Why data?
Climate Monitoring, Sectoral Applications and More…

Part 1

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CIMH

- The Training, Research and Data Archiving arm of the Caribbean Meteorological Organisation

The Caribbean Meteorological Organization

- Anguilla, Antigua and Barbuda
- Barbados
- Belize
- British Virgin Islands
- Cayman Islands
- Dominica
- Grenada
- Guyana
- Jamaica
- Montserrat
- St. Kitts/Nevis
- St. Lucia
- St. Vincent and the Grenadines
- Trinidad and Tobago
- Turks and Caicos Islands

PRIMARY FUNCTIONS

- Train various categories of meteorological and hydrological personnel
- Operate as a centre of research in meteorology, hydrology and associated sciences
- Data collection, storage, & dissemination
- Maintain, repair, and calibrate meteorological & hydrological instruments
- Advise regional governments on matters related to meteorology & hydrology
- Provide consulting services to industry

Without CLIMATE DATA…

- …No climate monitoring
- …No forecasting
- …No understanding of climate trend
- …No sectoral applications
- …No idea of adaptation approaches to CC

Drought, Rainfall Monitoring & Forecasting for example

Types of Drought

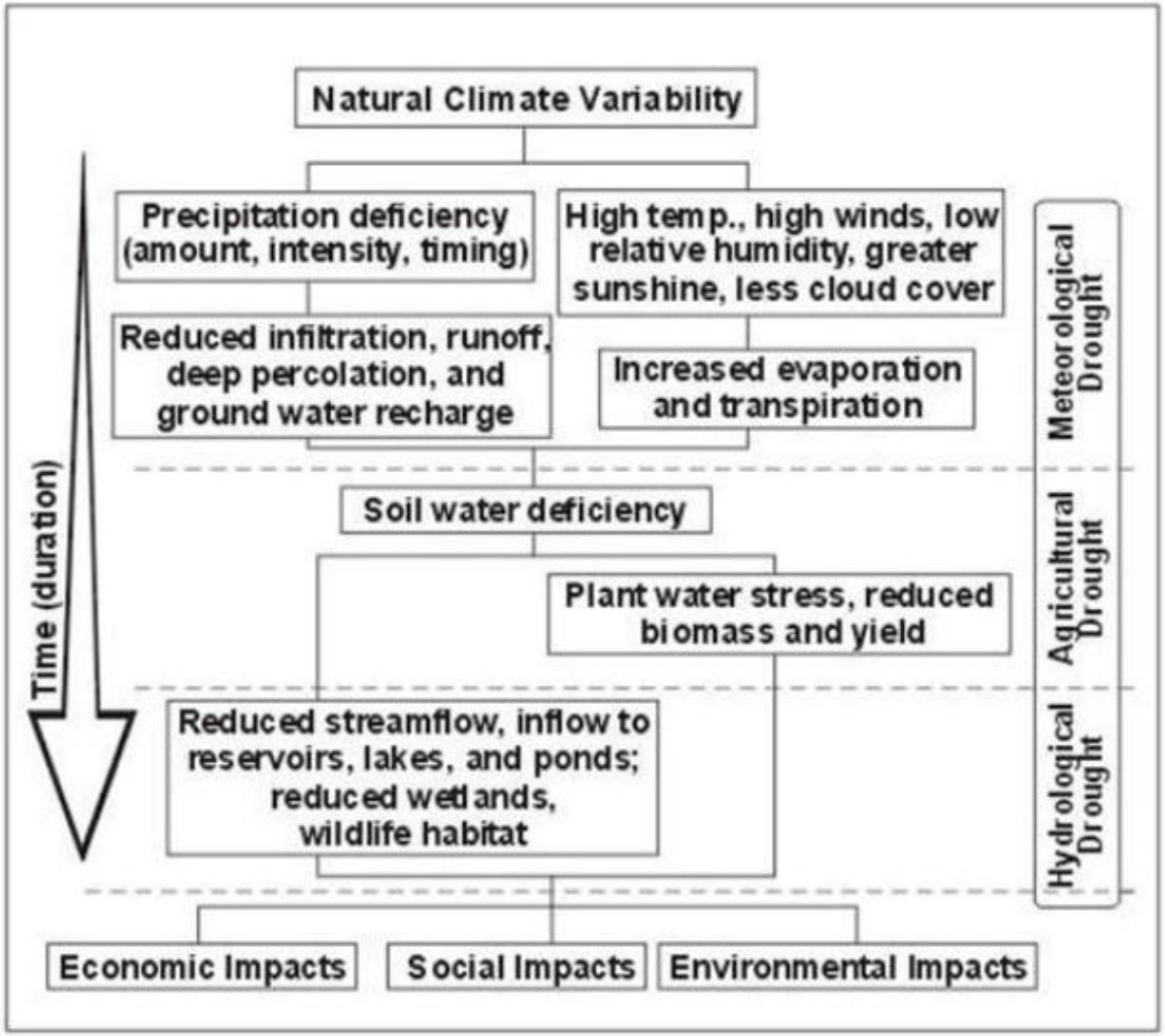


Figure 1. Relationship between meteorological, agricultural and hydrological drought (NDMC, 2006)

Drought Early Warning in the Caribbean

- Traditionally an analysis of rainfall totals and often reactive
- Caribbean Drought and Precipitation Monitoring Network (CDPMN) launched under CARIWIN in January 2009 expected to be fully operational by the end of 2010
- Goal of CARIWIN is to increase the capacity of the Caribbean countries to deliver equitable and sustainable IWRM by
- Implemented jointly by McGill University, CIMH and 3 partner countries (Grenada, Jamaica, Guyana)

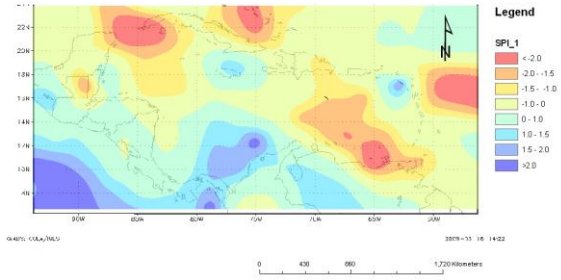
CDPMN on two scales

- Caribbean Basin Monitoring
- Country-level Monitoring

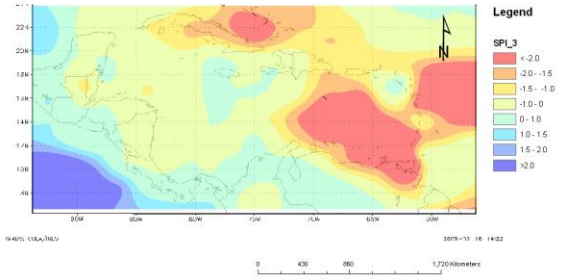
- Precipitation status monitored using a number of indices
- Final precipitation status determined, by consensus, by a network of persons from different sectors, institutions and communities embracing the diversity in definitions and impacts of drought
- Short term and seasonal rainfall forecasts to provide a projection of future drought (1 - 6 months possible)

