

YEARLY SAVINGS ON SPDC RA FRESHWATER CONSUMPTION (LITRES)

The table below shows the available data for RA water consumption in 2024 as obtained from installed flow meters in all RA substations, It is seen that water consumption in the RA follows the seasonal pattern, reducing with increasing rainfall. This is due to the decreased demand on treated water from the golf course and other negligible sprinklers. It is also known that the golf course is the largest single consumer of water within the RA.

Using the rainfall distribution shown in figures 1 and 2, as a basis for extrapolation of data, we can categorize the months as shown below in the table.

MONTH	VOLUME (L)	PERIODS	DESCRIPTION
JANUARY	109,521,442.00	Peak Months	Months of elevated usage due to very sparse rainfall
FEBRUARY	106,000,744.00		
MARCH	79,554,095.00	Transition Months	Transition period from dry to rainy season. Here demand for additional water is reduced.
APRIL	75,392,290.00		
MAY	63,302,100.00	Baseline Months	These are months with minimal or no additional water usage at the golf course due to frequent rainfalls
JUNE	65,204,220.00		
JULY	62,555,420.00		
AUGUST			
SEPTEMBER			
OCTOBER		Transition Month	Transition period from rainy to dry season. Here demand for additional water is reduced.
NOVEMBER		Peak Months	Months of elevated usage due to very sparse rainfall
DECEMBER			

Avg Peak Month	$(109,521,442 + 106,000,744)/2$	107,761,093.00
Avg Transition Month	$(79,554,095 + 75,392,290)/2$	77,473,192.50
Avg Baseline month	$(63,302,100 + 65,204,220 + 62,555,420)/2$	63,687,246.67
Avg Peak - Avg Transition	$77,473,192.5 - 63,687,246.66$	13,785,945.83
Avg Peak - Avg Baseline	$107,761,093 - 63,687,246.66$	44,073,846.33
Transition Months Volume	$13,785,945.83 \times 3$	41,357,837.50
Peak Months Volume	$44,073,846.33 \times 4$	176,295,385.33

1 Drum of HTH Chlorine (45Kg)	20 Litres	
Chlorine dilution for 65% conc	1 (cl) :154,761 (H2O)	
Chl consumption @ Transition	$90,863,701.5 / 154,761$	267.24
Chl consumption @ Peak	$176,295,385.33 / 154,762$	1,139.15

Drums of chlorine consumed		
Drums of cl @ Transitions Mon	587 / 20	13.36
Drums of cl @ peak Mon	1139.15 / 20	56.96
Total Drums of Cl consumed		70.32
cost of chlorine used/year	70 x \$420	29,534.04

Taking into the cognisance other minute sprinklers used in homes, we can assume total yearly cost from treated water consumed by the golf course to be **\$ 25,000.**

