

Issue: 58
November, 2017

Hydrometeorological Service of Guyana

Farmer's Monthly Weather Bulletin

This bulletin is prepared by the Hydrometeorological Service of Guyana. We welcome feedback, suggestions and comments on this bulletin. Correspondences should be directed to: The Chief Hydrometeorological Officer (Ag), and the Agronomist.



HIGHLIGHTS

- Guyana was classified as Moderately Dry (MD) for the month of October 2017 with an average of 121.9mm of rainfall with 10 rain days.
- The highest one-day rainfall total was recorded at Bushlot, Region 5 with a value of 140.3mm of rainfall on October 21, 2017.
- Regional classification for the month showed that Region 3 recorded the highest mean rainfall of 199.9mm with 13 rain days.
- Lethem, Region 9 recorded the highest daily temperature of 36.0 °C on October 29 and 30, 2017.
- Kamarang, Region 7 recorded the lowest daily temperature of 19.6 °C on October 1, 2017.
- Northern Guyana is expected transition into its secondary rainfall season in the month of November.
- Normal to above-normal rainfall conditions predicted for November 2017 through January 2018.
- Normal to above-normal temperature conditions predicted for November 2017 through January 2018.
- ENSO Alert System Status: La Niña Watch



Rainfall Summary for October 2017

Guyana was classified as Moderately Dry (MD) for the month of October, with an average of 121.9mm rainfall with 10 rain days. The highest monthly rainfall was recorded at Boerasire W.C.D, Region 3 with a total of 299.3mm of rainfall with 13 rain days. The lowest monthly rainfall total was recorded at Crabwood Creek, Region 6 with a value of 46.2mm of rainfall with 7 rain days. Most stations recorded rainfall amounts above their long-term averages (Figure 1).

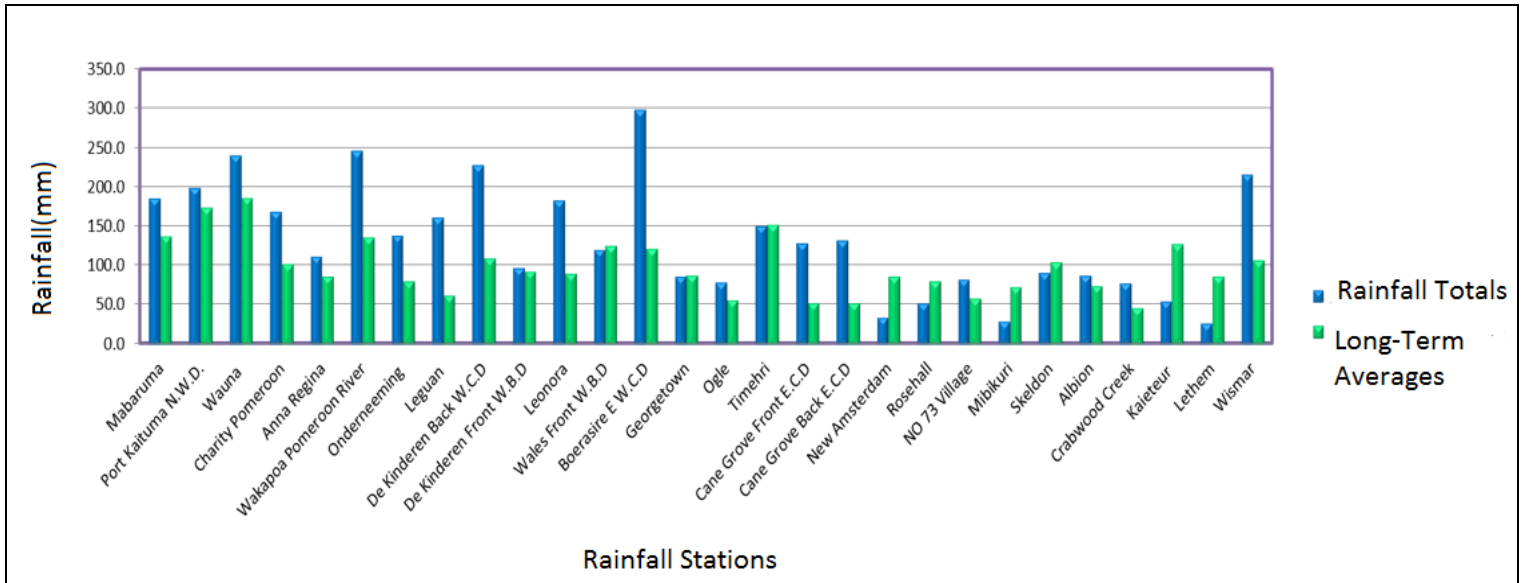


Figure 1: Comparison of the accumulated rainfall and the long-term averages of selected stations for October 2017.

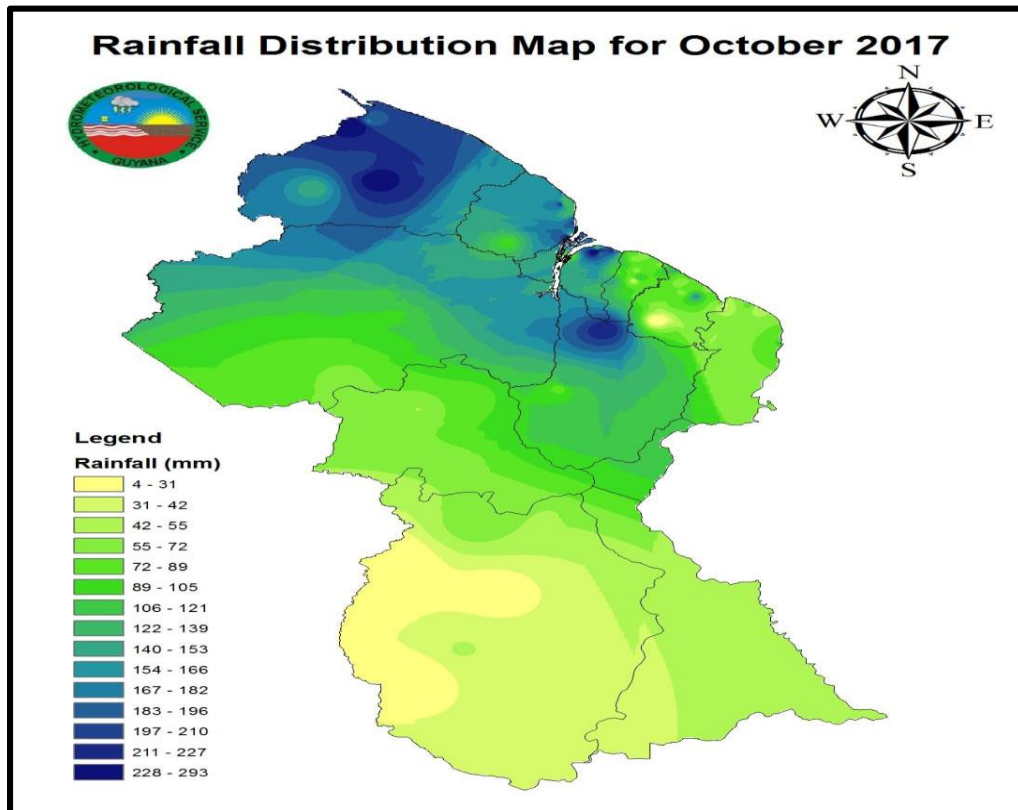


Figure 2: Rainfall Distribution Map for October 2017.