Caribbean Basin Monitoring
Caribbean SPI

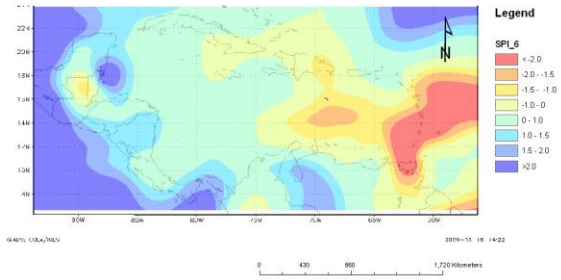
SPI for March 2010



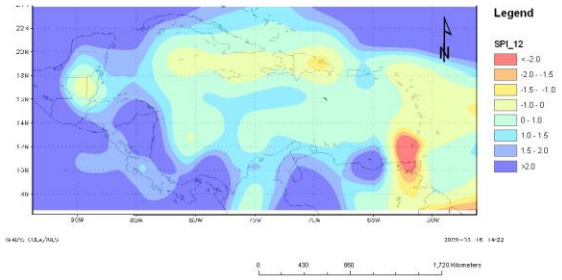
SPI for Janurary to March 2010



SPI for October 2009 to March 2010

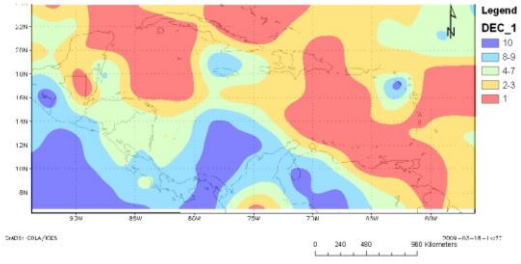


SPI for April 2009 to March 2010

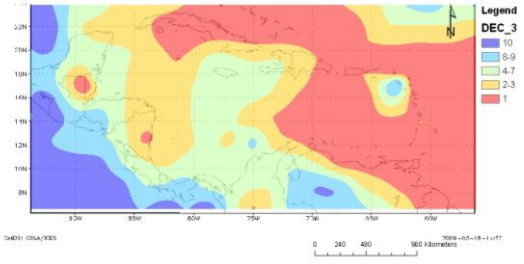


Caribbean Basin Monitoring
Caribbean Deciles

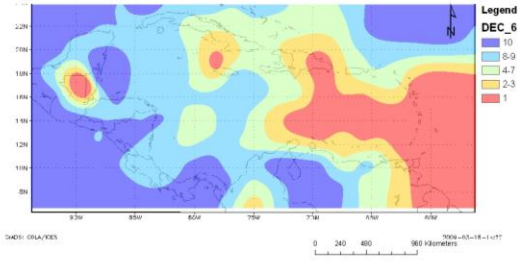
Deciles for March 2010



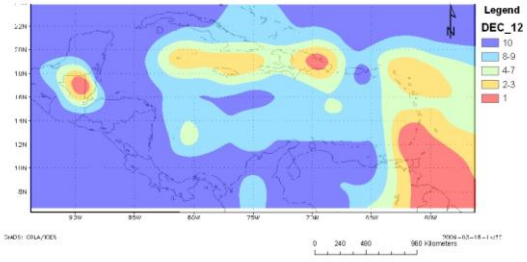
Deciles for Janurary to March 2010



