancement*- Training and education are essential to addressing gaps in understanding of 'at-risk' populations and building the capacity and readiness to prepare for, prevent and respond to threats. Capacity development is an essential ingredient for the interface between the generation of scientific information, risk communication and the potential to take action. The training programs developed should seek to build greater awareness of EWS and secure buy-in from professionals, communities and volunteers alike.
5. *MHEWS Resourcing* – The issue of resourcing is integral to the scale and pace of action and change in the enhancement of the Barbados MHEWS. The availability and sustainability of its resourcing are critical and should be encouraged through incentivised public-private partnerships, bi-lateral agreements and mutual aid agreements.

The triangulation of the Barbados CDM Country Work Programme 2019-2023 as well as events and exercise after-action reports reinforced the messages and directions from the assessment processes on the need for effectiveness, efficiency, redundancy, continuity, capacity building, deeper stakeholder engagement and governance in early warning systems initiatives. The DEM 2019 Annual Report documented the significant challenges encountered during the work implementation process and called for more investment to ensure that all communications systems are in place and the supporting infrastructure maintained to facilitate a prompt and coordinated response to any emergency or disaster occurring at any time. This and the strengthening of technical human resources were viewed as vital to the proper service delivery for the national EWS. This Policy advocates for implementing practical measures to improve Barbados' MHEWS and strengthening of related programmes.

Multi-level governance and coordination arrangements are treated explicitly in the proposed implementation structure. Attention is also directed at promoting the integration of the programmes of key actors to achieve more efficient use of resources and avoid duplication.

The Barbados CDM Country Audit highlighted the absence of consolidated approaches to EWS among national stakeholders. As part of its agenda to promote sustainable, integrated and collaborative approaches to resiliency, the Caribbean Disaster Emergency Management Agency (CDEMA) provided guidance to facilitate this process through the Model National Multi-Hazard Early Warning Systems Policy and Adaptation Guide, 2020. The structure and content of the Barbados MHEWS Policy are informed by the CDEMA MHEWS model and contextualised based on gaps identified and the associated recommendations for addressing them which emanated from the Barbados MHEWS Gap Assessment Report, 2021 and the Barbados MHEWS Roadmap and Action Plan, 2021.

The Policy articulates the agenda and process for addressing gaps and challenges related to capacity deficits in data capture, standardisation and access and the variability in the awareness, access to and use of risk knowledge. It embraces the broader national goal of people-centred approaches to policy development.

2.1 RISK CONTEXT

There is evidence of many favourable developments in Disaster Risk Reduction in Barbados (The Barbados Country Document, 2014; CDM Country Audit 2019; CDM Work Programme 2019-2023). Over the five years (2014-2019), there has been progressive improvement in the National Emergency Management System's (NEMS) coordination accompanied by an emerging body of competent technical agencies. There are also evolving social policies and protection programmes that can support an inclusive MHEWS agenda.

The five broad issues that have emerged from the MHEWS Gap Analysis Report, 2021 are considered within the Barbados MHEWS Policy's articulation. They help to shape an overarching framework for guiding the continued development and coordination of early warning interventions and investments, improved management systems for data capture and use, public education and communication, capacity development and financing for the mechanism.

A triangulation of a suite of studies, consultations and exercise after-action reports reaffirms the MHEWS Gap Analysis Report, 2021 findings on the five broad outcome areas as key issues for enhancement elaborated in the Barbados MHEWS Roadmap and Action Plan, 2021. These include the Barbados Coastal Zone Integrated Management Plan 2020-2030, Caribe Wave 2020 Report and After-Action Report, DEM 2019 Annual Report, Barbados 2021 Update of the First Nationally Determined Contribution; Barbados CDM Audit 2019; Barbados CDM Strategy and Programme 2019. However, most of the initiatives are focused on single hazards and sectors. The changing hazard landscape, evidenced by the diversity, intensity and concentration in time and space and the national agenda for resilient development, require an EWS that is multi-hazard in focus and integrated into policy and practice.

This Policy advocates for residents to be provided with clear information about forecast events and the potential impacts these events can have on them and their communities. Therefore, scientific forecasts must be translated into relevant, usable information that resonates with and empowers users to take action. It is essential to note that predictions are not helpful unless translated into a warning and action plan that is understandable by the public and in a timely manner, (Glantz, 2003).

The Government of Barbados acknowledges the call for a paradigm shift in its attitude towards development that is science-informed and evidence-based (Roofs to Reefs Programme (R2R); National Determined Contributions 2021; Barbados Integrated Coastal Zone Management Plan 2020). This applies equally and critically to risk assessment, detection, and dissemination for informed action, where warning times can vary by hazard, time and scale.

The Government of Barbados views MHEWS integration as central to its long-term vision for resilient and sustainable development. Therefore, this Policy elaborates the guiding principles, vision, goals, objectives, and strategic interventions required to support the drive for a pathway to resilient and integrated MHEWS in Barbados.

This Policy addresses weaknesses in **disaster risk knowledge** in Barbados and targets this as a critical area for action, given its crucial role in national EWS arrangements. It will build on the ongoing work of the Barbados Meteorological Service and the Coastal Zone Management Unit (CZMU) to bridge the gap between the understanding of hazards through science and the application of this knowledge and its use in decision making at political, institutional, business, community and individual levels.

2.2 RATIONALE FOR NATIONAL MHEWS POLICY

The Policy recognises the need for interfacing with other national and sectoral policy frameworks. It takes note of the efforts of the Barbados MHEWS Roadmap and Action Plan 2021 to provide a MHEWS bridge with national development guidance policy and the broader governance framework for resilience and the DEM Strategic Plan 2019-2023, the Barbados CDM Country Work Programme 2019-2023.