Table 1: Classification of Regional Average Rainfall for October 2017

Regions	Regional Average (mm)	Average Rain days	Classification	Remarks
1	212.5	20 days	Wet (W)	Wauna White Water recorded 264.6mm of rainfall with 22 rain days.
2	155.6	14 days	Moderately Wet (MW)	Supenaam Forestry recorded 263.8mm of rainfall with 13 rain days.
3	199.9	13 days	Moderately Wet (MW)	Fort Island Essequibo recorded 333.5mm of rainfall with 17 rain days.
4	86.7	9 days	Dry (D)	Timehri recorded 150.5mm of rainfall with 12 rain days.
5	81.7	7 days	Dry (D)	Bushlot recorded 169.4mm of rainfall with 4 rain days.
6	63.1	4 days	Dry (D)	Springland Forestry recorded 95.1mm of rainfall with 5 rain days.
7	169.3	15 days	Moderately Wet (MW)	Dagg Point recorded 303.4mm of rainfall with 22 rain days.
8	65.4	10 days	Dry (D)	Mahdia recorded 76.1mm of rainfall with 10 rain days.
9	31.2	3 days	Very Dry (VD)	Annai Rupununi recorded 66.1mm rainfall with 4 rain days.
10	169.0	15 days	Moderately Wet (MW)	M ^c kenzie recorded 225.8mm of rainfall with 20 rain days.

Sunshine Hours Summary for October 2017

Lethem, Region 9 recorded the highest monthly mean sunshine of 9.1 hours. The highest one-day sunshine of 11.2 hours was recorded at Timehri, Region 4 on October 27, 2017. Timehri also recorded the lowest mean sunshine of 6.7 hours. All stations except for Timehri recorded mean sunshine hours above their long-term averages (Figure 3).

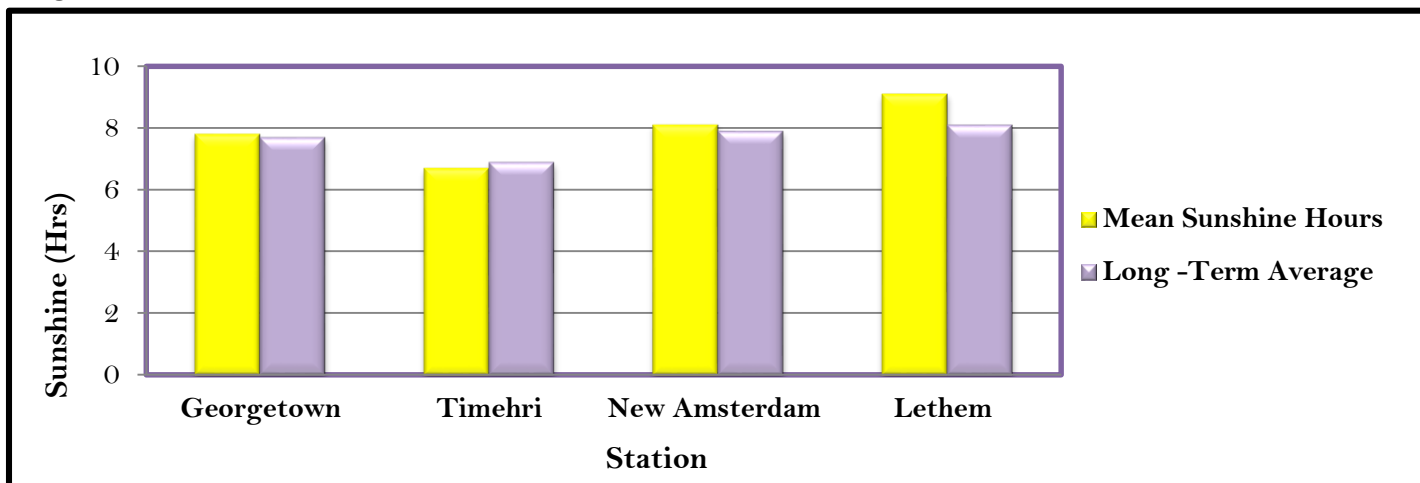


Figure 3: Comparison of the mean sunshine hours and the long-term averages of selected stations for October 2017.

Temperature Summary for October 2017

For the month of October, the highest one-day maximum temperature was recorded at Lethem, Region 9 with a value of 36°C on October 29 and 30, 2017. This station also recorded the highest mean maximum temperature of 34.7°C for the month. Georgetown, Region 4 recorded the highest mean minimum temperature of 25.4°C. Kamarang, Region 7 recorded the lowest daily temperature of 19.6°C on October 1, 2017. All stations analyzed recorded mean maximum temperatures above their long-term averages (Figures 4 & 5).