Deciles for October 2009 to March 2010

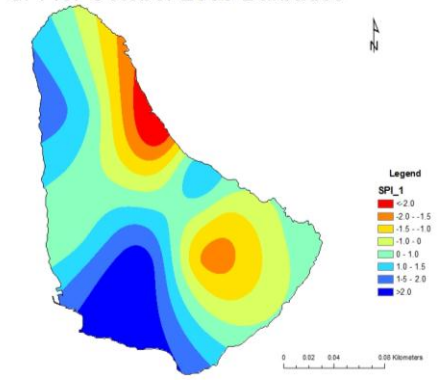


Deciles for April 2009 to March 2010

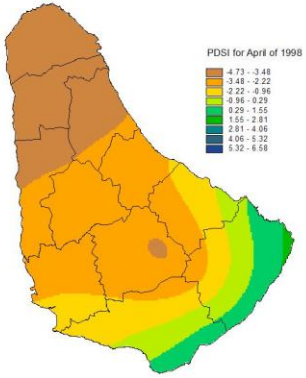


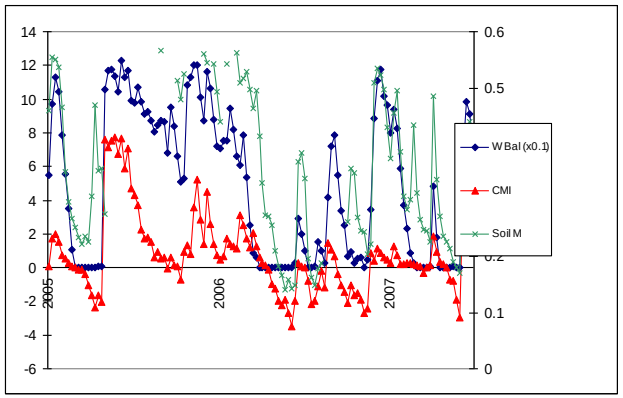
Country Level Monitoring
Examples

SPI for October 2009 Barbados

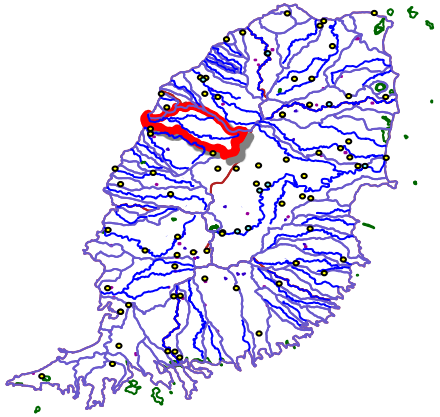


Palmer Drought Severity Index, Aprl 1998

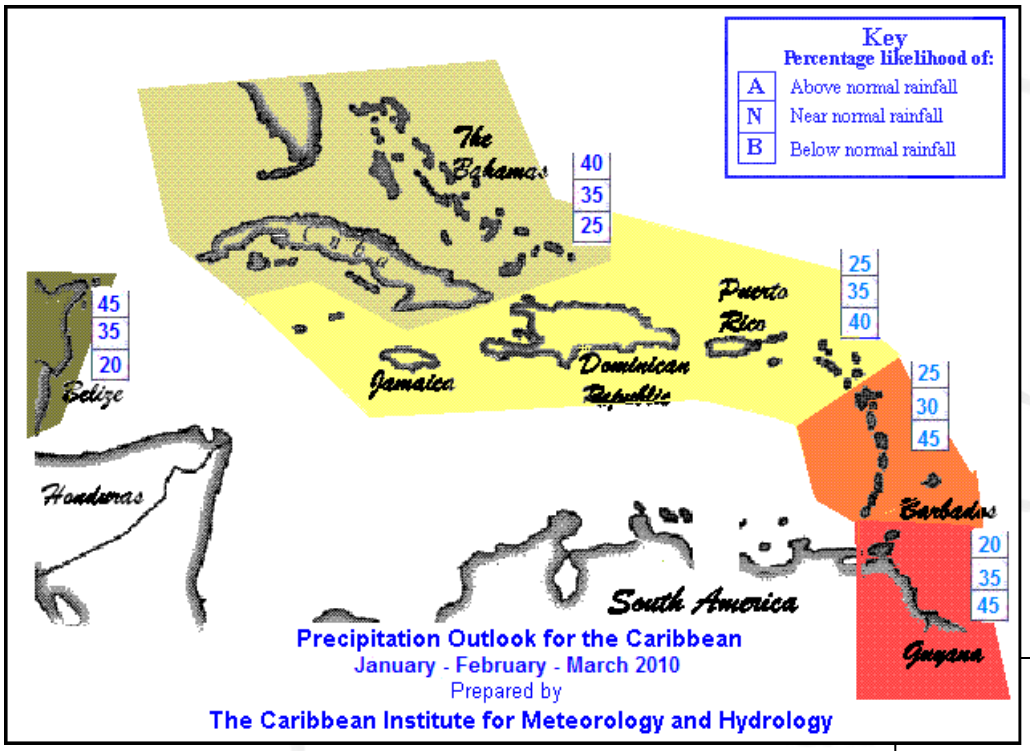




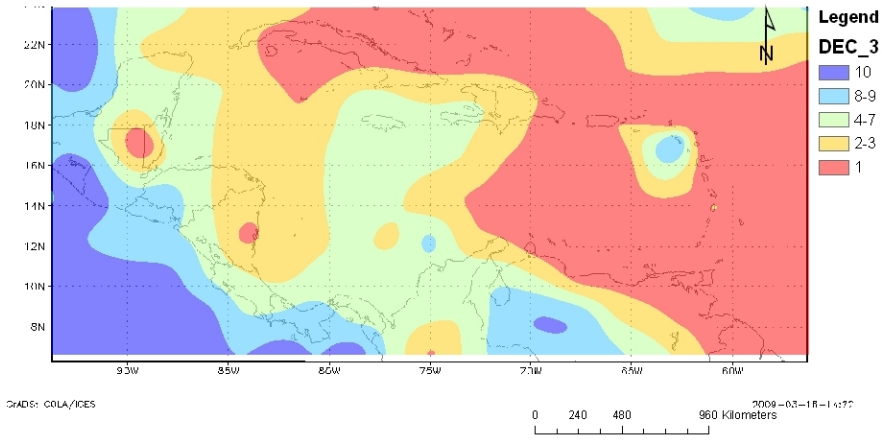
Time series of agricultural drought indicators from January 2005 to June 2007

