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CCRIF

The Caribbean Catastrophe Risk Insurance Facility



A CCRIF Review of Regional Data Management and Sharing Issues

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Eastern Caribbean Open-Source Geospatial Data Sharing and Management Workshop

October 6-7, 2011 St. George's, Grenada



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Presentation Format

- What is CCRIF?
- How CCRIF Uses Data
- The Impact of Regional Data Management and Sharing Issues on CCRIF
- Suggestions for Regional Data Sharing Initiatives
- Summary

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What is CCRIF?

- Further to growing regional concerns regarding for hazard impact preparedness and risk mitigation, Ivan's impact of nearly 200% of GDP on Grenada and the Cayman Islands provided incentive for CARICOM heads of government to take action
- In 2004 (following Ivan) CARICOM heads of government requested that the World Bank design and implement a cost effective risk transfer programme on their behalf
- With capital raised from public donors (US \$50 M) and participants (US \$22 M) the Caribbean Catastrophe Risk Insurance Facility (CCRIF) was launched in 2007.
- CCRIF serves as a regional catastrophe fund to limit the financial impact of devastating hurricanes and earthquakes by providing liquidity very quickly after a major event
- As the world's first multi-national parametric insurance risk pool covering sovereign nations, it functions like business interruption insurance against Government revenue reductions in the aftermath of major natural catastrophes

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What is CCRIF?

- At present 16 regional states participate in CCRIF:

Anguilla

Grenada

Antigua and Barbuda

Haiti

The Bahamas

Jamaica

Barbados

Saint Kitts and Nevis

Belize

Saint Lucia

Bermuda

Saint Vincent and the Grenadines

The Cayman Islands

Trinidad and Tobago

Dominica

The Turks and Caicos Islands

- CCRIF provides coverage to these territories through use of a pre-agreed catastrophe risk model and public-domain input data to estimate government losses immediately after an event
- Payments are then quickly made against those estimated losses without the need for slow and costly on-the-ground loss adjustment

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How CCRIF Uses Data

- There are two main areas where CCRIF uses geospatial and non-spatial data in its services to member countries
 - **Catastrophe risk modelling** (of earthquake, hurricane and rain events)
 - This relies on publicly sourced disaster event data (USGS, NHC and NASA) and socio-economic data for member countries (population, GDP, sector contributions, major infrastructure, etc.)
 - Information is also derived from remotely sensed topography, bathymetry, land cover, etc.
 - **Disaster forecasting, event analysis and reporting**
 - Public data is also used in a major way (USGS, NHC, TRMM, SRTM, etc...)
 - Where possible country specific geospatial data is obtained from member territories and used to support various types of analyses.
 - e.g. - CCRIF's 2010 Economics of Climate Adaptation study relied on data from various member countries. Countries submitted GIS shapefiles of their critical infrastructures (government buildings and roads). These data were used as inputs to a model which would calculate various scenarios for how climate change could impact on these countries
- Availability of high quality and reliable geospatial data is critical to the work CCRIF does

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Impact of Regional Data Management and Sharing Issues on CCRIF

- **Acquisition of high quality regional geospatial data is very challenging**
 - Acquisition processes are often laden with complications and uncertainties or data is simply not shared
- **Once acquired certain trends pertaining to the management of data are evident for several territories with a few exceptions observed**
 - Metadata is often insufficient or totally absent
 - Appropriate database standards that promote efficiency are sometimes lacking. Geospatial data often contain several ambiguities/duplications and generally fail to conform to normalisation standards
 - Submitted GIS shapefiles often lack specific and meaningful attribute categorisations and tend to be very generalised
- **These acquisition issues and data management trends force CCRIF to rely almost exclusively on public sources of data for analysis and reporting**
- **CCRIF's catastrophe modelling and its Real Time Forecasting System could see significant improvements with the incorporation of comprehensive geo-located inventories of all critical country structures and natural features with appropriate classifications and values where relevant.**

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Suggestions for Regional Data Sharing

- CCRIF encourages the use of proprietary and open source geospatial tools that promote data sharing
- CCRIF uses a Google Earth based tool known as The Arbiter Of Storms (TAOS) Real Time Forecasting System (RTFS) to provide real-time estimates of maximum expected hazard levels and impacts (from wind, storm surge, wave and precipitation) on member state populations for active Atlantic cyclones
- Google Earth in conjunction with other freely obtained geospatial tools are useful mechanisms for data sharing
 - Numerous third-party applications support translation of GIS shapefiles into the native Google Earth file formats (KML/KMZ) and vice versa
 - GIS operators in the region can use powerful proprietary desktop software (ESRI, MapInfo, GeoMedia) or open source versions (GRASS) to manipulate country data in meaningful ways and then share these data as KMZ/KML files.
 - Data can also be made available through web sites using the Google Earth API extension to grant free access through a web browser

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Suggestions for Regional Data Sharing

- Open source tools like GeoNode provide even more advanced levels of functionality and can take the data sharing concept a step further
 - GeoNode's open design innately encourages constant improvement/enhancement and redistribution of regional datasets
 - The open concepts upon which GeoNode was built on also aid to build consensus within the region on the implementation of higher data quality standards with greater uniformity among fellow countries on data management practices
- CCRIF is presently developing a pilot GeoNode site to test the suitability of this platform for dissemination of products which we aim to make available to CCRIF member countries and the wider disaster community
- Development is expected to be complete by end of October 2011.

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Summary

- **Better data management practices with higher degrees of regional uniformity is absolutely critical to regional risk mitigation initiatives**
- **This can best be achieved through a combination of**
 - The formal establishment of regional geospatial data management policies which speak to common standards for data collection, storage and maintenance practices
 - Equal levels of enforcement of these policies by regional authorities responsible for the management of geospatial data
- **Sharing of regional data for the advancement of catastrophe risk mitigation must be promoted though regional policy as well as via practical use of software technology that lend to this principle**
 - Greater levels of education on the practical use and benefits of various forms of cost effective geospatial technologies is critical

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THANK YOU

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