This is the first farmer's bulletin produced by our office as part of the Caribbean Agro-Meteorological Initiative (CAMI). We aim to provide information and analyses to meet the needs of the agricultural community with an objective to increase and sustain agricultural productivity in St. Vincent and the Grenadines (SVG), through dissemination of weather and climate information. Our office will endeavour to produce four bulletins per year. One each at the start of the wet/dry seasons, and one each in early September and early March with special focus on our farming communities. As mentioned in our 2011 midyear bulletin, prepared at the start of the official wet season, rainfall amounts across the islands may vary depending on geographical location and microclimates.

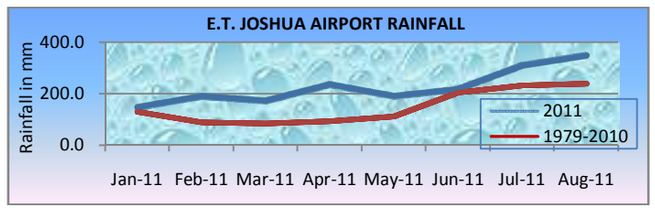
WEATHER SUMMARY JUNE TO EARLY SEPTEMBER

Late in the first month of the hurricane season-June; tropical storm Arlene formed in the Atlantic basin. Then in the month of July, three named storms formed, this was well above the long term (1944-2010) average of one storm for July.

SVG felt the effects of a strong tropical wave with an associated low pressure which approached the region on the 31st July 2011. The weather conditions deteriorated from about 2pm on the afternoon of Sunday 31st July 2011. That afternoon, conditions were conducive for dramatic cloud formations, such as funnel clouds, as one was seen from the Grenadine island of Canoaun. On emancipation day-Monday 1st August, the strong tropical wave which appeared separate from the associated low pressure area; dumped a significant amount of rainfall, island wide. At the E.T. Joshua Airport- Arnos Vale, over 6 inches of rainfall was recorded. There were floods and landslides island-wide. The low pressure area was named Tropical Storm Emily on Monday 1st August 2011, at 7:30pm as it continued across the island chain passing north of SVG. Another tropical wave crossed the islands on Tuesday 2nd into Wednesday 3rd August 2011. Rainfall recorded at the E.T. Joshua Airport from the 31st July 2pm to 3rd August 2pm was 238.2mm~9.4 inches.

On the 19th August 2011, we closely monitored two disturbances in the Atlantic Ocean. On the 20th August 2011, the nearer system had its leading edge pushing clouds over some of the island chain including SVG. The system was named Tropical Storm Irene as it edged near Dominica and Guadeloupe. She became major Hurricane Irene, but downgraded before impacting the United States east coast. On the 24th August, as a week feeder band from Irene was still affecting the islands, a funnel cloud was seen off the north-east coast in the Georgetown area. Funnel clouds were also seen in the Grenadine islands of Union and Canouan. Seven named storms and a depression formed in the Atlantic basin in the month of August. The number of named storms for August was well above the long term (1944-2010) average of four storms...but the number of Hurricanes was below average. On the 2nd September, Katia passed to the north-east of the Lesser Antilles, generating large swells on the northeastern and east coast of St. Vincent. She further developed to be the second major hurricane of the season. Eyes are now on depression fourteen east of the island chain... is it Maria?

RAINFALL AND TEMPERATURE



	1979-2010 Average Rainfall (mm)	2011 Rainfall
Jan	130.0	147.7
Feb	89.0	190.8
Mar	83.5	171.9
Apr	92.8	236.7
May	111.0	190.4
Jun	204.2	218.5
Jul	232.0	310.9
Aug	238.4	349.3

As predicted in the July seasonal forecasts, our records for 2011 so far, show rainfall amounts continue to exceed the (1979-2010) monthly averages since the coin turned in April 2010. See Table at left.

