



Strengthening Hydrometeorological and Early Warning Services in the Caribbean

State of Play

The Caribbean region is highly exposed to high-impact hydrometeorological hazards such as hurricanes and tropical storms, causing floods, landslides and storm surge. In 2017, two Category 5 hurricanes – Hurricanes Irma and Maria – hit the Caribbean and devastated several countries including Dominica, Puerto Rico, Antigua and Barbuda and Saint Maarten. In Dominica the storm's impact caused damage and losses of about US\$1.3 billion (equivalent to 226% of GDP in 2016). However, without continuous hurricane monitoring, forecasting and early warning systems (EWS), the loss of life could have been far worse.

While investments in risk reduction and adaptation are essential to increase physical resilience in the region, there is significant residual risk to vulnerable communities, including loss of life, livelihoods and assets. Given recent experiences from the 2017 Caribbean hurricane season, it is evident that populations at risk require early warning and emergency alerts that provide clearly defined actions and preventive measures to reduce the impact of climate and weather-related hazards.

Regional Approach

Since its launch in November 2018 in Barbados, *CREWS Caribbean – Strengthening Hydro-Meteorological and Early Warning Services* in the Caribbean – has begun the first phase of developing a wholistic strategy to strengthen hydrometeorological and early warning services, and in concert with regional agencies, global partners and a participation from civil society organizations.

CREWS Caribbean is a US\$5.5 million project financed by the Climate Risk and Early Warning Systems (CREWS) – a global initiative to significantly increase the capacity to generate and communicate effective, impact-based, multi-hazard, gender-informed early warnings to protect lives, livelihoods, and assets. The global CREWS Implementing Partners include: the World Meteorological Organization (WMO), The World Bank (WB) / Global Facility for Disaster Reduction and Recovery (GFDRR), and the United Nations Office for Disaster Risk Reduction (UNDRR).

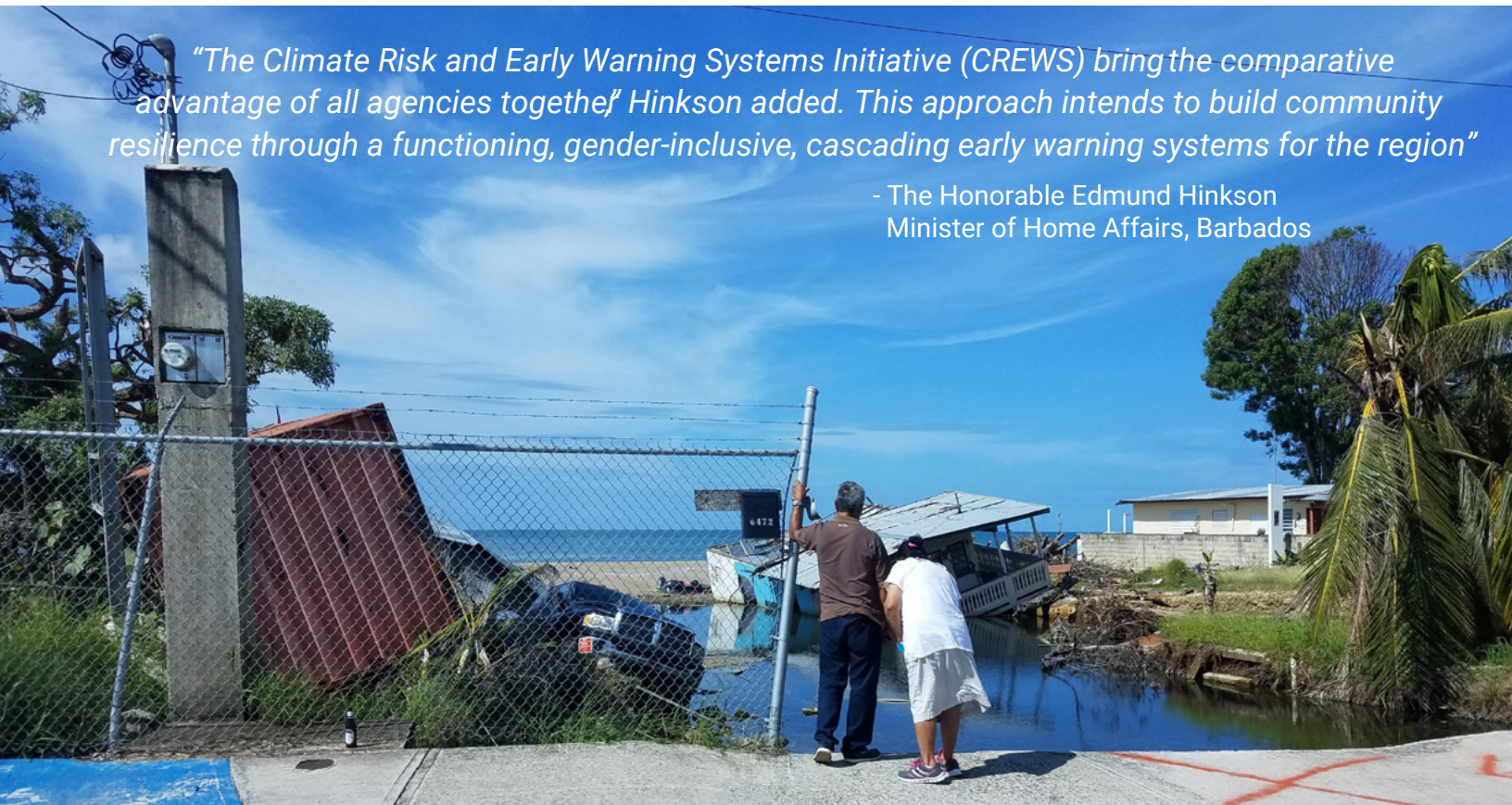
CREWS Caribbean is the first CREWS project to leverage all three Implementing Partners, working in close collaboration with key regional agencies: the Caribbean Disaster Emergency Management Agency (CDEMA), the Caribbean Institute of Meteorology and Hydrology (CIMH), and the Caribbean Meteorological Organization Headquarters Unit (CMO HqU).