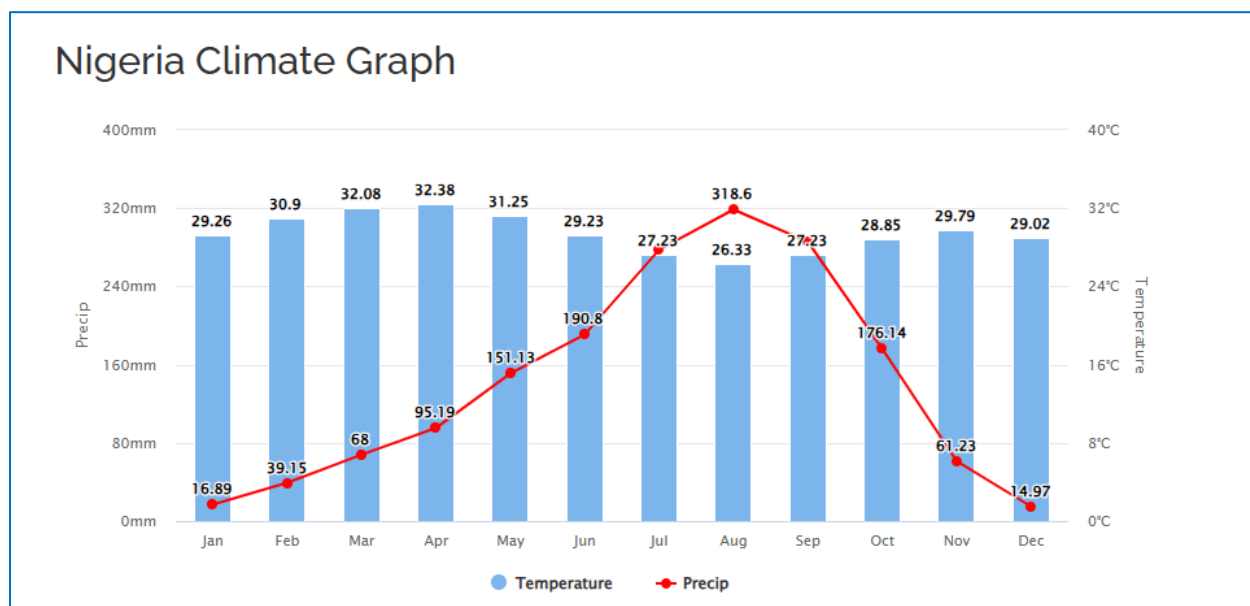


Figure 1: Yearly Precipitation distribution in Nigeria(weatherandclimate.com/Nigeria)

Monthly Climatology of Average Minimum Surface Air Temperature, Average Mean Surface Air Temperature, Average Maximum Surface Air Temperature & Precipitation 1991-2020; Nigeria

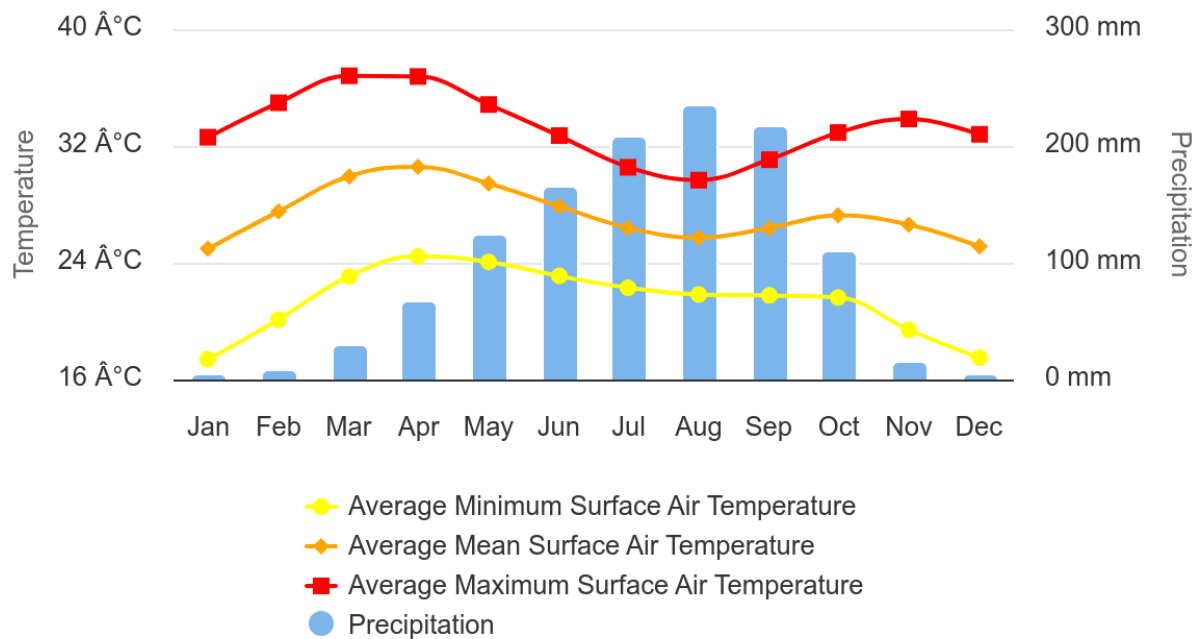


Figure 2: Climatology of Precipitation 1991-2020; Nigeria (climateknowledgeportal.worldbank.org)