Also, of relevance are the Emergency Management Act, Cap 160A which provides the overarching legal frameworks in the area of disaster management; the Planning and Development (Amended) Act 2020, and the 2021 Physical Development Plan (PDP). Additionally, the Integrated Coastal Zone Management (ICZM) Policy Framework (2020-2030) and the Coastal Zone Management Plan (2020-2030) which seek to map, model and monetise hazard risk at varying spatial and time scales. The CZMU recognises and has identified the work of the DEM as a key ingredient in its programmes. These collaboration spaces will be explored in the implementation of the Barbados MHEWS Policy.

Barbados adopted the Regional CDM Strategy and Framework 2014-2024 as a guide, which has the overall goal of safer, more resilient, and sustainable CDEMA Participating States through Comprehensive Disaster Management. The DEM Strategic Plan 2019-2023 and Barbados CDM Country Work Programme 2019- 2023 are aligned to this and with the Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030. The Barbados CDM Country Work Programme 2019-2023, Priority Area 3, seeks to strengthen community resilience, including strengthened Early Warning Systems. The Government of Barbados further aligns its climate-resilient development commitments directly with ‘target G’ of the Sendai Framework for DRR, which aims to substantially increase availability and access to disaster early warning systems (EWS) and disaster risk assessment and information for communities by 2030 and the Paris Agreement, (Updated National Determined Contributions July 2021).

3.0 ENABLING FRAMEWORK

The enabling framework describes the standards, policies, legislation, programmes and plans that exist within Barbados to support the implementation of the MHEWS Policy. The Barbados MHEWS Policy is informed by a governance architecture that is underpinned by a commitment to resilient and inclusive development and recognises the need for multi-hazard lenses in development. Legal frameworks and clear responsibilities for the multiplicity of actors involved in EWS are essential underpinnings of the governance architecture. This is further reinforced by the coordination of the relevant agencies and sectors for EWS under the high-level authority of the Emergency Management Advisory Council (EMAC). The enabling environment for the MHEWS Policy's implementation is built upon:

1. *Governance and Collaboration Mechanisms* – This includes legislation, policy, sector plans and the roles and responsibilities of EWS stakeholders. It pulls on the multi-level arrangements and collaborative opportunities for engagement provided by the national resilience agenda, the R2R, Integrated CZMU Policy, and PDP and promotes rationalisation of EWS across sectors, agencies and local levels. Strengthening collaboration and synergy across regional and global initiatives will also be prioritised as multi-level and multi-disciplinary platforms are essential to sustaining the early warning dialogue amongst the various actors. As a Caribbean Small Island Developing State (SIDS), geographic smallness, isolation, economies of scale and a limited skills base means that an essential component of the national EWS is supported by international organisations, these include the WMO, the World Bank, United Nations Office for Disaster Risk Reduction (UNDRR), and the International Federation of the Red Cross and Red Crescent Societies (IFRC). Regional institutions such as CDEMA, the Caribbean Institute for Meteorology and Hydrology (CIMH), Caribbean Meteorological Organisation (CMO), the Caribbean Public Health Agency (CARPHA), the University of the West Indies (UWI) Seismic Research Centre (SRC), the Caribbean Development Bank (CDB), and the Caribbean Community Climate Change Centre (CCCCC) also interface with EWS in Barbados.
2. *Effective Planning and Capacity* - Each strategic intervention of the Policy is achieved through effective planning and capacity building. Capacity enhancement is needed to support all components of the EWS at all levels. Training and building awareness are essential to addressing gaps in understanding of 'at risk' populations and to ensure that there is capacity and readiness to prepare for, prevent and respond to the threats faced. It is an important ingredient for the interface between the generation of scientific information, risk communication and the potential to take action. The training programs to be developed will also seek to build greater awareness of EWS and secure the buy-in from the business community, professionals, residents and volunteers alike.

3. *Effective Budgeting and Financing* - Funding mechanisms for the EWS are resourced and institutionalised by the Barbados Government. Core funding is to be supplemented by innovative revenue-generating activities, public-private partnerships and the funding support of potential donors, philanthropic societies and grants at the international and regional levels. The issue of cost recovery will be explored within the framework of early warning services.

There is no defined legislation to guide the collective vision for EWS development in a dynamic and rapidly changing hazard scape though elements of these can be found in varying pieces of legislation, frameworks, and assessments including:

- Barbados CDM Audit, 2019
- Barbados CDM Country Work Programme (CWP) 2019 – 2023
- Barbados MHEWS Roadmap and Action Plan, 2021
- Barbados Roofs to Reef Project, 2019
- Coastal Zone Management Act, Cap 394
- Emergency Management Act, Cap 160A
- Emergency Powers Act, Cap. 161
- Health Services Act, Cap 44
- Integrated Coastal Zone Management Plan, 2020
- MHEWS GAP Analysis Report for Barbados, 2021
- National Building Code, 1993
- Physical Development Plan and EIA Guidelines, 2017
- Planning and Development (Amended) Act, 2020
- Prevention of Floods Act, Cap. 235
- Regional CDM Strategy and Framework, 2014-2024
- Shipping (Oil Pollution) Act, Cap 296A
- Soil Conservation (Scotland District) Act, Cap 396
- Town and Country Planning Act, Cap 240
- Water Zoning Regulations, 2020

The MHEWS Policy implementation draws on the above to promote the harmonisation of standards, policies, legislation, programmes and plans within the lens of the National Emergency Management System (NEMS). The NEMS is a broad-based multi-sector stakeholder instrument coordinated by the Department of Emergency Management and addresses governance and collaboration, planning and capacity building, and resourcing for EWS in Barbados (Barbados Country Document). It is comprised of the Emergency Management Advisory Council (EMAC) and its sixteen (16) Standing Committees, national emergency services, local volunteers, non-governmental (NGOs) and community-based organisations (CBOs), regional and international partners and the private sector.

3.1 PURPOSE

The purpose of the MHEWS Policy is to guide the principles and processes that inform the design, implementation, management, and monitoring and evaluation of EWS in Barbados. It provides the framework for defining roles and responsibilities for effective coordination and efficiency in early warning services at the national and community levels. It considers and addresses existing barriers, challenges, and the diversity of hazards and stakeholders, including marginalised and vulnerable groups.