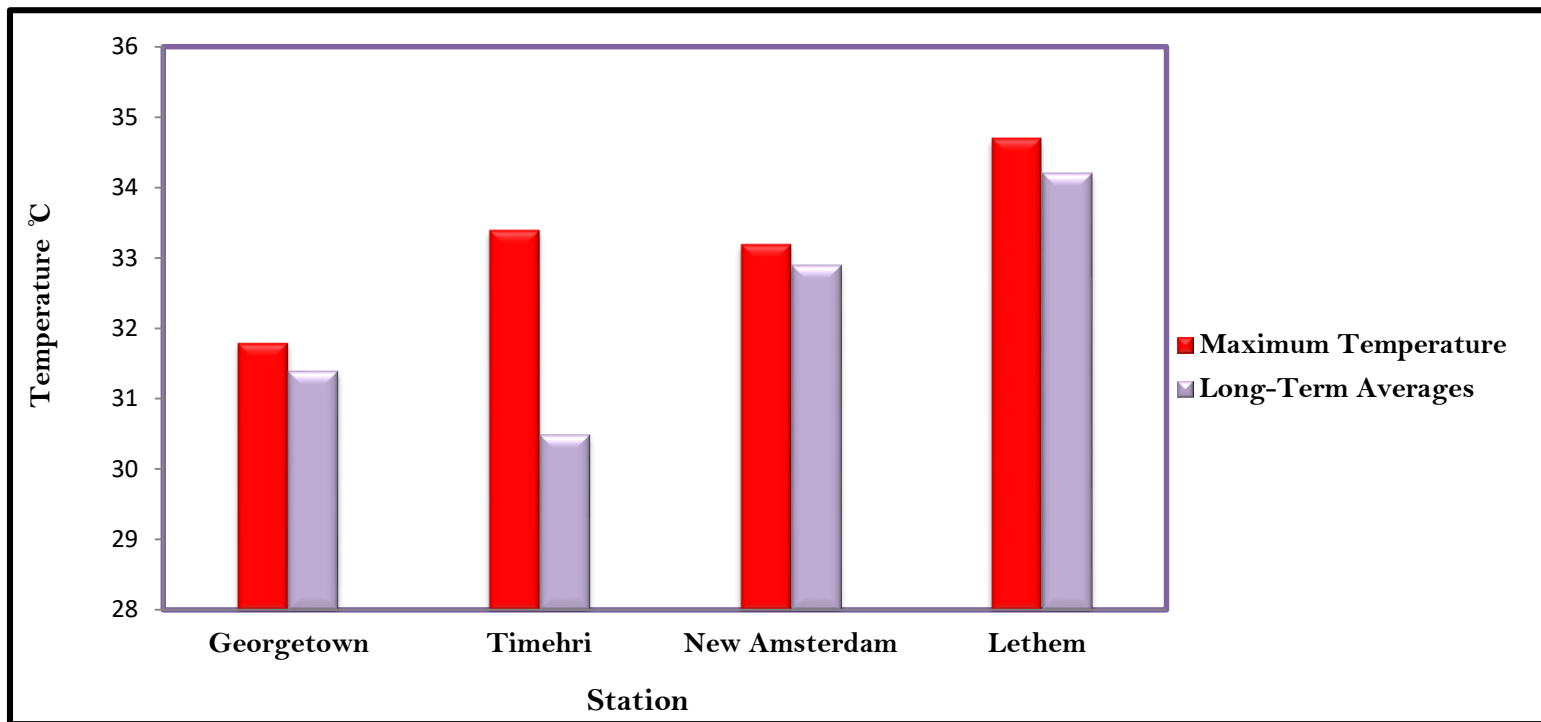


Figure 4: Comparison of the long-term averages and mean maximum temperatures of selected stations for October 2017.

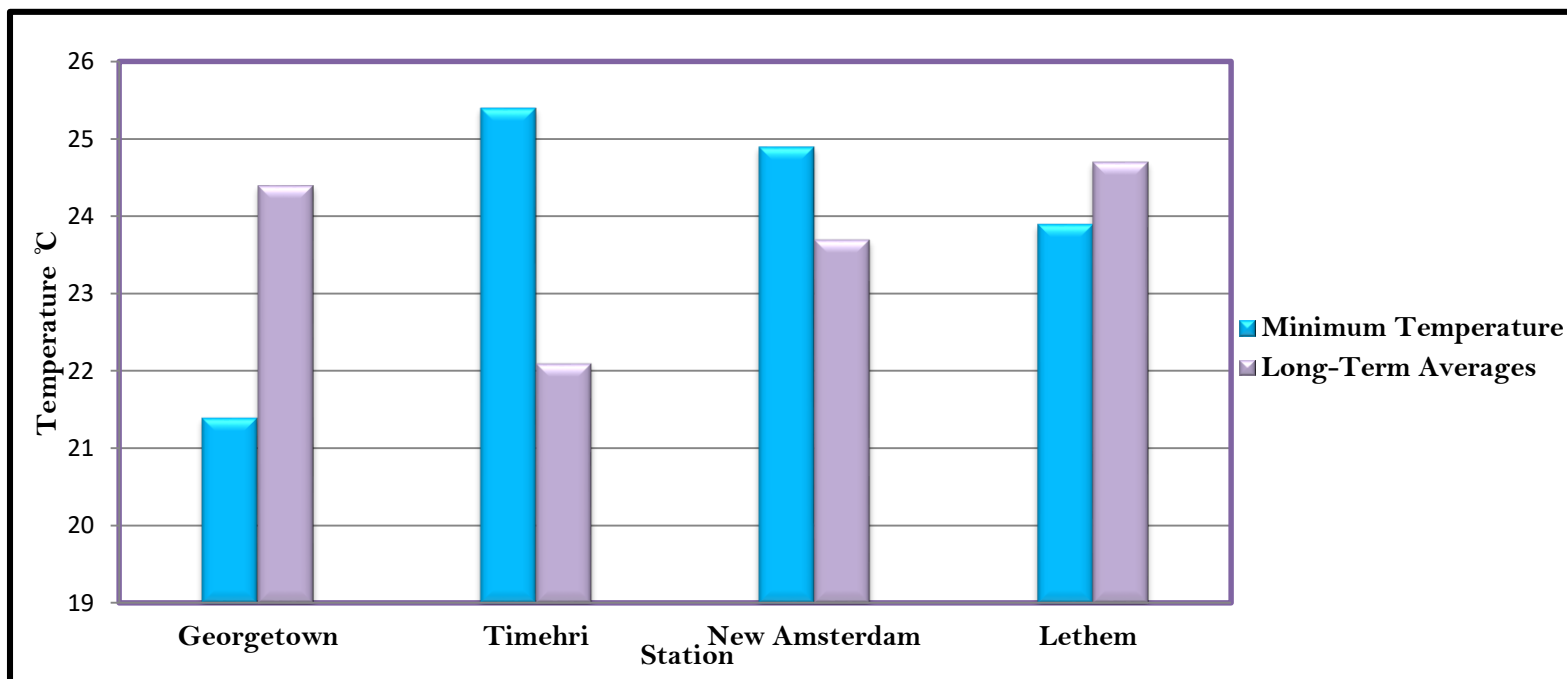


Figure 5: Comparison of the long-term averages and mean minimum temperatures for selected stations for October 2017.