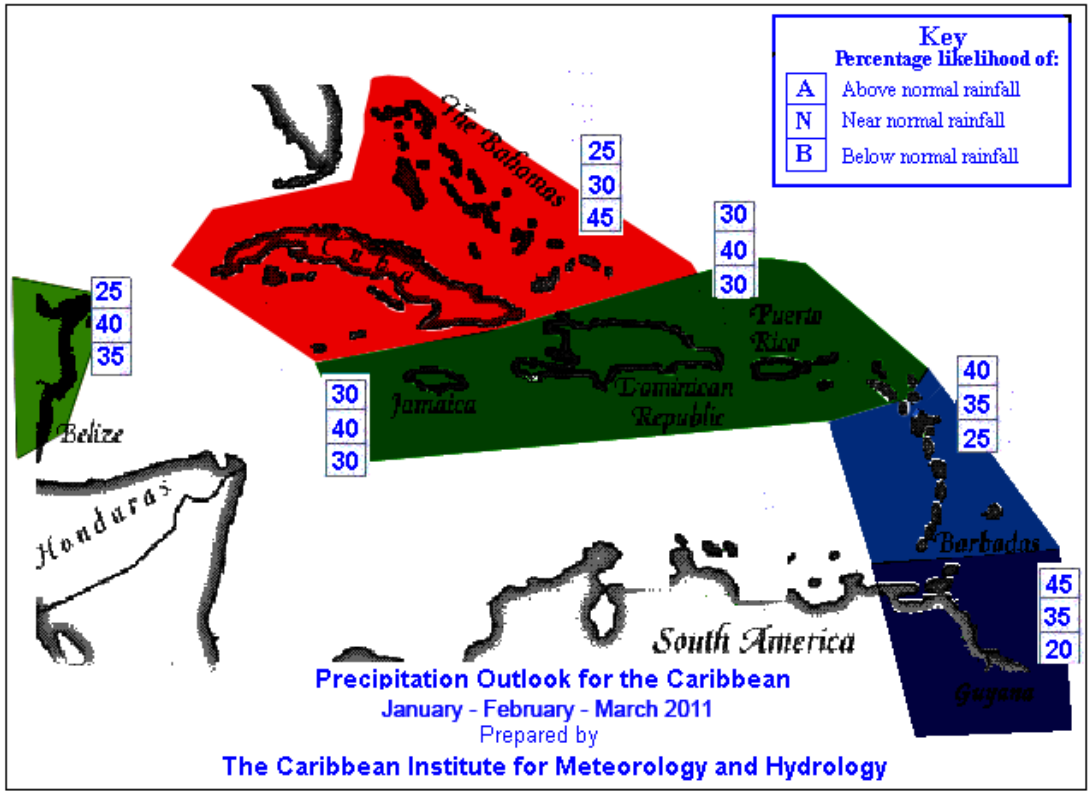


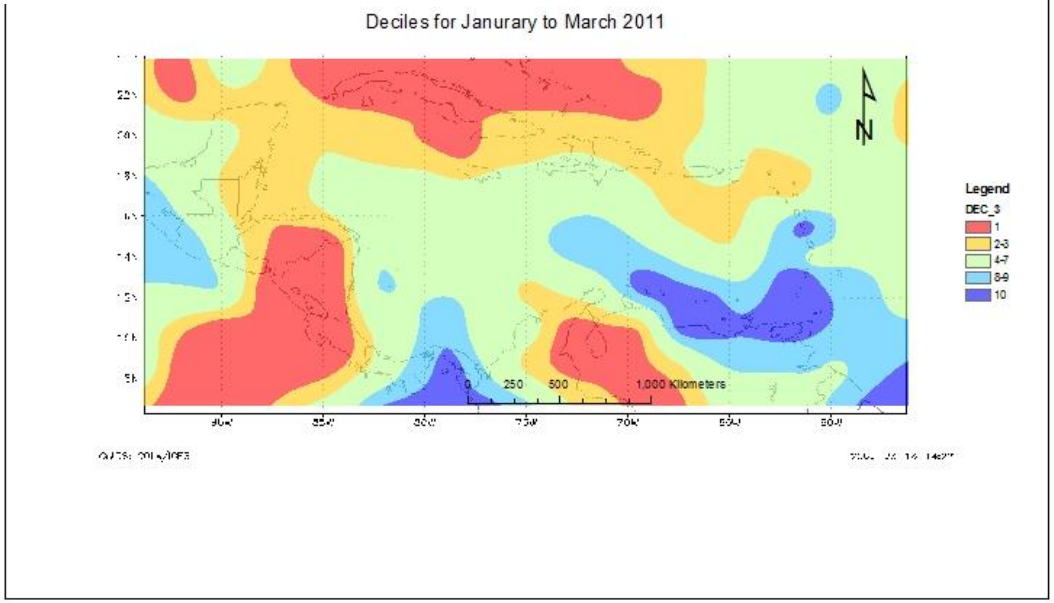
Flow Measurements



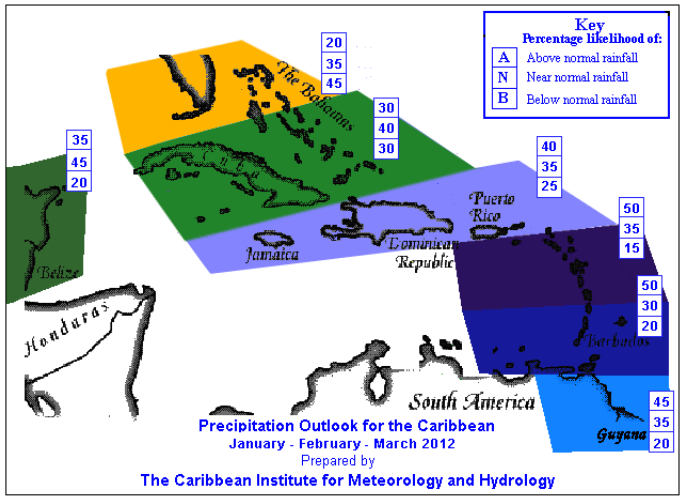
Deciles for Janurary to March 2010




Key
Percentage likelihood of:
A Above normal rainfall
N Near normal rainfall
B Below normal rainfall
The Bahamas
Cuba
Jamaica
Dominican Republic
Puerto Rico
Belize
Honduras
Barbados
South America
Guyana
25
30
45
30
40
30
25
40
35
30
40
30
40
35
25
45
35
20
Precipitation Outlook for the Caribbean
January - February - March 2011
Prepared by
The Caribbean Institute for Meteorology and Hydrology


Deciles for Janurary to March 2011
N
Legend
DEC_3
1
2-3
4-7
8-9
10
0 250 500 1,000 Kilometers

Prediction - Precipitation Outlook?



Drought prediction and alerts based on the final Monitor Index and the PO.
http://www.cimh.edu.bb/curprecip.htm