3.2 GUIDING PRINCIPLES

The Barbados MHEWS Policy is informed by the following eight (8) Guiding Principles:

1. *People-focused* - Programmes, tools and communication that facilitate the dissemination, receipt, understanding and action in all elements of the EWS continuum, with emphasis on cultural relevance and community engagement. The EWS embraces multiple cultures and knowledge systems and addresses gender and social inequalities to ensure that all groups are accounted for, included, engaged and can be warned through the early warning network.
2. *Multi-Hazard Focused and Multifunctional* – An integrated multi-hazard network that facilitates standards and protocols for data capture, analysis, access and use for prioritised hazards to inform policy and action at all levels. It recognises that EWS actors do not have to be engaged in all components for all hazards but that they contribute to an overarching network of systems. The end result is a network for EWS that accommodates the interrelated interconnections of the hazards, impacts, and the vulnerable, which are important to operability. The Barbados MHEWS Policy promotes synergy and the minimisation of duplication, which is necessary for greater efficiency and effectiveness of our limited human, financial and other resources.
3. *Inclusive* – The Barbados MHEWS Policy promotes inclusiveness and is implemented by a range of government agencies and non-governmental stakeholders. It provides opportunities for the participation of all groups in society, including the most vulnerable in society such as, children and youth, immigrants, the elderly, disabled, and remote communities. Engagement with all levels of government, private sector, development partners, civil society organisations, donors, academic, regional and international bodies are embraced in the Policy's implementation. The Barbados MHEWS Policy values and draws on multiple knowledge sources, including traditional knowledge and varying stakeholder perceptions and concerns. Therefore, the related programmes and decisions incorporate gender-responsive indicators in all elements of the early warning systems driven by gender-sensitive vulnerability, risk and capacity assessments, and equal access to productive resources, services, and information.

4. *Collaborative and Integrated* – The Barbados MHEWS Policy creates synergies among and across government, regional, global and national civil society organisations (CSOs), industry sectors, development partners, donors, and academic institutions to build networks and shared knowledge and information will be prioritised. EWS is not a stand-alone. To this end, the Barbados MHEWS Policy sets the precedence for aligning EWS to appropriate development policies and programmes, including The Barbados Physical Development Plan 2017; R2R Programme and Integrated Coastal Zone Management Policy and Plan 2020-2030; Barbados National Determined Contributions 2021. Given the regional and global nature threats to our development, due consideration is given to our commitments to the Sendai Framework, 2015 and the Paris Agreement, 2016.
5. *Technology, Innovation and Forward-looking* – The Barbados MHEWS Policy operationalisation and sustainability are driven by research and innovation. It therefore supports and enables dynamic systems and decision making that are science-informed and evidence-based to allow for adaptation to changing situations essential for resilience planning. The Barbados MHEWS Policy endorses the need for innovative technologies, that are accessible including geospatial data, as a priority in bridging the technology and digital divide
6. *Relevant and Contextual* – The Barbados MHEWS Policy promotes practicality informed by our hazard diversity, resources, exposure, demographic and social contexts. Strengthening existing capacity at national, parish, district, and community levels is central to our realising an effective MHEWS. The Policy, therefore, draws on our rich heritage and traditional knowledge as well as lessons identified from national, regional and international experiences. The generation and use of risk information are important for addressing routine and extreme events. Impact based forecasting and foresighting are the added dimensions to the MHEWS for a more resilient development agenda.
7. *Accountability* – The Barbados MHEWS Policy embraces the elaboration, monitoring, evaluation and reporting (MER) processes necessary for establishing standards of performance for systems and structures of the EWS, and for identifying roles and responsibilities required to promote the efficient use of resources. This, coupled with transparency in EWS decision-making, is essential to the Policy's implementation and overall efficiency of the MHEWS.
8. *Sustainability* – The Barbados MHEWS Policy supports strengthening and building on existing systems, utilising and enhancing local capacity, lesson identification and learning, and stakeholder engagement to support the implementation of the MHEWS in the longer term. The Barbados MHEWS Policy seeks to foster sustainability by promoting innovation and resourcefulness.

4.0 POLICY STATEMENT

The Policy statement comprises a vision statement, goal, outcomes and strategic interventions aligned to the Results Framework of the Barbados MHEWS Roadmap and Action Plan, 2021 (p.22). The Barbados MHEWS Policy is designed to guide decisions and actions, protect and safeguard lives, promote sustainable development and provide an enabling environment for implementation underpinned by the guiding principles above.

4.1 VISION

The vision of the Barbados MHEWS Policy is to realise a national, multi-hazard early warning system that is evidence-based, end-user centred, inclusive and promotes efficiency, collaboration and saving lives in a safer, more resilient and sustainable Barbados.

4.2 GOAL

The Barbados MHEWS Policy is to build a national integrated MHEWS network that is science-informed, evidence-based, and supports the decision-making of all stakeholders.