Evapotranspiration (ET_O) Totals of selected stations for October 2017

Lethem, Region 9 recorded the highest average daily evapotranspiration of 3.14mm along with the highest one-day evapotranspiration of 15.77mm on October 30, 2017. Georgetown, Region 4 recorded the lowest daily average evapotranspiration of 6.21 mm, while Timehri, Region 4 recorded the lowest one-day evapotranspiration with a value of 2.19 mm on October 2, 2017. A comparison can be seen in Figure 6.

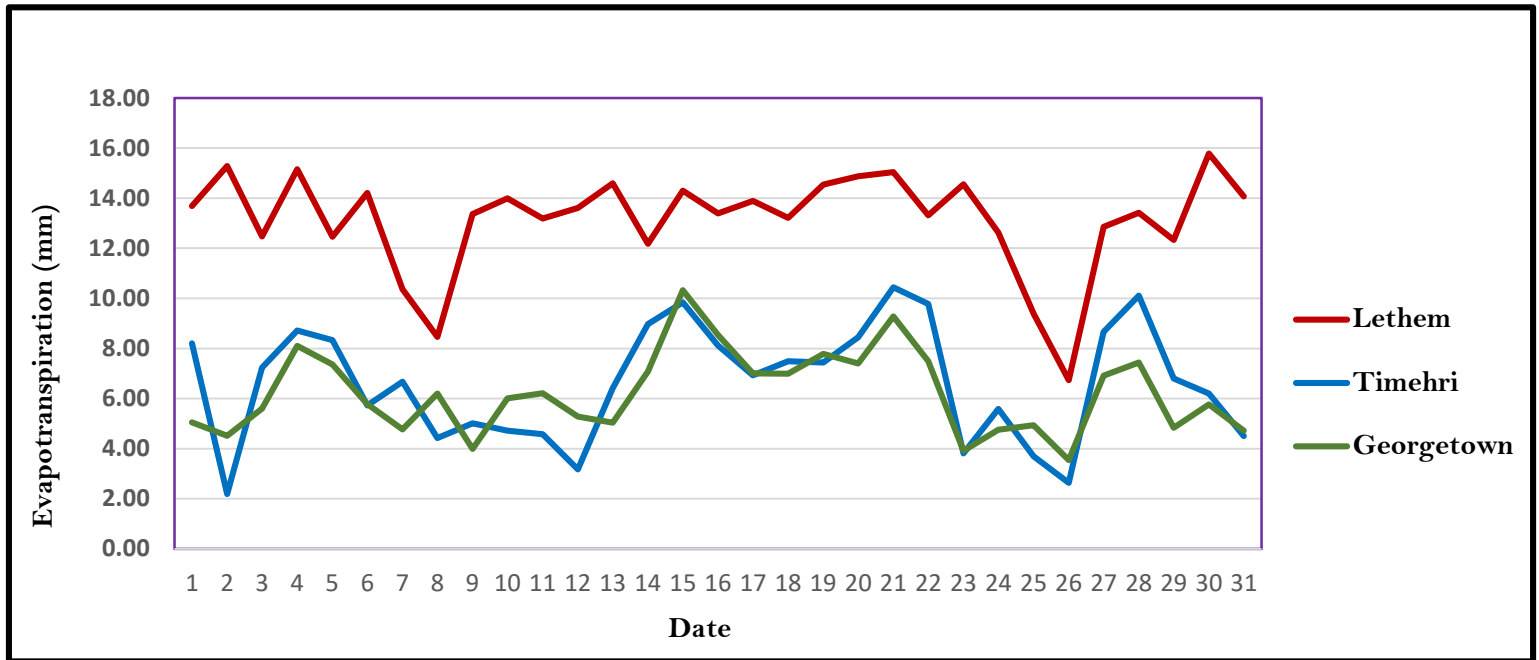


Figure 6: Comparison of the Reference Evapotranspiration of selected stations for October 2017.

Note: The calculated average of the evapotranspiration is a method of Penman-Monteith, which assumes an unlimited water supply, depends on temperature, relative humidity, the wind, and generally provides a better representation of crop-water losses and requirements. Evapotranspiration is the rate at which readily available soil water is vaporized from specified vegetated surfaces. Evapotranspiration is commonly used to describe two processes of water loss from land surface to atmosphere, evaporation and transpiration.

Drought Summary for August to October 2017

For the 3-month Standardized Precipitation Index (SPI), most stations recorded near-normal rainfall. Analysis showed that Wales, Cane Grove, and Leonora recorded moderately wet conditions. Additionally, Skeldon and Uitvlugt recorded abnormally wet conditions.

Drought Outlook for November 2017: Northern Guyana is expected to transition into its secondary rainfall season of 2017. Thus there is no drought concern for this area.

Table 2: The Standardized Precipitation Index for selected stations

Station Name	3 Month SPI Values (August - October)
Georgetown	-0.34
Uitvlugt	0.57
Wales	0.88
Enmore	0.39
Timehri	0.80
Rose Hall	-0.48
Albion	-0.32
Skeldon	0.58
Blairmont	0.10
New Amsterdam	0.24
Cane Grove	0.88
Leonora	0.84

Table 3: The Standardized Precipitation Index (SPI) Classification Categories

SPI Values	Classification
0 to -0.4	Near Normal
-0.5 to -0.7	Abnormally Dry
-0.8 to -1.2	Moderately Dry
-1.3 to -1.5	Severely Dry
-1.6 to -1.9	Extremely Dry
-2.0 or less	Exceptionally Dry
0 to 0.4	Near Normal
0.5 to 0.7	Abnormally Wet
0.8 to 1.2	Moderately Wet
1.3 to 1.5	Severely Wet
1.6 to 1.9	Extremely Wet
2.0 or more	Exceptionally Wet

