

Goal of Approach:

The Enhancing Resilience to Reduce Vulnerability in the Caribbean (ERC) Project being implemented by the Caribbean Institute for Meteorology & Hydrology (CIMH) in partnership with the Executing Agency, the United Nations Development Programme (UNDP) Barbados and the OECS, focuses on enhancing regional and national capacities for disaster risk reduction with financial support from the Government of Italy. More specifically, the CIMH has been working with the CIMA Research Foundation regarding the development of a GIS disaster management platform (DEWETRA) that is capable of managing hazard related and exposure data for improved decision making. The DEWETRA platform is based on that used by the Italian Civil Defense and is being adapted for application to the Caribbean context and will be hosted at the CIMH in the near future. The main objective of this initiative is to strengthen national and regional disaster risk reduction mechanisms associated with natural, environmental and technological hazards, within the broader context of hydrometeorology and climate change; and for effective disaster recovery through capacity building for early warning systems and institutional collaboration for disaster management and response. The platform allows for the integration of a suite of multi-hazard products and provides a user-friendly online interface that is capable of merging hazard and exposure data.

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Main elements of the implementation strategy

Immediately after the January, 2010 earthquake in Haiti, the CIMH began producing high resolution precipitation forecasts superimposed on a watershed map for Haiti in support of disaster management activities on the ground. The approach enabled critical watersheds and at risk communities that were exposed to the forecasted events to be identified before the onset of the event. This strategy has evolved into fully operational flood hazard prediction products that are currently being hosted on the DEWETRA platform.

The platform is also capable of capturing impact specific data (loss, damages, injuries, etc.) directly attributable to the event. This information can be entered manually through a graphical user interface and will allow such impacts to be correlated with simulated and measured hazard data. All information is stored in a comprehensive database for immediate retrieval or for use at a later date. The CIMH will continue to encourage users to enter impact related data through the convenient interface during the project in addition to after the project has come to a close. It is envisioned that the archiving of hazard and loss data will support the future development of loss curves needed for risk calculations especially if spatial information on property values and vulnerable groups become readily available in a format suitable for integration.

The CIMH has actively engaged disaster management personnel and hydrometeorological services in beneficiary countries regarding the use of the platform. Stakeholders have been providing data (hazard related and exposure) for use with the platform in addition to participating in training sessions. The addition of damage/loss data would greatly enhance the capabilities of the platform by supporting the development of risk related products. The platform has been accessed several times in support of decision making during the current hurricane season when an area of disturbance presents a risk to the Caribbean. The beneficiary countries are Barbados and Member States of the OECS. However, the GIS based platform covers the Caribbean. Hence, a number of the products are regional in nature (e.g. satellite products, NWP products etc). The goal of the implementation strategy is to encourage countries to include the use of the platform as part of their disaster management strategy through a common framework that allows users to access the same disaster related products in a GIS environment for improved decision making.

Targeted beneficiaries

The targeted beneficiaries are Barbados and Member States of the Organisation of Eastern Caribbean States (OECS). However, as previously stated, some regional data products are being produced. On average, the countries of the Caribbean continue to experience challenges related to efficient, sustainable data management. This is not unique to the Caribbean as the problem is a function of the human and financial resources available for such activities. The platform being implemented provides the opportunity for the management of risk related data sets in a pseudo real-time, geospatial environment. This allows potential impacts to be forecasted at regional, national and local levels. Another potential benefit will be realized should damage/loss data be made available as this will allow risk-based calculations within the platform.

Any significant lessons learned

- Disaster management officials need information specific to their needs (e.g. impacts on the ground) whereas information providers are sometimes too technical when providing hazard related information
- 'Buy in' from stakeholders is essential. The benefits of the initiative needs to be explained in clear terms
- Data availability for risk calculations is a challenge (e.g. loss data is generally not documented or archived)
- Implementation success and project sustainability is best achieved through exploring synergies and utilizing linkages with other regional initiatives (e.g. CADM II, RTFF)

Resource requirements

- The inclusion of weather radar data from the installations across the region would greatly enhance the platform
- An innovative methodology for the development of vulnerability (loss) curves may be required for some hazards. This may involve working with insurance companies to ascertain property values.
- Additional hydrometeorological equipment will be needed to improve the spatial representation of data being fed to the platform
- Knowledge transfer and capacity building within beneficiary countries among others especially as it relates to the development and mainstreaming of additional disaster management related products within the platform environment.
- Financial resources will continue to be required to improve the platform post ERC project
- Improved bandwidth for internet connections

Potential for replication or scaling-up

Scaling-up has already been occurring during project implementation. The platform has been developed with regional products albeit that the focal points for instrument installations and in situ data capture are located within Barbados and the OECS countries. Therefore, the region already benefits from some of the products on the platform. Decision making can be further improved should use of the platform be mainstreamed across the Caribbean. Countries outside of the listed beneficiaries have already indicated that they would be willing to support the initiative.

Any additional information