4.3 OUTCOMES

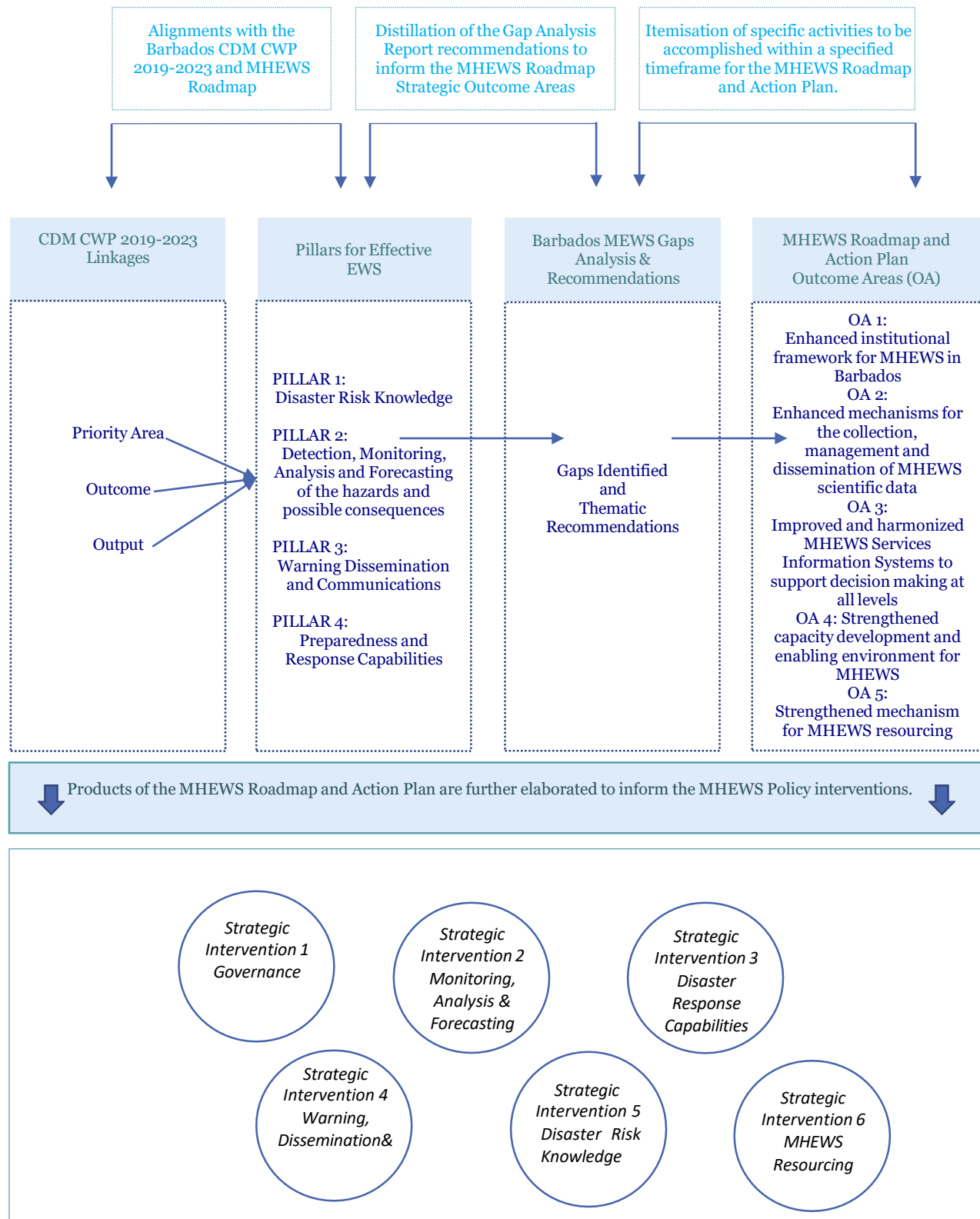
- a. Robust and strengthened governance arrangements for MHEWS in Barbados.
- b. Enhanced and harmonised systems for capturing and managing MHEWS related data.
- c. Information for public education and awareness that informs actions.
- d. Capacity built and the risk knowledge for evidence-based decision making in MHEWS is accessible and effective.
- e. The mechanism for MHEWS resourcing is strengthened and sustained.

4.4 STRATEGIC INTERVENTIONS

Early warning systems help reduce economic losses and mitigate the number of injuries or deaths from hazards impacts by providing information that allows individuals and communities to protect their lives and property. Early warning information empowers people to take action for disaster preparedness. The Barbados MHEWS Policy supports the integration of local risk assessment studies and community action plans within the early warning mechanisms' operations. Early warnings must be flexible and diverse to reflect the diversity of the hazards and the target populations.

Important to the Barbados MHEWS Policy development is its alignment with the Barbados CDM CWP 2019-2023, the four pillars for effective EWS, the Barbados MHEWS Gap Analysis Report, 2021 articulated within the MHEWS Roadmap and Action Plan 2021-2024, Figure 1.

Figure 1: Construction of the Barbados MHEWS Policy and its strategic interventions as a product of the Barbados MHEWS Roadmap and Action Plan 2021-2024



Central to the MHEWS Policy is the belief that effective partnerships can achieve the transformations in governance, systems and norms to deliver a mechanism that can support resilient people and sustainable development in a changing hazard landscape. The four pillars for effective EWS underpin the Barbados MHEWS Policy: Disaster Risk Knowledge; Monitoring, Analysis and Forecasting; Warning, Dissemination and Communication; and Disaster Response Capability. It is steered by the agreed-upon guiding principles, including i) people-focused, ii) multi-hazard and multifunctional, iii) inclusive, iv) collaborative and integrated, v) technology, innovation and forward-looking, vi) relevant and contextual, vii) accountable, and viii) sustainable. The Barbados MHEWS Policy is further supported by an EWS enabling environment that includes Governance and Collaboration Mechanisms, Effective Planning and Capacity, and Effective Budgeting and Financing.

The Barbados MHEWS Policy's strategic interventions are articulated to align with the three (3) broad priority areas of the Barbados CDM Country Work Programme, 2019-2023: **Priority Area 1:** Institutional Strengthening for CDM; **Priority Area 2:** Preparedness Response and Mitigation Capacity and **Priority Area 3:** Strengthening Community Resilience.

The Barbados MHEWS Policy's strategic interventions are essential for framing the implementation of this Policy. The emergent strategy from this belief includes six (6) interventions deemed necessary for Policy implementation and contextualising in accordance with the WMO EWS Pillars. They are:

1. Governance - Robust and effective governance arrangements to support a MHEWS.
2. Monitoring, Analysis and Forecasting - Defined standards for the detection, monitoring, analysis and forecasting of hazards established and maintained to support MHEWS.
3. Disaster Response Capabilities - Disaster response capabilities are enhanced to deliver the MHEWS through science-informed and evidence-based improvements.
4. Warning, Dissemination and Communication - An inclusive, robust network for data collection management, early warning, dissemination and communication infrastructure easily accessible by at-risk populations.
5. Disaster Risk Knowledge - Science informed, evidenced-based multi-hazard Disaster Risk Knowledge platform that provides the inputs for warning, preparedness planning and disaster mitigation.
6. MHEWS Resourcing - Enhancement of incentivised national programmes linked to supporting MHEWS Resourcing.