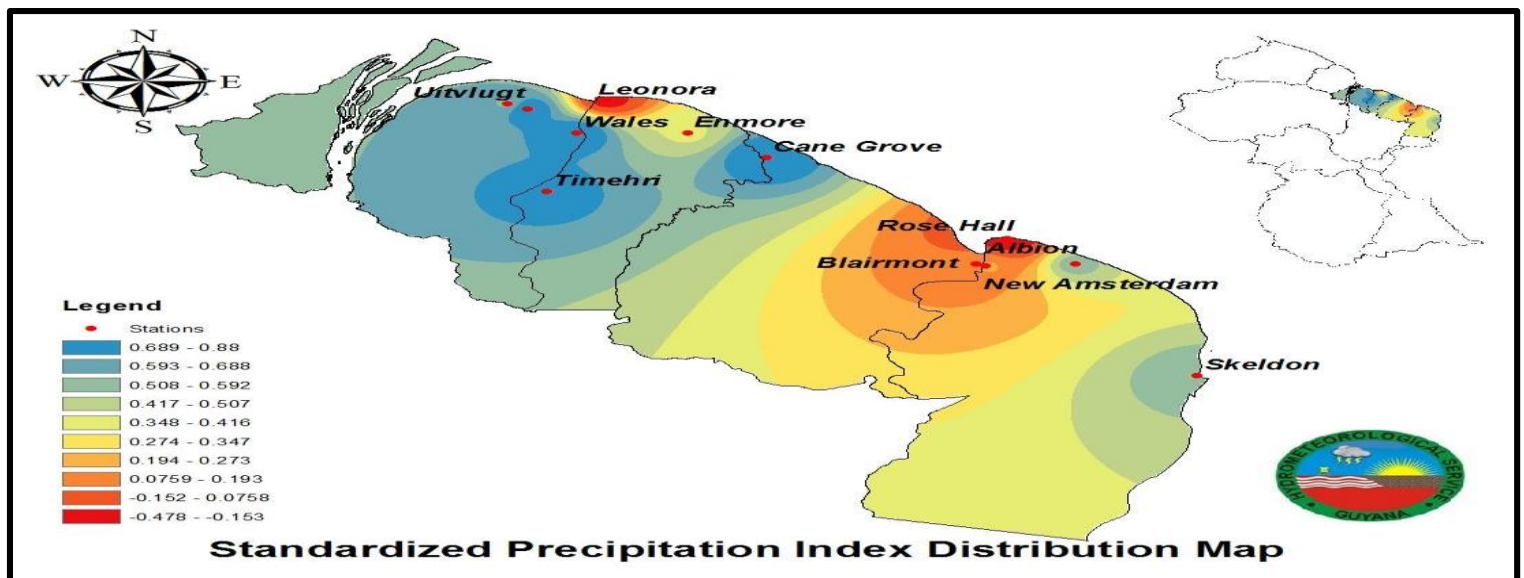


Figure 7: The Standardized Precipitation Index (SPI) of selected stations for August to October 2017.

Seasonal Outlook for Guyana (November 2017 -January 2018)

Climatologically Northern Guyana is expected to transition into its secondary wet season which is forecasted to begin during the month of November 2017. Based on historical records, this season is expected to conclude by mid-February, 2018; while Southern Guyana's dry season is expected to continue until mid-April 2018. The latest forecast indicates that Guyana is likely to experience normal to above-normal rainfall and temperature for this period. The likelihood of heavy downpours is expected to increase during this period.

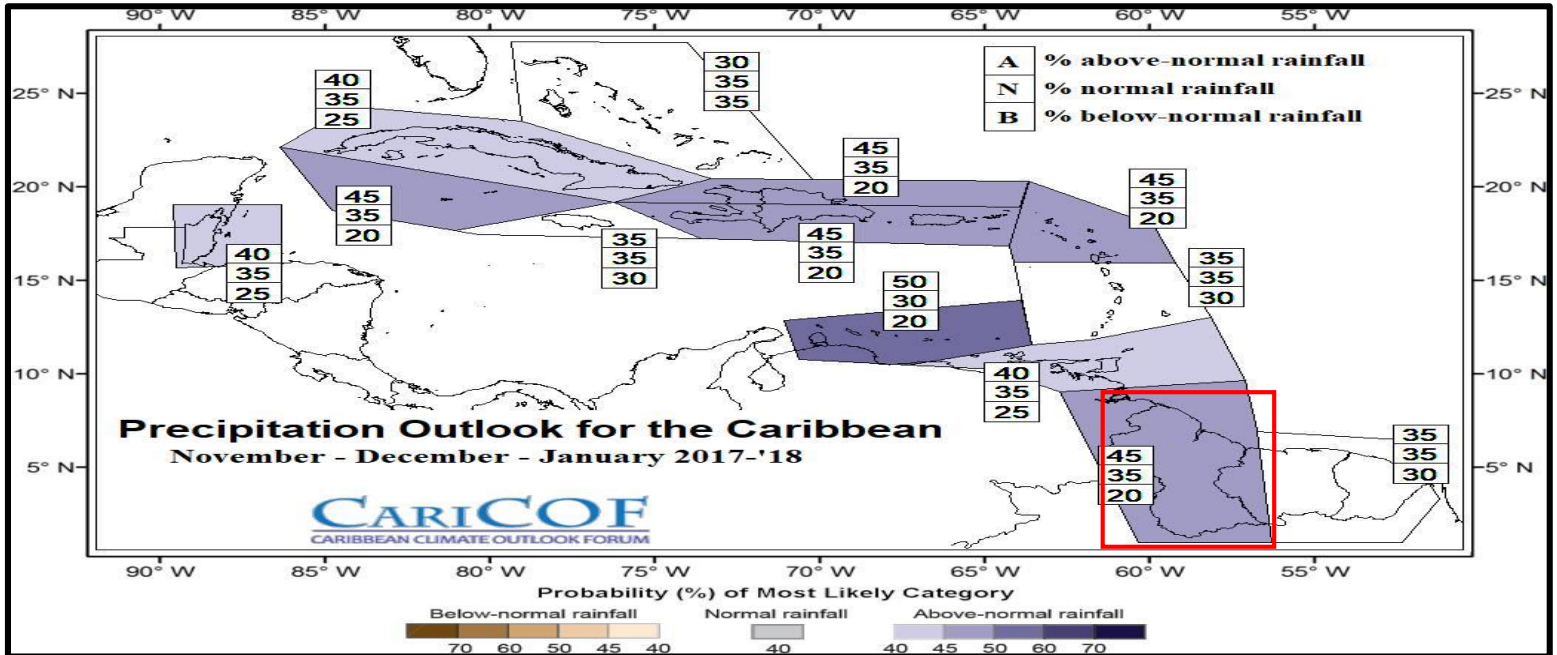


Figure 8: Precipitation forecast map for November 2017 -January 2018 showing the probabilities of above Normal (A), Normal (N) and Below Normal (B) rainfall for Guyana within the context of the Caribbean.