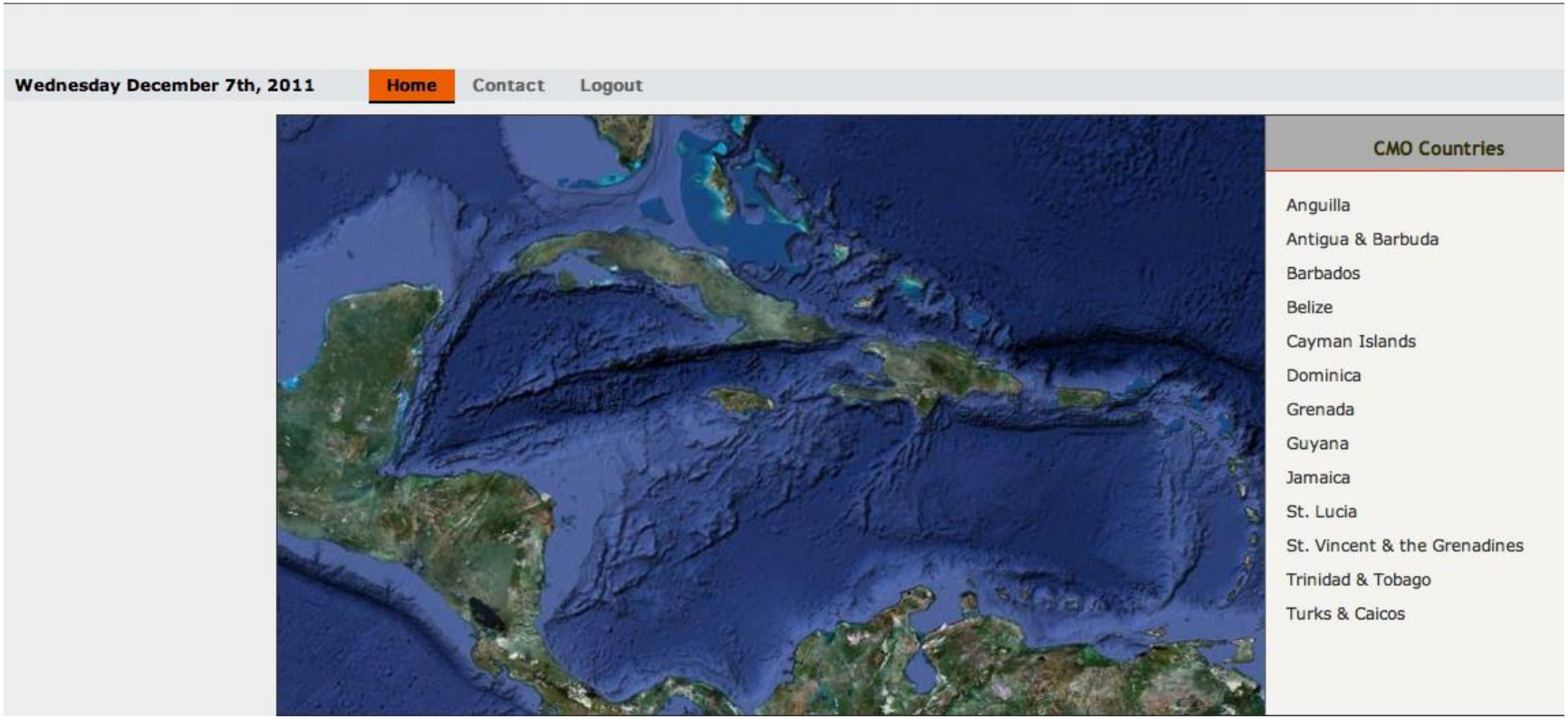
February, 2012

Station	1 mth	3 mth	6 mth	12 mth	Probability
Wallblake Anguilla	0.46- 2.32	0.82- 2.63	1.19- 1.65	1.58-1.87	40
	-0.45- 0.46	0.01- 0.82	1.06-1.19	1.50-1.58	35
	-1.60--0.45	-0.88- 0.01	0.91-1.06	1.41-1.50	25
VC Bird Antigua	0.47-2.26	0.66- 2.30	0.49- 1.26	1.45-1.86	50
	-0.43 -0.47	0.02-0.66	0.25-0.49	1.32-1.45	35
	-1.79- -0.43	-0.69- 0.02	0.00-0.25	1.20-1.32	15
Bayaguana DR	0.39- 1.75	-0.25-2.01	-1.11-0.38	0.12-0.90	40
	-0.45-0.39	-1.14- -0.25	-1.37 - -1.11	-0.10-0.12	35
	-1.38- -0.45	-1.56- -1.14	-1.50- -1.37	-0.29- -0.10	25
Central Farms Belize	0.49- 1.73	0.21-2.44	-0.45-1.22	-0.61-0.66	35
	-0.27- 0.49	-0.69-0.21	-0.85--0.45	-0.88--0.61	45
	-1.70--0.27	-1.43- -0.69	-1.11- -0.85	-1.07--0.88	20