The strategic interventions are the intended results to be achieved through the implementation of the MHEWS Policy. These are to be delivered by lead and support agencies, resources and timelines articulated according to the Policy implementation.

4.4.1 STRATEGIC INTERVENTION 1: Robust and effective governance arrangements to support a MHEWS.

Developing and implementing an effective EWS requires the contribution and coordination of a diverse range of individuals and groups. These include representatives of marginalised groups such as elderly men, female-headed households, children, chronically ill and the disabled among others; other members of the wider community, local government, national government (including gender bureaus), regional institutions and organizations, international bodies, NGOs, the private sector, science and academia (UNISDR PPEW, 2006; Kambon, 2018). Local experiences have identified difficulties with inadequate interagency communication and with fostering cross sector coordination across the varying levels of community groups. There also exists the perennial issue of operational cooperation to be fostered between the local meteorological and hydrological services and DRM stakeholders, such as DEM and other ministries and technical agencies. Lessons learnt from recent hurricane seasons, point to the need for strengthened operational procedures between all MHEWS stakeholder partners including the local met office and other technical hazard monitoring agencies. This highlights the issue of local level governance arrangements not being integrated within administrative and resource capabilities. It is the weaknesses with MHEWS governance arrangements that create issues around ownership and further generate weaknesses in coordination and interoperability of EWS. In the absence of a framework for cooperation, there are overarching concerns about the effectiveness of the EWS.

This Strategic Intervention addresses the governance arrangements and supports the need to deliver a MHEWS in Barbados. The Government of Barbados acknowledges that there are weaknesses in the current governance arrangement of the DEM and the roles and responsibilities of stakeholders involved in all dimensions of MHEWS. This Intervention draws on the Barbados Emergency Management Act, 2006, CDM Policy and Strategy, 2020 and Work Programme, 2019-2023 and seeks to enhance the coordination efforts to better address the risk management process for evidence-based decision making. It suggests the potential need to review existing legislation listed at item 3.0 of this Policy as well as similar policies, institutions, and supportive partnership arrangements to deliver MHEWS. The MHEWS Policy promotes the harmonisation of standards, policies, legislation, programmes and plans through the lens of the National Emergency Management System (NEMS). As part of the exercise, legislative review and harmonisation, along with Monitoring and Evaluation will receive special attention.

Strengthening the capacity of the NEMS with the required human, physical, technical and financial resources to support the MHEWS Policy and programme to deliver an effective and integrated MHEWS will be a priority. This is seen as a key investment for alignment with the National R2R Programme.

Specific Actions:

1. MHEWS related issues and solutions are included in an enhanced CDM Legislative and Policy Framework and Programme.
2. Establishment of a MHEWS MER frameworks aligned to the National CDM Work Programme.
3. Development of a resource mobilisation plan to ensure predictable and adequate financing for MHEWS.
4. Strengthen the governance arrangements for a centralized and inclusive MHEWS through either a dedicated MHEWS legislation or enhancements made to existing supportive legislation. [To clarify agency responsibilities, guide and support EWS installation, operations, maintenance, and outline standards and protocols for alerting the public and with an aim to improve the capacity of DEOs and other leaders, community groups and organisations for risk informed decision making.]
5. Advocate for and incorporate an all-people approach that includes structures for the participation of non-governmental EWS stakeholders.
6. Review, update or establish SOPs for inter-agency and cross sector cooperation, coordination and communication to support EWS for multiple hazards.

4.4.2 STRATEGIC INTERVENTION 2: - Defined standards for the detection, monitoring, analysis and forecasting of hazards established and maintained to support MHEWS.

The Barbados MHEWS Gap Analysis Report, 2021 suggests that while a scientific and technological platform for warning does exist, it is not sufficiently exploited to inform other elements of decision-making. Work has generally been initiated in meeting the standards for the detection, monitoring, analysis and forecasting of hazards and the possible consequences. The strength of this intervention is in the warning facilities, message dissemination and the strong and growing investment in the operations of 24- hour warning systems.

Gender sensitivity and inclusiveness are to be reflected in warning messages, including impact-based forecasts. Also, signals of investments in modelling systems and processes that allow for adaptability to changing technology are present.

What is noticeable is the absence of established agreements and interagency protocols to ensure consistency of warning language and communication responsibilities. This can be a major challenge, especially where different agencies handle different hazards. Another gap relates to data and metadata capture and curation. This can be addressed via a national geospatial data infrastructure framework or system. Such a system can address data standardisation, update cycles, protocols and responsibilities around access and sharing.

Establishing agreements and interagency protocols to ensure consistency of warning language and communication responsibilities is needed. More investment is also necessary to ensure that the monitoring system can combine and benefit from new and older technology to allow for the exchange of data within and among communities and other stakeholders with different technical capabilities. Improvements in the timeliness, accuracy and access to the outputs of the monitoring mechanism are to be addressed.

Specific Actions:

1. Undertake an audit of capability across EWS, streamline and bolster each component of the MHEWS for all prioritised hazards.
2. Establish agreements that promote interoperability of warning systems.
3. Develop, enhance and maintain Information, Communications and Technologies (ICT) platforms that provide residents with clear information about forecast events, the potential impact these events will have to facilitate synergy building across the community, national, regional, and global levels and across sectors.
4. Integrate MHEWS into Disaster Risk Reduction (DRR), Climate Change Adaptation (CCA) and development programmes.
5. Advocate for using diverse mechanisms to reach communities and other players with all hazards warning and preparedness information, including traditional methods and modern technology such as social media.
6. Build on all hazards warning services to improve equitable access by community members to timely and accurate warnings.

7. Create/enhance a national geospatial infrastructure framework to support MHEWS detection, monitoring, analysis and forecasting of multiple hazards.