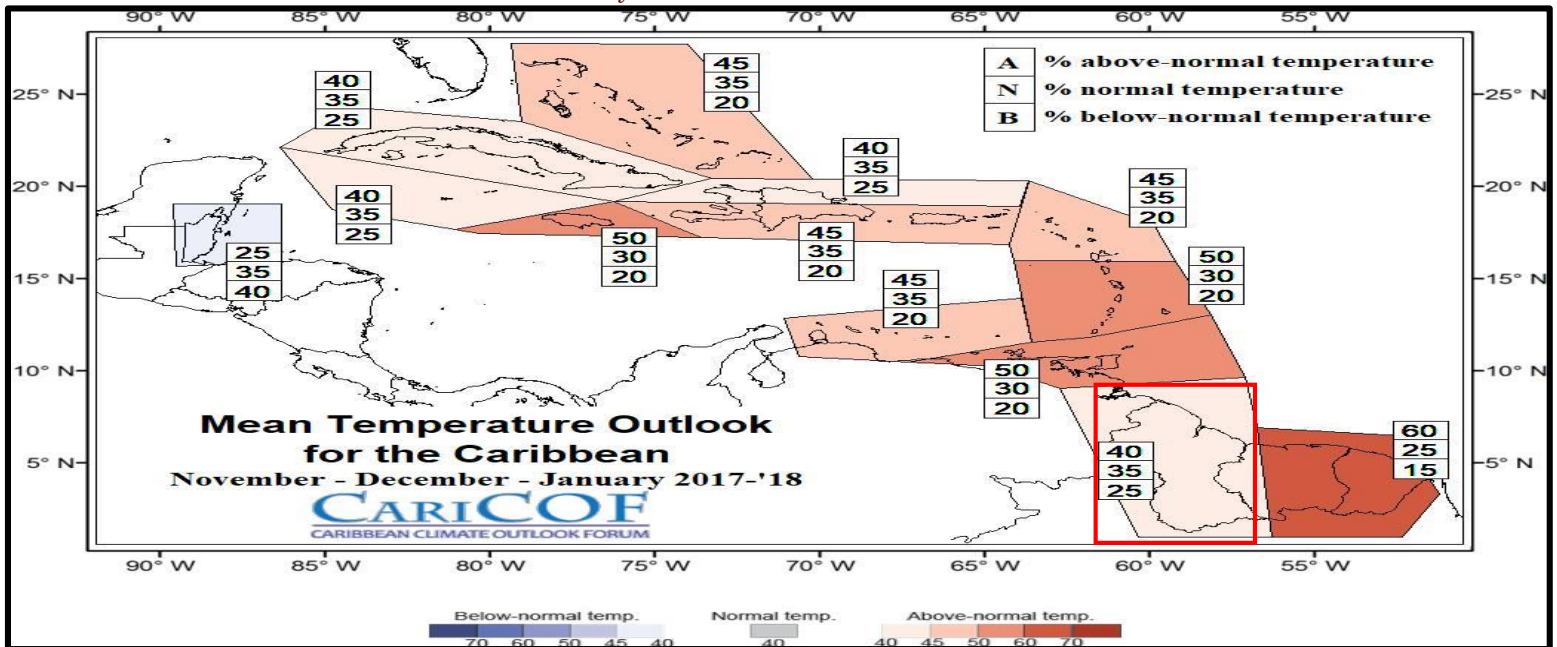


Figure 9: Mean temperature forecast map for November 2017 -January 2018 showing the probabilities of Above-Normal (A), Near-Normal (N) and Below-Normal (B) temperature for Guyana within the context of the Caribbean.

Table 4: Historical average rainfall of selected rainfall stations

Region	Station	Nov	Dec	Jan	Region	Station	Nov	Dec	Jan
1	MABARUMA *			183.0	5	BLAIRMONT	97.8	184.8	184.8
		210.2	246.9						
2	WAUNA	212.0	245.3	177.8	6	MARDS	116.1	197.3	197.3
	PORT KAITUMA	190.4	270.8	162.8			ALBION	29.2	167.8
2	ANNA REGINA *	182.3	283.4	286.0	6	SKELDON	114.7	147.9	147.9
	CHARITY			265.6			CRABWOOD		
3		212.6	285.5		6	CREEK*	92.3	111.5	
	Mc NABB	185.0	247.3	219.5			ROSE HALL	84.2	203.4
3	WAKAPOW			266.6	6	NIGG 58	84.9	163.7	163.7
		212.8	342.5						
3	ONDERNEEMING	141.5	225.9	197.0	6	ALBION 33	60.4	166.8	166.8
	BOERSARIE	205.2	345.8	301.8			#73 VILLAGE	101.7	165.4
3	DeKENDEREN B	197.9	325.2	270.6	6	# 54 VILLAGE*	79.4	125.9	125.9
	DeKENDEREN F	158	302.2	262.0			ANKERVILLE	77.4	175.1
3	LEONORA F	156.3	265.2	238.2	6	MIBIKURI	95.4	166.9	166.9
	LEONORA B						MARA LAND DEV. SCHEME*	95.1	128.5
3		163	282.5	282.6	6	NEW AMSTERDAM	94.7	180.6	180.6
	WALES	171.7	238.5	231.4		7	APAIKWA	190.9	299.6
4	UITVLUGT B	143.9	257.7	253.8	7		MAZARUNI		
	La BAGATELLE LEGUAN*	113.2	205.6	199.3				171.7	183.6
4	GEORGETOWNN	175.9		239.7	7	BARTICA DEM. STATION*			172.4
			270.9					139.8	172.4
4	TIMEHRI	181.6	258.3	239.9	8	JAWALLA	175.7	167.4	167.4
	CANE GROVE B			168.0			KAIETEUR FALLS *	****	414.1
4		90.8	199.1		9	LETHEM	33.8	17.2	17.2
	CANE GROVE F	120	214.7	189.5			KARASABAI	9	6.7
4	L.B.I FRONT	140.5	246.3	189.2	10	DADANAWA	57.5	34.9	34.9
	OGLE FRONT	136.7	222.6	194.6			GREAT FALLS	152.5	199.1
4	ENMORE FRONT	127.8	268.2	204.3	10	WISMAR*	107.3	139.4	139.4
	KAIRUNI*	130.7	121.6	****					

The historical averages for various stations were calculated by the use of rainfall data from the year 1981- 2010 (climatological normal). Stations, where less than 30 years of observations were used, are denoted with *.

