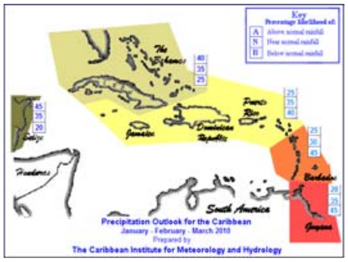
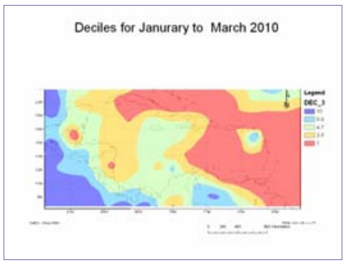




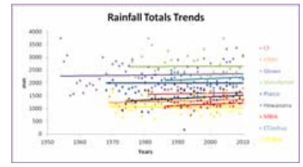
The Project

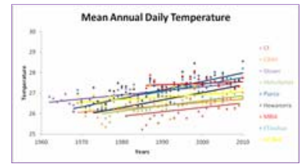
OVERARCHING OBJECTIVE

To increase and sustain agricultural productivity at the farm level in the Caribbean region through improved applications of weather and climate information using an integrated and coordinated approach.

METHOD

- Training of personnel of the participating meteorological and agricultural services and research institutes in relevant aspects of agrometeorology, climate and crop modelling.
- Analysis of rainfall and temperature data and development of predictors of the rainy season potential and provision of near-real time weather information for improved crop management.
- Developing an effective pest and disease forecasting system through improved crop monitoring and use of modelling approaches.
- Rescuing of hard copy data and entry into CIMH database
- Preparation and wide dissemination of a user-friendly weather and climate information newsletter for the Caribbean farming community.
- Organisation of regular forums with the farming community to promote a better understanding of the applications of weather and climate information.





Climate change research has advised that temperatures will increase and rainfall decrease in the Caribbean. Recent trends have shown that temperatures are increasing. However, rainfall trends are not as clear.

Moderate | Severe | Extreme | Exceptional

Occurrences of Drought for Piarco, Trinidad (3mth SPI)							
January		April		July		October	
SPI	Year	SPI	Year	SPI	Year	SPI	Year
-1.4	1953	-0.99	1958	-1.6	1957	-2.45	1957
-1.64	1959	-1.27	1959	-1.31	1959	-1.44	1958
-1.04	1962	-1.04	1961	-1.26	1960	-0.9	1959
-0.82	1963	-1.04	1962	-1.28	1971	-1.48	1962
-1.71	1964	-1.35	1969	-1.83	1973	-1.49	1963
-0.94	1969	-0.85	1971	-1.69	1974	-0.81	1965
-1.14	1973	-1.49	1978	-1.37	1975	-0.95	1967
-2.87	1978	-1.22	1983	-1.08	1989	-1.57	1972
-1.72	1979	-1.35	1984	-1.74	1991	-1.17	1976
-1.35	1993	-1.66	1987	-0.99	1993	-1.45	1989
-2.03	1996	-1.32	1988	-0.99	1999	-1.21	1997
-1.68	2010	-1.32	1993	-0.96	2001	-1.52	2002
		-0.93	1998	-0.91	2003	-0.81	2003
		-1.08	2001	-1.02	2007		
		-1.15	2003	-0.96	2008		
		-0.85	2005	-1.15	2009		
		-0.95	2010				

Seasonal rainfall forecasts and rainfall monitoring information, like those above, were important in alerting and advising the population during the recent 2009 to 2010 Caribbean drought. If one thinks that this was a one-off event, think again! Droughts, of varying intensities, have always been a part of the climate landscape of the Caribbean. That is evident from the example of Trinidad above.