CREWS Caribbean addresses regional- and national-level priority areas to comprehensively strengthen hydro-meteorological (hydromet) services and early warning systems (EWS) across the region. The three-year project primarily focuses on the Caribbean Community (CARICOM) member countries, while considering the role of all relevant actors, with the **core objective**:

To strengthen and streamline regional and national systems and capacity related to weather forecasting, hydrological services, multi-hazard impact-based warnings and service delivery for enhanced decision-making

"The Climate Risk and Early Warning Systems Initiative (CREWS) bring the comparative advantage of all agencies together," Hinkson added. This approach intends to build community resilience through a functioning, gender-inclusive, cascading early warning systems for the region"

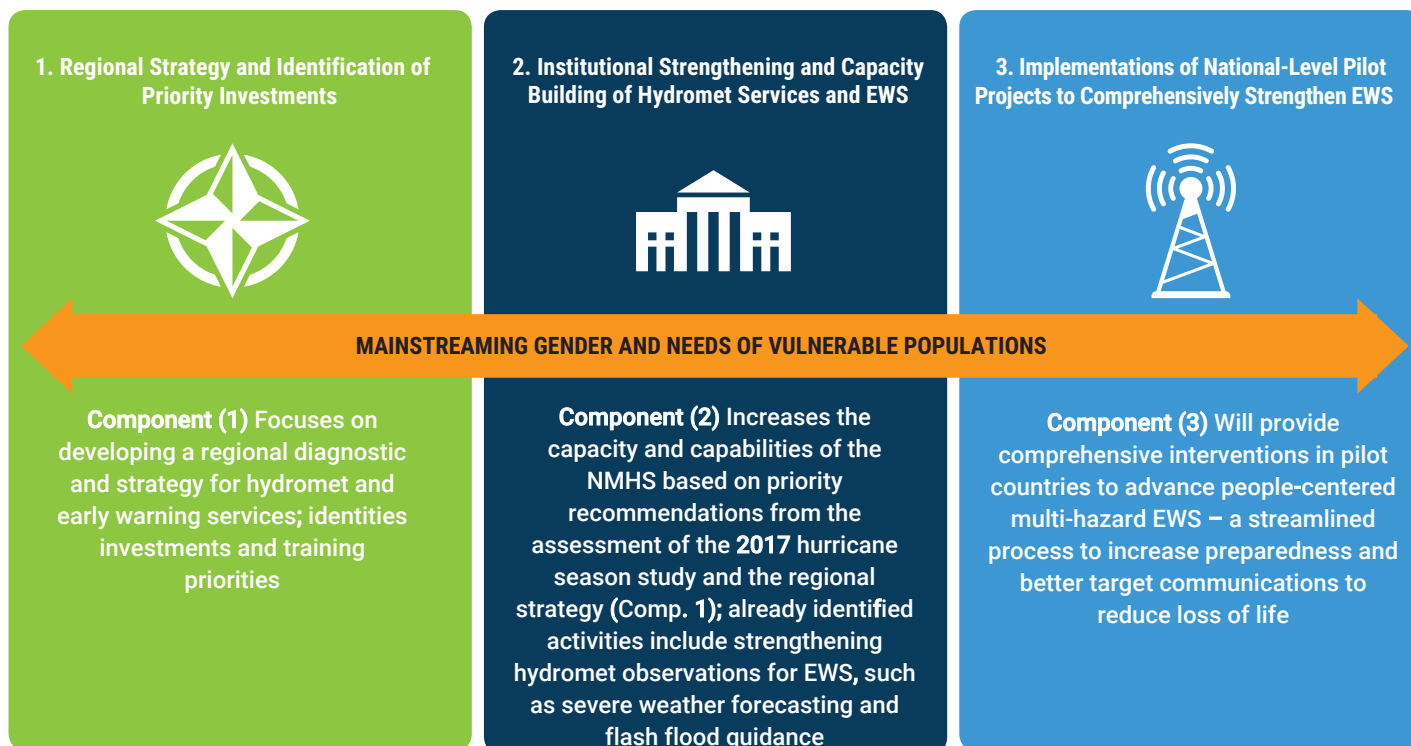
- The Honorable Edmund Hinkson
Minister of Home Affairs, Barbados



Components and Interventions

CREWS Caribbean emphasizes the need for high quality forecasts with timely and actionable warnings that are clearly communicated and targeted to vulnerable communities, that translates into effective preventive actions that can save many lives and reduce economic losses to the region. CREWS Caribbean is comprised of:

Three (3) Main Components and One (1) Cross-cutting Theme



Gender and Other Vulnerable Groups

CREWS Caribbean places emphasis on the consideration of gender and vulnerable populations (e.g. elder community members, women, children and persons with disabilities) ensuring EWS and communications integrate the unique needs and channels to effectively reach all communities and protect lives when faced with the threat of impact.