Table 5: Average rain days for the months November-January for selected stations

Station Name	November	December	January
Mabaruma	17 days	18 days	16 days
Anna Regina	10 days	14 days	3 days
Leonora	12 days	18 days	16 days
Georgetown Botanical Gardens	12 days	18 days	15 days
Timehri Meteorological Station	14 days	11 days	17 days
Ogle	11 days	17 days	13 days
Blairmont	8 days	16 days	15 days
New Amsterdam	9 days	16 days	14 days
Kamarang	14 days	21 days	19 days
Lethem	3 days	4 days	12 days
McKenzie	13 days	17 days	16 days
Ebini	10 days	16 days	15 days

Note: A rain day is considered as a day with rainfall ≥ 1 mm.

Table 6: Average wet days for the months November-January for selected stations

Station Name	November	December	January
Mabaruma	11 days	12 days	9 days
Anna Regina	7 days	10 days	8 days
Leonora	7 days	11 days	9 days
Georgetown Botanical Gardens	7 days	11 days	9 days
Timehri Meteorological Station	8 days	12 days	11 days
Blairmont	5 days	10 days	8 days
New Amsterdam	5 days	10 days	8 days
Kamarang	7 days	12 days	10 days
Lethem	1 day	2 days	1 day
McKenzie	8 days	11 days	10 days
Ebini	6 days	9 days	8 days

Note: A wet day is considered as a day with rainfall ≥ 5 mm.

Table 7: SPRING TIDE TABLE FOR NOVEMBER, 2017

SPRING TIDE ≥ 2.74(m)		
Dates	Time	Height(m)
2017/11/01	01:43	2.77
	13:58	2.86
2017/11/02	02:28	2.91
	14:36	3.04
2017/11/03	03:13	3.02
	15:15	3.17
2017/11/04	03:59	3.08
	15:54	3.25
2017/11/05	04:45	3.08
	16:35	3.27
2017/11/06	05:31	3.03
	17:18	3.21
2017/11/07	06:21	2.92
	18:04	3.09
2017/11/08	07:13	2.77
	18:55	2.93
2017/11/09	19:56	2.75
2017/11/13	13:01	2.75
2017/11/14	13:47	2.87
2017/11/15	14:26	2.95
2017/11/16	02:28	2.75
	15:02	2.98
2017/11/17	03:08	2.78
	15:34	2.98
2017/11/18	03:45	2.78
	16:06	2.95
2017/11/19	04:20	2.76
	16:36	2.91
2017/11/20	17:06	2.85
2017/11/21	17:36	2.77
2017/11/30	13:20	2.84

Spring Tides Tables are provided by the Maritime Administration Department



18th New moon



26th First quarter



04th Full moon



10th Last quarter

Lunar calendar for November 2017

Agricultural Review for October 2017

For the month of October, there were no reports of significant effects caused by the weather on Agricultural production.

Farmer's Note for November 2017

Near-normal to above-normal rainfall and temperature are expected in the month of November. Thus, farmers are encouraged to take heed of the advisories from their regional agriculturists or extension officers and to be vigilant and follow the Hydrometeorological Service's daily and three-day forecasts via the radio on 56.0 AM and on our website at www.hydromet.gov.gy.

- **Northern Guyana** is expected to transition into its secondary rainfall season the following points should be noted:
- **A gradual increase in days with rain is expected over the next few months.**
- **Downpours are expected to increase which may lead to flooding in flood-prone areas.**

Farmers in **Southern Guyana** should note that they are still in their secondary dry season thus, water conservation exercise such as mulching, watering the early mornings or evening is recommended.

Advice for Crop Farmers

Southern Guyana

- Plant crop varieties that can be grown in dry conditions and that are not easily affected by pests and diseases.
- Change the timing of farm operations- adjust sowing and harvesting period to avoid negative effects of dry spells.
- Cultivate shrubs and trees around the fields as part of a crop farming system- this practice assists with the restoration of soil fertility, and at the same time creates a micro-climate to reduce high temperatures in dry periods.

Northern Guyana

- Maintain clean drains around crop beds. This helps water to drain off the land easily thereby reducing the effects of floods.
- Cultivate seedlings under a shaded area.
- Change the timing of farm operation. Adjust sowing and harvesting periods to avoid the negative effects of very wet periods.
- Maintain embankments around fields to protect crops against flooding. Empolder low lying areas and creeks. Plant grass/crops on damns to reduce soil loss.
- Cultivate crop varieties that can be grown well in wet conditions.
- Plant crops on raised beds. This helps to reduce the effects of flooding on plants.
- Store fertilizers on shelves, in an enclosed, dry area away from moisture and water sources.

Advice for Livestock Farmers

- Monitor livestock for pests and diseases- this is an early intervention practice since climate change can increase the incidence of uncertain types of pest and diseases that affect livestock.
- Construct mounts where possible to provide higher grounds for livestock during extremely wet periods.
- Where water is stagnant, create diversion ditches to drain it away from livestock facilities or sheds.
- Always keep cows clean and dry; Cleanliness can be an issue this period but you have no excuse. Coats with dirt and moisture have lower insulation value, making animals more susceptible to cold stress.
- Store animal feeds in a dry place. In particular, hay is likely to get mouldy if wet.

Advice for Aquaculture Farmers

During the rainy season, floods often occur creating unfavorable weather conditions for fish farming: temperature changes during the day and widespread thunderstorms making abrupt changes in the water environment.

Conditions that may occur during the wet season are as follows:

- Abrupt changes in environmental factors and aquaculture pollution causing shocks in farming species and leading them to stop eating, or even death due to infectious diseases.
- Water temperature drops suddenly.
- If the rainwater is acidic or leaches out alum from embankments into ponds, which makes pH in pond drops suddenly.
- Sudden drop in salinity (in brackish water farming).
- Reduction of dissolved oxygen in the water.
- Reduction of alkalinity of water.
- Rainwater and flood water can leach out alum, fertilizers, plant protection chemicals and toxic waste from fields, orchards or residential areas into rivers, canals and farming ponds.
- Rising water level can overflow and destroy embankments.

Fish farmers are advised to work closely with Fisheries Officers and report any issues that they may have.

A few recommended crops for the November to January rainfall season are as follows:

- Corilla
- Cucumber
- Sorrel
- Ginger
- Corn
- Turmeric
- Pumpkin
- Squash
- Muskmelon
- Egg Plant(Boulanger)

Crop of the month: Watermelon

Common Name: *Watermelon*

Scientific Name: *Citrullus lanatus*

Temperature: 22-32°C

Soil pH: 6.0 – 6.8

Introduction

Watermelons refer to both the fruit and plant of a vine-like herb originally from Southern Africa. It is one of the most common types of melons members of the cucurbit family, which also includes cucumbers, pumpkins, squash, zucchini and other gourds.