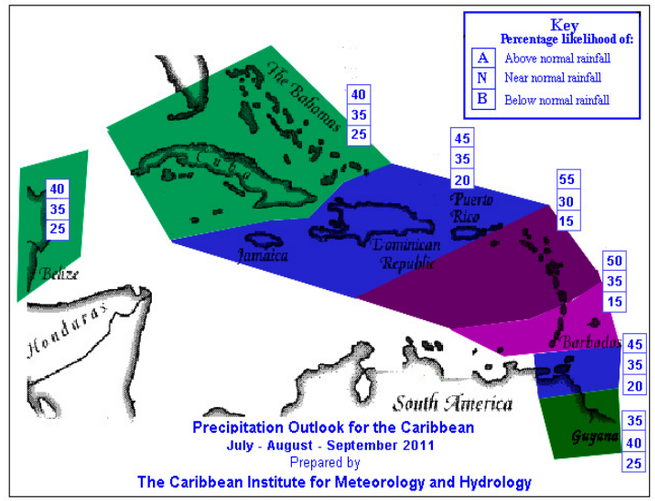
Temperature records show above normal maximum and minimum temperatures since May. A gradual warming is evident and this is reflected in the records. See Table below.

MONTH	1979-2010 Ave. Max.Temp	2011 Max.Temp	1979-2010 Ave. Min.Temp	2011 Min.Temp.
January	30.1	30.7	21.2	21.7
February	30.2	29.8	21.1	22.9
March	30.5	30.5	21.2	20.6
April	31.2	31.2	22.1	21.8
May	31.6	32.6	23.1	24.4
June	31.6	32.1	23.0	23.1
July	31.7	32.2	23.0	23.2
August	32.0	32.8	22.9	24.4

SEASONAL FORECAST - JULY TO DECEMBER 2011

According to the Precipitation Outlook for the Caribbean prepared in July, by the **C**aribbean **I**nstitute for **M**eteorology and **H**ydrology (CIMH); there was high certainty that the eastern Caribbean, will have above normal rainfall. **S**ea **S**urface **T**emperatures (SST) were expected to be above normal in the majority of the Caribbean except in the vicinity of The Bahamas and Cuba. The SST anomalies are particularly highest in the southern portion of the eastern chain. Ambient temperatures (2m near the earth's surface) are also expected to be above normal across the Caribbean basin, particularly in the region of the eastern portion of the chain.

El **N**ino **S**outhern **O**scillation (ENSO) neutral conditions currently exist in the Pacific, with SST being near-normal in the central and east central Pacific. These conditions are expected to continue throughout the summer period. There is less certainty in the state of ENSO beyond the summer period. There is however, still some semblance of lingering La Niña-like effects.



OUTLOOK - JULY TO DECEMBER 2011

The above normal SSTs are likely to continue until the end of 2011, with some decrease in the anomaly in the second half of the period. Since ambient temperatures are expected to be above normal, this could mean heat stress particularly for livestock. Similarly, as the rainfall should continue to be above normal, with smaller anomalies as we approach the end of 2011, water logging of fields may result if maximum drainage is not done.

ATLANTIC HURRICANE PEAK-SEASON APPROACHES

National Oceanic and Atmospheric Administration (NOAA) Climate Prediction Center (CPC) issued its updated 2011 Atlantic hurricane season outlook raising the number of expected named storms from its pre-season outlook issued in May.

"The atmosphere and Atlantic Ocean are primed for high hurricane activity during August through October," said Gerry Bell, Ph.D., lead seasonal hurricane forecaster at the Climate Prediction Center. "Storms through October will form more frequently and become more intense than we've seen so far this season."

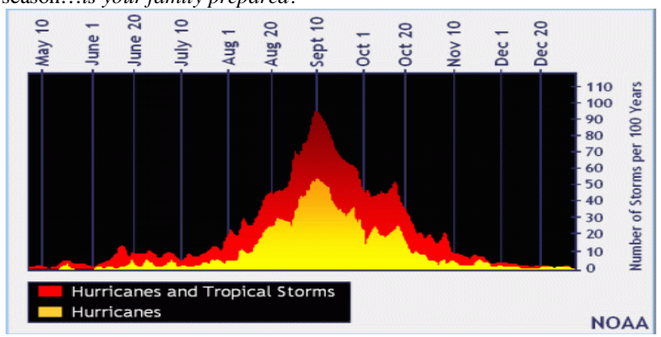
The higher confidence of an above-normal season is based on several factors. These include: the tropical multi-decadal signal, which since 1995 has brought favorable ocean and atmospheric conditions, leading to more active seasons; exceptionally warm Atlantic Ocean temperatures (the third warmest on record); and the possible redevelopment of La Niña. Reduced vertical wind shear and lower air pressure across the tropical Atlantic also favor an active season. Based on these conditions and on climate model forecasts, the confidence for an above-normal season has increased from **65% to 85%**. NOAA's updated seasonal outlook now projects, with a 70 % probability, a total of:

14-19 named storms including:
7-10 hurricanes of which:
3-5 could be major hurricanes (Category 3, 4 or 5)

Thus far, the Atlantic season which runs from June 1 to November 30, has already produced twelve storms; including two hurricanes. They are: Arlene, Bret, Cindy, Don, Emily, Franklin, Gert, Harvey, Irene, Jose, Katia, and Lee. Tropical storms Irene and Katia further developed into major hurricanes.

In the event that more than 21 cyclones form, additional cyclones will take names from the Greek alphabet. e.g. Alpha, Beta etc.

Based on past records, the peak of the season is from mid-August to late October. However, deadly hurricanes can occur anytime in the hurricane season…*is your family prepared?*



OCCURANCES OF THE SUN, MOON, SEAS, AND EARTH

- Sunrise time continues to occur later in the morning, nudging nearer to 6am by the end of October, as sunset time continues to be earlier nudging closer to 6pm by late September.
- There is an abundance of rainfall in our region this year; farmers should focus on harvesting rainfall to be used in times of below normal rainfall. It can serve to irrigate crops and provide for livestock. In the event of a disruption in regular water supply, rain-water saves a lot of sense (*cents)*

Maximum Temperature	35.6 ^{o}C (July1979); 34.5 ^{o}C (July 1980)
Minimum Temperature	17.5 ^{o} C (March 2001)
Highest Yearly Rainfall	3029.5 mm (2010)
Lowest Yearly Rainfall	1594.1 mm (1997)
Highest Monthly Rainfall	727.9 mm (October 1998)
Lowest Monthly Rainfall	2.7 mm (February 2010)
Highest Daily Rainfall	236.5 mm (3rd August 2004)
Lowest Relative Humidity	38% (11th February 1998)

New Moon	**First Quarter**	**Full Moon**	**Last Quarter**
September27	September 4	September 12	September 20
October 26	October 4	October12	October 20
November25	November 2	November10	November 18
December 24	December 2	December10	December 18

- Since around May this year, lines of seaweed have been seen off the eastern and southern coastlines which eventually wash ashore. The seaweed originates in the Sargasso Sea; a region in the middle of the North Atlantic Ocean. The seaweed, has many uses as it is rich in nutrients, specifically nitrogen and potash, and makes great compost-saves a lot of sense (*cents).*
- An earthquake was felt at approximately 12:01 am on the 7th August 2011. It occurred 44 miles east south east of St. Lucia, at a depth of 23.6 miles. The magnitude 5.0 earthquake occurred to the east of Saint Lucia. Initial estimates from the US Geological Survey locate the epicenter of the event at 13.84ºN, 60.31ºW. Smaller events have since occurred in relatively close proximity, with a Magnitude 4.5 aftershock occurring on 8 August, 2011 at 10:42am and also a Magnitude 4.4 event to the east of Dominica on 9 August, 2011 at approximately 1:00am.

Visit E.T. Joshua Airport Meteorological Office website at www.meteo.vc. Office number: 4584011 ext. 229.
Visit the Caribbean Institute for Meteorology and Hydrology at http://www.cimh.edu.bb/precipoutlook.html
Visit the National Hurricane Center (NHC) at weather.gov and on Face book at http://www.facebook.com/US.NOAA.NationalHurricaneCenter.gov

E.T. JOSHUA AIRPORT METEOROLOGICAL OFFICE FARMERS BULLETIN No.1

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Prepared by the E.T. Joshua Airport Meteorological staff.