The project incorporates recommendations from the WMO report, Lessons learnt on Early Warning Systems during the 2017 Caribbean Hurricane

Season, which specifically focus on addressing the needs of disadvantaged groups which specifically focus on addressing the needs of disadvantaged groups and to improve 'last mile' communications to particularly vulnerable populations; this requires generating emergency alerts and advisory messages that better reflect a deeper understanding of vulnerable groups and diverse perspectives that influence how information is transmitted and received.

Phased Approach | Regional Strategy

During the first phase of CREWS Caribbean, a regional diagnostic is underway towards developing of a holistic strategy and prioritized action plan to strengthen and streamline early warning systems and hydromet services across the Caribbean.

The strategy will identify capacity building, institutional strengthening and investment needs at both the

regional and national levels to guide harmonization efforts and related investments. The strategy will serve to design pilot-project interventions to increase impact-based forecasting and will also identify priority investments in EWS and hydromet capacity, in both infrastructure and technical skills.

To learn more and for partnership opportunities:

World Bank	Melanie Kappes – Disaster Risk Management Specialist mkappes@worldbank.org
GFDRR	Anna-Maria Bogdanova – Operations Officer ambogdanova@worldbank.org
WMO	Lina Sjaavik – Project Officer, World Meteorological Organization lsjaavik@wmo.int
UNDRR	Maria Kontro – DRR Advisor for the Caribbean mkontro@eird.org
CREWS Secretariat	Donna Pierre – Disaster Risk Management Specialist dpierre@wmo.int