Return Period	Rainfall Return Levels								
	Central Farms	CIMH	Georgetown	Melville Hall	Piarco	Hewanorra	MBIA	Et Joshua	VC Bird
2	83.0	82.1	96.6	138.5	82.4	85.4	85.4	90.7	73.8
5	106.3	111.1	119.6	203.7	106.3	128.1	128.1	124.7	124.7
10	120.7	133.5	135.6	262.8	117.6	169.2	169.2	151.4	177.7
20	133.9	157.6	151.5	335.3	125.9	222.2	222.2	180.6	250.3
50	150.1	193.1	173.1	459.5	133.9	318.1	318.1	224.5	391.4
100	161.5	223.4	189.9	581.7	138.4	417.7	417.7	262.6	548.0

Return Period	Maximum Temperature Return Levels								
	Central Farms	CIMH	Georgetown	Melville Hall	Piarco	Hewanorra	MBIA	Et Joshua	VC Bird
2	38.58	32.71	32.93	32.25	34.37	27.65	32.82	32.57	32.56
5	39.97	33.45	33.61	32.81	34.96	28.01	33.46	33.18	33.10
10	40.81	34.08	34.00	33.21	35.31	28.18	34.03	33.57	33.45
20	41.55	34.82	34.34	33.62	35.64	28.32	34.73	33.92	33.77
50	42.43	36.02	34.72	34.18	36.03	28.45	35.90	34.36	34.16
100	43.04	37.13	34.97	34.64	36.30	28.53	37.04	34.68	34.44

Extreme weather and climate events are often responsible for significant agricultural losses. For planning purposes, it would be an asset to know the frequency of occurrence of such events; or, as indicated in the tables above, the type of event that may occur once in every 2 or 10 or 100 years.

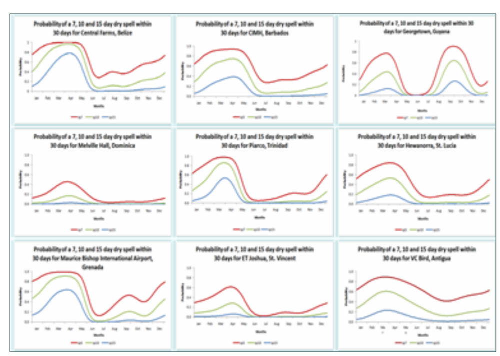
The development and behaviour of insect pests and diseases are strongly influenced by weather conditions. Models driven by weather information can aid in their control, indicating periods of potential development and spread. CAMI scientists are preparing models for whitefly, citrus psyllid and black sigatoka to aid in crop protection

Acquiring data is paramount for the success of the project. CAMI sought to rescue weather data still on paper (like these in Guyana) before it is lost or discarded

Water is the most limiting and variable environmental factor on crop production. Rainfall and evaporation information can aid in in efficient irrigation management

Expected Outcomes

1. Improved ability of policy makers and extension agencies to fully exploit the rainy season potential.
2. Better informed farming community regarding weather and climate.
3. Improved capabilities in the farming community to make strategic and tactical decisions for soil and crop management.
4. Improved crop quality and farm incomes through more effective pest and disease management.
5. Enhanced environmental benefits through reduction in the use of insecticides and pesticides.
6. Enhanced incomes at the farm level for the small farmer through better applications of weather and climate information.
7. Enhanced capacity of Meteorological and Agricultural Services, CARDI and CIMH to perform the tasks relevant to the goals of this action.
8. Increased interactions between the meteorological services, agricultural extension agencies and the farming community resulting in the provision of better services to farmers.
9. Availability of regular feedback to the meteorological services on the nature of services and products needed by the farmers.



Agriculture policy and planning should be based on well researched information. Understanding the critical aspects of climate that impact agricultural productio is paramount. Information like the likelihood of having a dry spell at any particular time, is important information for planning in both rainfed and irrigated agriculture.

Partners

National Meteorological and Hydrological Services (NMHSs) of
Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Lucia, St Vincent and the Grenadines and Trinidad and Tobago
The Caribbean Agricultural Research and Development Institute (CARDI)
World Meteorological Organization (WMO)

Co-ordinated By
The Caribbean Institute for Meteorology and Hydrology
www.cimh.edu.bb/cami