4.4.3 STRATEGIC INTERVENTION 3: Disaster response capabilities are enhanced to deliver the MHEWS through science-informed and evidence-based improvements.

Warning, dissemination and communication are strong items of preparedness and response capabilities in Barbados. However, more effort is to be directed at improving contingency planning which is science-informed and evidence-based preparedness systems that consider time, geographical scales and cascading events.

Other areas for improvement include deepening community capacity and engagement and involvement in collecting information on hazard impacts and reports on operations. Capacity Development Training is needed to ensure that there is capacity and readiness to prepare for, prevent and respond to any threat. Such training programmes should also seek to secure buy-in from professionals and volunteers.

Specific Actions:

1. Undertake a capability assessment review and an analysis of the skills and competency sets needed for a MHEWS programme delivery and assess gaps.
2. Elaborate a MHEWS capacity development strategy for meeting programme requirements.
3. Enhance the requisite capacity of DEM to coordinate the MHEWS Programme.
4. Strengthen the capacities of all vulnerable groups to access and understand risk information and effectively prepare for, prevent and respond to the threat.
5. Collaborate with civil society and faith-based organisations to deliver agreed community level EWS programmes that are culturally relevant and inclusive.

6. Establish a community centred programme for understanding and using data visualisation products in disaster plan writing and relief operations planning.
7. Develop community-level initiatives in resource mobilisation.
8. Enhance and build disaster risk management capacity by developing school and volunteer EWS programmes.

4.4.4 STRATEGIC INTERVENTION 4: An inclusive, accessible, robust network for data collection, management, early warning, dissemination and communication infrastructure, easily accessible by at-risk populations.

Warning and communication had the highest average assessed rating across all measures reviewed in the Barbados MHEWS study. The core observable gap suggests that a robust platform of early warnings infrastructure, through its resilience, including redundancy, may be lagging behind other elements of notification and communication. There is also an indication that inclusiveness and differentiation of the services to reflect the targeted groups are being addressed.

More effort to better explore new technologies, data analytics, scaling and effectiveness of early warning systems is needed. So too is addressing the interface with key systems and services which move people and goods to mitigate the potential loss of life.

Specific Actions:

1. Undertake periodic Knowledge, Attitudes and Practices (KAP) survey of the public's awareness of the tools, products and services of the EWS in Barbados.
2. Develop a MHEWS Communications Strategy and Plan.
3. Work with DEOs and other community groups and organisations to design and deliver local awareness and communication products.
4. Expand and reinforce the social learning activities that build stakeholder engagement, awareness and support for local EWS.
5. Create public relations events around the DEM's Annual Report; the DEM Partnership Programme; the DEO of the Year, and the NEMS entity of the Year.

6. Continued development and implementation of special communications and awareness programmes that respond to the needs of seasonal populations and threats.
7. Develop guidelines to counter fake news/false information in the EWS.

4.4.5 STRATEGIC INTERVENTION 5: Science informed, evidenced-based multi-hazard Disaster Risk Knowledge platform that provides the inputs for warning, preparedness planning and disaster mitigation.

The basic elements for the generation of risk knowledge and its application to the minimisation of loss of life, injury and damage to property exist in the Barbados MHEWS. The Barbados MHEWS Gap Analysis Report recognises that more risk mapping is required, and so too is its use in the elements of the Early Warning Systems. This is further reflected in the limited visualisation of hazard, vulnerability and risk information and its support for community disaster planning, shelter management, relief and operations planning. It is therefore expected that the application of initiatives explored in this Policy will help to improve MHEWS data management systems resulting in more effective impact-based forecasting and evidence-based decision-making. Particular attention must be paid to the broader and more effective use of the developments in information communication technology in enhancing the means and products for information sharing, education and community engagement on the hazards faced. Also in need of urgent attention is the issue of data, including standards for capture, storage, access and application in evidence-based decision making.

Specific Actions:

1. Undertake a systematic analysis and prioritisation of threats for the focus of the MHEWS.
2. Expand, integrate and maintain the hazard monitoring systems to meet current and changing needs.
3. Establish a centralised information management platform (system of systems) for sharing disaster and risk information with clear protocols for ease of use and data sharing.
4. Promote and set-up of platforms to support multiple knowledge systems to generate risk knowledge.

5. Conduct hazard impacts, exposure and vulnerability analyses which are socio- demographic and socio-spatial and inform social protection mechanisms.
6. Conduct hazard impact, exposure and vulnerability analysis to document historical data that can be used in predictive models to generate real time sectoral data using, geo-spatial and temporal scales.
7. Advance and sustain work on the development of geo-spatial risk profiles for priority hazards and the monetization of potential losses.
8. Develop risk assessment outputs that are scenario-based, anticipate the impact and resource demands, and support proactive response planning.
9. Establish and maintain mechanisms that promote the centralisation, and appropriate access to and the sharing of risk information and ideas.
10. Establish a centralise data repository that allows for early warning information, research and forecast to be easily exchanged across the MHEWS community.
11. Identify quality control protocols for data usage and sharing.

4.4.6 STRATEGIC INTERVENTION 6: Enhancement of incentivised national programmes to support MHEWS Resourcing.

The issue of resourcing is central to any proposed enhancement of the MHEWS in Barbados (USAID Resilience Assessment 2021; Collymore 2021; Prudence 2020). The scale and pace of action and change in the enhancement of the Barbados MHEWS will be informed by the availability and sustainability of its resourcing. The MHEWS Gap Analysis Report and the subsequent Roadmap highlight the need to ensure that a dedicated Resource Mobilisation Plan is in place. A Resource Mobilisation Plan will help in identifying the human, equipment, tools and machinery, time and financial resources necessary for policy implementation. The resourcing of the MHEWS Roadmap and Action Plan should be borne as a whole-of-country partnership among the public, civil society and private sectors.