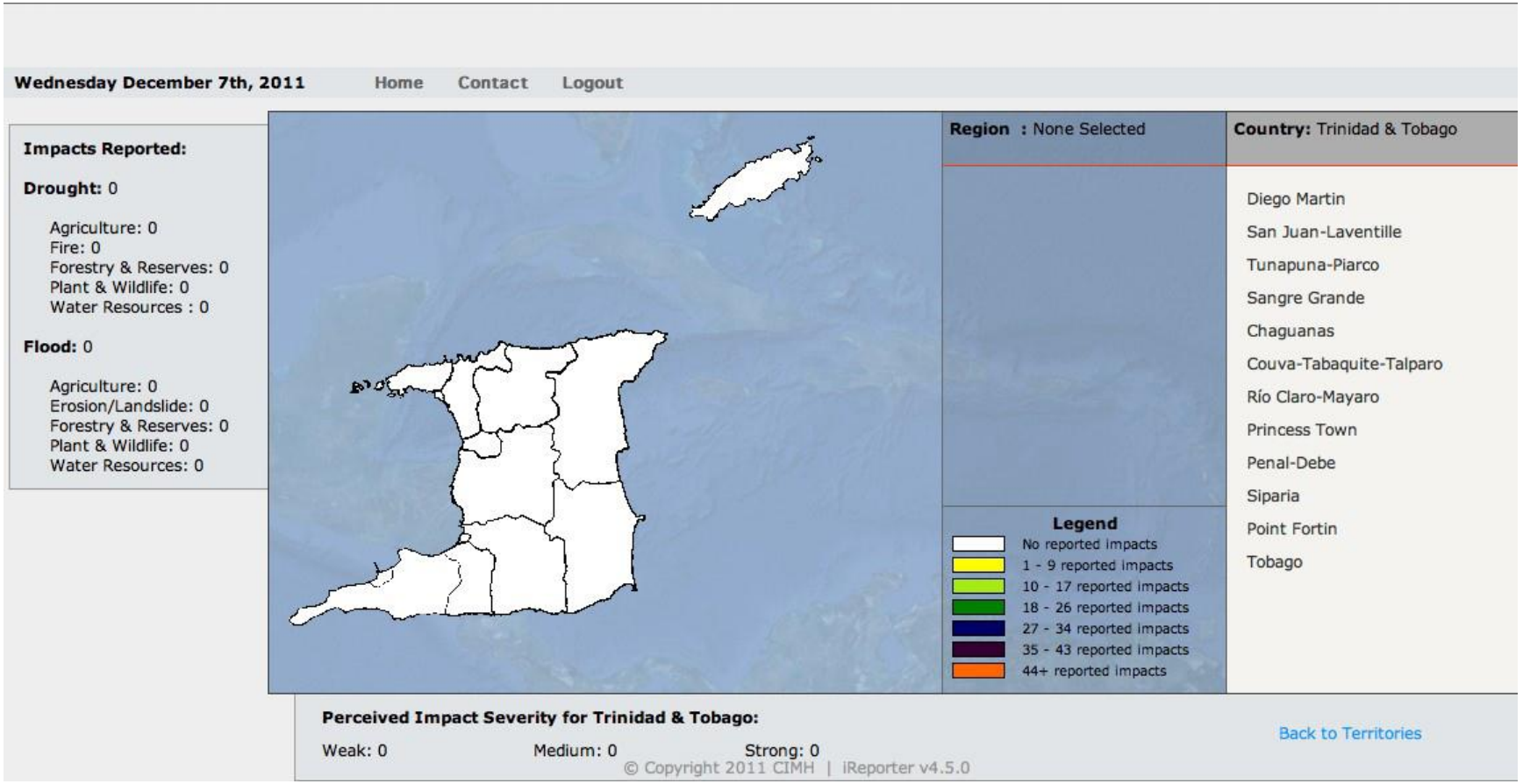
Enhancing Monitoring at the National Scale

- Development of Rainfall Impact Reporter
- Training for nationals – focus on Jamaica, Grenada and St. Lucia through a training workshop in 2 weeks time in Jamaica. Comes with some equipment for Hydrological and Agricultural monitoring. Sponsored by the Government of Brazil through FAO
- Caribbean Water Monitor

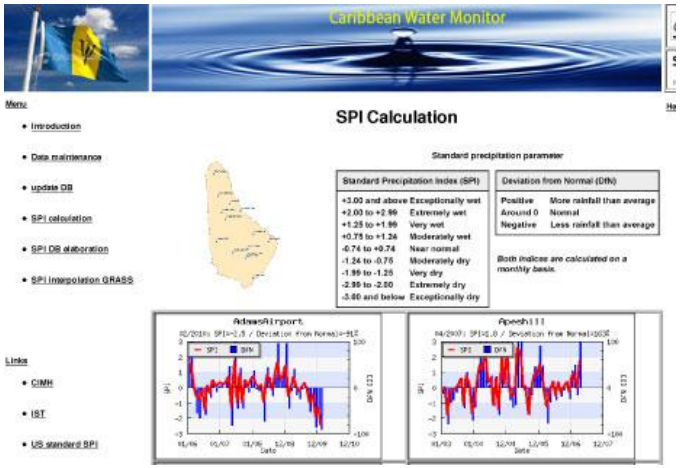
Rainfall Impacts Reporter



RIR Example from Trinidad



Caribbean Water Monitor



Tool created calculates SPI and Deviation from Normal for any station and time period in its data base. These are automatically graphed.

SPI is also mapped using the open access GIS software Grass. Some tweeking of the software still to be done.