Description

This flowering plant produces a special type of fruit known by botanists as a pepo, which has a thick rind and fleshy center; pepos are derived from an inferior ovary and are characteristic of the Cucurbitaceae. The watermelon fruit has a smooth exterior rind (green, yellow and sometimes white) and a juicy, sweet, usually red, but sometimes orange, yellow, or pink interior flesh. Dark red fleshed, black seeded varieties are the most popular in the marketplace.

Climate

Watermelon plants love the warmth, and therefore need a warm growing season of at least 70 to 85 days, depending on the variety, to produce sweet fruit. They grow best when daytime temperatures fall between 21 and 26 degrees, and nighttime temperatures fall between 18 and 21 °C.

Insect Pests and Diseases

- Bacterial fruit blotch
- Whitefly
- Powdery mildew
- Thrips

Planting

When planting watermelon, the seeds are usually directly sowed in the garden. Watermelon plants don't tolerate root disturbance very well, so transplanting seedlings usually leads to a high failure rate. Wait until the soil temperatures have warmed to 21°C before planting watermelon. Using a hoe or garden rake, create mounds or hills that are 4 feet across and about 6 inches high. Using the end of a hoe or your finger, make holes in the mounds 1 inch deep and 6-8 inches apart. Place a seed in each hole and cover with loose soil. You will be able to fit 7-8 seeds in each mound.



Health Benefits of Watermelon

- Helps keep you hydrated.
- Contains compounds that may help prevent cancer.
- Can help to improve digestion.

Recommended Varieties

- Sugar Baby
- Charleston Grey
- MickyLee

Fertilizer Recommendation

When fertilizing watermelon plants, use nitrogen-based fertilizer at the onset. Once the plant begins flowering, however, switch to feeding the watermelon a phosphorus and potassium based fertilizer. Watermelons require ample potassium and phosphorus for optimal melon production.

Harvesting/Storage

Firstly, inspect the watermelon and if it has lost its shiny appearance, you're off to a good start. Thump the watermelon and then rap it with your knuckles. If it sounds hollow inside, it's getting close to being ready. Inspect the stem and you should see a spiral coil near the stem of the watermelon. If the coil is brown and dried up, the melon is almost ready to be picked. Inspect the bottom of the watermelon and look at the spot that was lying on the ground. If it's still white, the watermelon isn't ready as yet. If the spot has turned a rich yellow color, go ahead and harvest the melon. After picking watermelons, you should store them in the refrigerator or a cool dry place.



Fun Facts About Watermelon

- Watermelon is 92% water.
- Every part of a watermelon is edible, even the seeds and rinds.
- In China and Japan watermelon is a popular gift to bring a host.

El Niño and La Niña Update

**THE
HYDROMETEOROLOGICAL
SERVICE OF GUYANA**



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(24 hours National Weather
Watch Centre numbers)

Or



ENSO Alert System Status: La Niña Watch

- Sea surface temperatures in eastern tropical Pacific have recently cooled, approaching La Niña levels, while atmospheric patterns have largely remained ENSO-neutral;
- Models surveyed and expert opinion suggest that weak La Niña conditions may develop, with about 50-55% probability, in the final quarter of 2017;
- If La Niña conditions do develop before the end of 2017, they are likely to be weak, and would likely return to ENSO-neutral in the first quarter of 2018;
- Continuation of ENSO-neutral conditions is also a plausible scenario, with 45-50% likelihood;
- Emergence of El Niño can be practically ruled out.

Early-Oct CPC/IRI Official Probabilistic ENSO Forecast

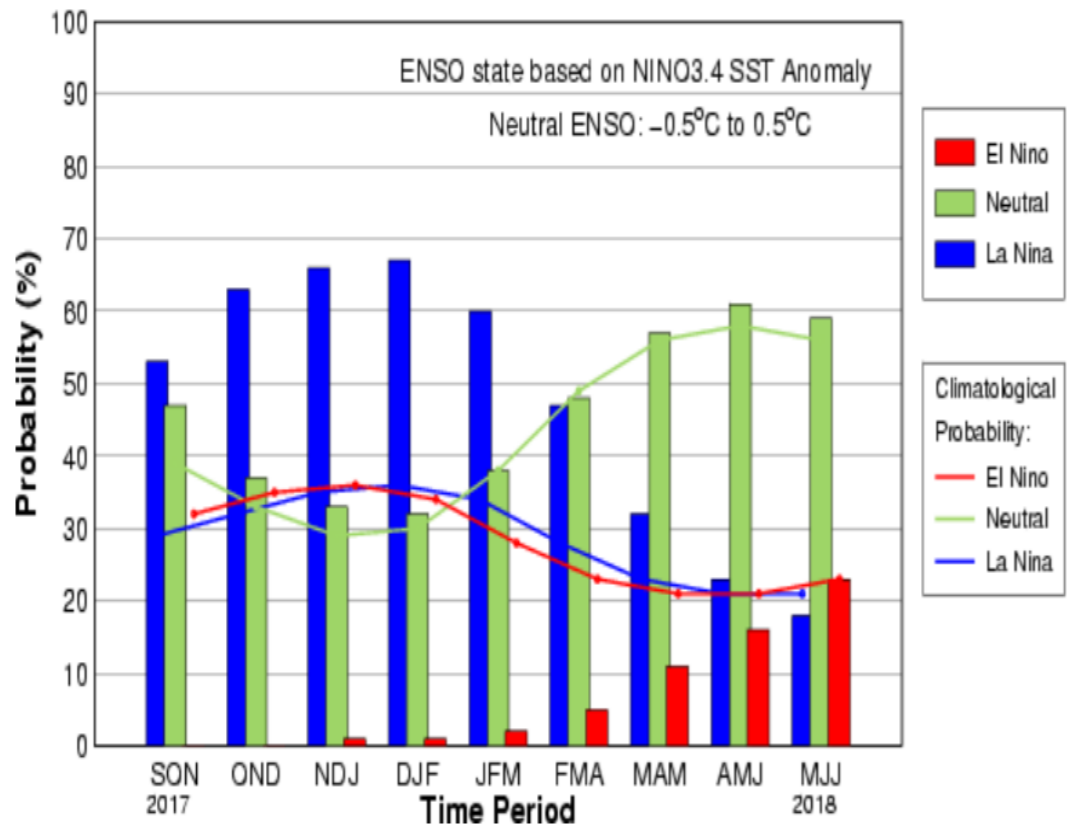


Figure 10: CPC/IRI Early-Month Consensus ENSO Forecast Probabilities