Specific Actions:

1. Integrate resource mobilization within the oversight function of The MHEWS Advisory Committee (TMAC).
2. Use TMAC to facilitate the building and sustaining of professional capacity to manage financial resources and improve resource mobilisation.
3. Facilitate arrangements within Barbados and with the international community to generate and facilitate timely access to disaster preparedness, response and recovery funds.
4. Develop an incentivise programme for businesses to support the identification and implementation of MHEWS solutions to support evidence-based decision making.
5. Establish processes for inter-sectoral and multi-actor coordinated financing for programming and capacity development.
6. Establish a lobby facility with TMAC for the allocation of funding MHEWS in disaster risk management and adaptation budgets at national and sector levels.
7. Advance the application of risk knowledge, vulnerability and risk assessments and emerging technologies to develop forecast-based financing mechanisms for early warning and early action.

5.0 IMPLEMENTATION

5.1 Mainstreaming and Partnerships

5.1.1 Mainstreaming

Mainstreaming MHEWS into the cross-cutting issues, policy, plans and processes across levels of government, sectors, and stakeholders provide a platform for building synergies and efficiency and avoiding duplication. There are several national, regional and international contexts and strategies in which the issues of MHEWS are included or relevant. The Barbados MHEWS Policy, therefore:

1. Promotes and operationalises a culture of risk management, resilience and safety.
2. Adopts an approach to the design of evidence-based MHEWS solutions based on the comprehensive analysis of risk and access to information.

3. Outlines options through which MHEWS considerations are integrated across disaster risk management, sustainable development and resilience dialogues, advocacy and education.
4. Encourages the integration of MHEWS resourcing into partner Planning and Budget processes informed by forecast based financing considerations.
5. Facilitates the integration of MHEWS into the public and private sectors, community risk and vulnerability assessments, standard operating procedures and, the associated changes in behaviour and action.

5.1.2 **PARTNERSHIPS**

There are a number of actors involved in EWS within Barbados. Partnership Mapping and Strategic Engagement are central to the inclusiveness, coordination and effectiveness of the Barbados MHEWS Policy's implementation. The government of Barbados recognises that the support from other government entities, development partners, civil society organisations, district and community organisations and higher education institutions will be needed to assist in the operationalisation of the MHEWS Policy under the high-level authority of the EMAC. The Barbados MHEWS Policy implementation, therefore, embraces a whole-of-country approach to partnerships as articulated in the National Development Plan and supported by the Barbados MHEWS Roadmap and Action Plan 2021, (p.37). The whole-of-country approach to implementation is to be achieved through the following:

1. Convening meetings of lead and supporting stakeholders of the Barbados MHEWS Policy's strategic interventions to agree on roles, priorities and schedules.
2. The development of a multi-year MHEWS Implementation Plan which seeks to harmonise the Policy's strategic interventions into and through existing programmes.
3. Reaffirm and strengthen linkages to existing national resilience programmes, such as the R2R, Constituency Councils digitisation initiatives, National Coastal Climate Risk Information Planning Platform (NCRIP), and philanthropic organisations.
4. Foster and enhance philanthropic partnerships in keeping with, or part of, the National Philanthropy Programme. The National Philanthropy Programme highlights the importance of a culture of giving to Barbados' national development and facilitates the participation and contributions of stakeholders at every level, (Ministry of Foreign Affairs and Foreign Trade, 2020).

The whole-of-country approach to implementation mobilises actors and actions across all of the Policy's strategic interventions and reinforces the integrated and multi-hazard nature of EWS.

5.2 IMPLEMENTATION STRUCTURE

The Barbados MHEWS Policy's implementation and oversight are integrated into the existing framework under the high-level authority of the EMAC. To this end, the Policy recommends the establishment of **The MHEWS Advisory Committee (TMAC)** and its embedding within the National EMAC Committee. TMAC is to have oversight for the MHEWS Policy's implementation, monitoring, evaluating and reporting, and review. The Department of Emergency Management will maintain its coordination responsibility for MHEWS programming and report to the EMAC through TMAC.

TMAC will be composed of three Technical Taskforces:

1. Technical (Operationalisation of the MHEWS Policy) Task Force
2. Monitoring, Evaluation and Reporting Task Force (in the absence of a dedicated MER unit)
3. Policy Review Task Force

TMAC will meet per the terms of reference to fulfil its roles and responsibilities, including providing leadership and oversight of the Barbados MHEWS Policy's implementation.

TMAC will guide the development of a strategy in support of implementing the Barbados MHEWS Policy.

The integration of TMAC into the EMAC will require a revisit of the functions of its existing Standing Committees. These Committees currently include a mix of Committees of sectors' interests and emergency support functions. The appropriateness of the range and scope of these in reporting to the EMAC will be assessed within the broader framework of CDM programming in Barbados. Figure 2 illustrates the implementation structure of the MHEWS Policy.

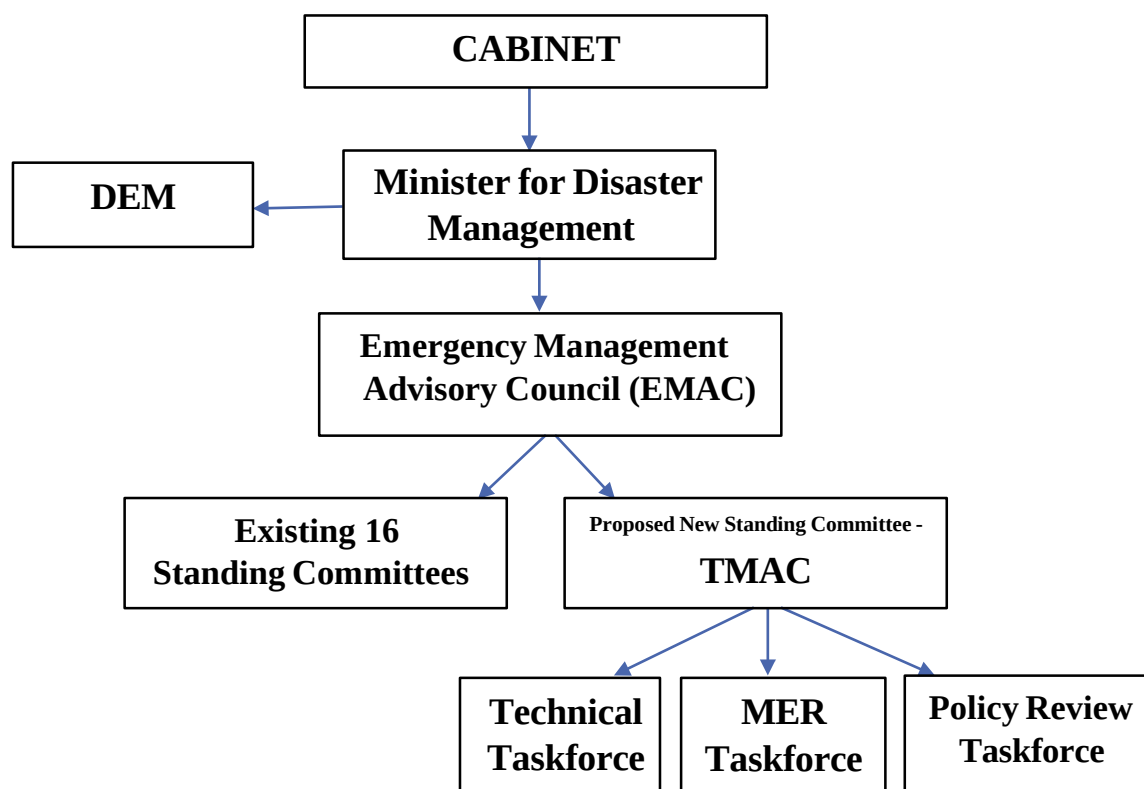


Figure 2: MHEWS Policy Oversight and Implementation Structure

5.3 MONITORING EVALUATION AND REPORTING ON ACHIEVEMENTS

A MER system for the MHEWS Policy shall be implemented, under the direction of the TMAC, to measure and monitor changes over time, track its effectiveness, and guide future planning of the Barbados MHEWS network. The MER framework shall be used to inform decision-makers whether targets are being met when circumstances have changed, whether policies are on track, or not being implemented.

TMAC shall establish a facility to provide this function in the short term as the capacity strengthening of the DEM to embrace this function is strengthened. TMAC shall, through this facility develop a MER framework for the Barbados MHEWS Policy that is aligned with relevant standards established in the national system.

5.4 **POLICY REVIEW**

A review of the Policy may coincide with the CDM CWP review process or at other agreed periods that relate to existing national and regional reporting requirements. The review will assess whether the Policy is maintaining alignment with contemporary developments in MHEWS, climate change and disaster risk reduction policy in the country, the region and globally.

The decision on the period for the report on the Policy Review will be made by the Emergency Management Advisory Council (EMAC) on the advice of the MHEWS TMAC. The outcome of the review of the deliberations on the MHEWS Policy Report will guide the determination on if it is to be amended or replaced.

6.0 **RESOURCING THE POLICY**

The MHEWS Policy shall be supported by a robust resource mobilisation plan within the more extensive DEM multi-year work programme. Financing for MHEWS is presently uncoordinated and unpredictable. The establishment of TMAC's Technical Taskforce will provide support to the DEM for resource mobilisation and the development of the resource mobilisation plan.

The Barbados MHEWS Policy is also to be supported by interagency and cross-sectoral funding partnerships in its implementation. The Barbados Meteorological Services and the Coastal Zone Management Unit are already working on some of the gaps identified.

The Barbados MHEWS Policy supports the need for consideration to be given to incentivising support for DRM and resilience at the private sector and household levels.

The Barbados MHEWS Policy further supports the belief that core funding is to be supported by innovative revenue-generating activities, public-private partnerships and the funding support of potential donors and grants at the international and regional levels.

Annex 1- MHEWS Policy Strategic Framework

VISION

The vision of the Barbados MHEWS Policy is to realise a national, multi-hazard early warning system that is evidence-based, end-user centred, inclusive and promotes efficiency, collaboration and saving lives in a safer, more resilient and sustainable Barbados.

GUIDING PRINCIPLES

Accountability, Inclusiveness, People-Focused, Sustainability, Technology, Innovation and Forward-Looking
Collaboration and Integration, Multi-hazard and multifunctional, Relevant and Contextual

POLICY GOAL

The Barbados MHEWS Policy seeks to build a national integrated MHEWS network that is science-informed, evidence-based, and supports the decision-making of all stakeholders.

POLICY OUTCOMES:

- Robust and strengthened governance arrangements for MHEWS in Barbados.
- Enhanced and harmonised systems for capturing and managing MHEWS related data.
- Information for public education and awareness that informs actions.
- Capacity built and the risk knowledge base for evidence decision making in MHEWS is accessible and effective.
- The mechanism for MHEWS resourcing is strengthened and sustained.

POLICY STRATEGIC INTERVENTIONS

<i>Governance</i>	<i>Monitoring, Analysis and Forecasting</i>	<i>Disaster Response Capabilities</i>	<i>Warning, Dissemination and Communication</i>	<i>Disaster Risk Knowledge</i>	<i>MHEWS Resourcing</i>
Robust and effective governance arrangements to support a MHEWS.	Defined standards for the detection, monitoring, analysis and forecasting of hazards established and maintained to support MHEWS.	Disaster response capabilities are enhanced to deliver the MHEWS through science-informed and evidence-based improvements.	An inclusive, robust network for data collection management, early warning, dissemination and communication infrastructure easily accessible by at-risk populations.	Science informed, evidenced based multi-hazard Disaster Risk Knowledge platform that provides the inputs for warning, preparedness planning and disaster mitigation.	Enhancement of incentivised National programmes linked to supporting MHEWS Resourcing.
ENABLING ENVIRONMENT			THE FOUR EWS PILLARS		

IMPLEMENTATION:

Mainstreaming | Partnerships | Monitoring, Evaluation and Reporting | Implementation Structure | Policy Review

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