1.0 INTRODUCTION

Climate change is increasing the periodicity and intensity of extreme weather events globally. Human anthropogenic activities are known to be one of the major causes of climate change. This bimodal bulletin called Extreme Weather Report captured the high impact weather of December 2021 and January 2022. This two months under review, marked by cold, dry, and dusty north easterly trade wind (Harmattan), which blows from the Sahara over West Africa into the Gulf of Guinea during dry season. As a result of this, the months experienced wide fluctuations in the ambient temperatures of the day and night with drop in relative humidity. The observed temperatures were cold in most places, however, hot in certain places, depending on how moist the area is. The Harmattan season brings variety of adverse weather extremes. The dust haze spells, and cold temperatures observed were all connected to this season.

Exposure to cold can cause hypothermia and is life-threatening. Infants and elderly people are most susceptible. Also, extreme dryness of the air can cause death and injury to livestock and wildlife. The dry wind and very low relative humidity that prevailed during this period supports ignition of fire and increase its outbreak. Cases of fire incident were noticeable to be on the increase during this period, however, few fire reports were captured on this report as follow; three-storey building in Surulere, Lagos on the 1st day of year 2022 represented in fig 2. Also, the largest Lagos wood market, Oko-Baba Sawmill at Ebute Metta, was razed by fire on January 5, 2022, destroying valuables and displacing sawmillers as shown in fig.1. Fire outbreak at the three-storey building in Surulere, Lagos on the 1st day of year 2022 Fig.1 Consequently contributing to fire incidents experienced in many parts of the country.

1.1 Harmattan Haze

Some cities within the country observed thick dust haze which caused visibility impairment. Significant dust spells were observed from December 2021 – January 2022. Three major dust spells occurred on 2nd – 3rd, 6th – 9th and 17th -21st in December reducing horizontal visibility to as low as 200m in the country while January recorded three episodes on 3rd, 5th, and 27th. The resultant effect of this led to loss of millions of Naira by airline operators from cancellation and diversion of flights. Cases of flight cancellations were recorded in some Airport across Nigeria between 27th to 29th of January in Maiduguri, Yola, Sokoto, Kano, Katsina, Zamfara, Gombe and Bauchi because of poor visibility observed over those cities. Daily Trust Newspaper on Friday January 28, 2022, reported that President Muhammadu Buhari cancelled his visit to

Zamfara state because of poor weather that NiMet forecasted for the 28 January, on the increase in dust haze in the north east and North west of the country which will reduce visibility to less than 1000 meters.

Isolated cases of thick dust haze were recorded in Ado-Ekiti, and Nguru with visibility of 500m and 200m respectively. Morning hours fog with impaired visibility were also, reported in some southern cities leading to road transport hitches and its resultant effect. Harmattan weather, contributes to low temperatures observed over some stations as it prevents insolation from reaching the ground. They were low temperature values recorded in December and January.

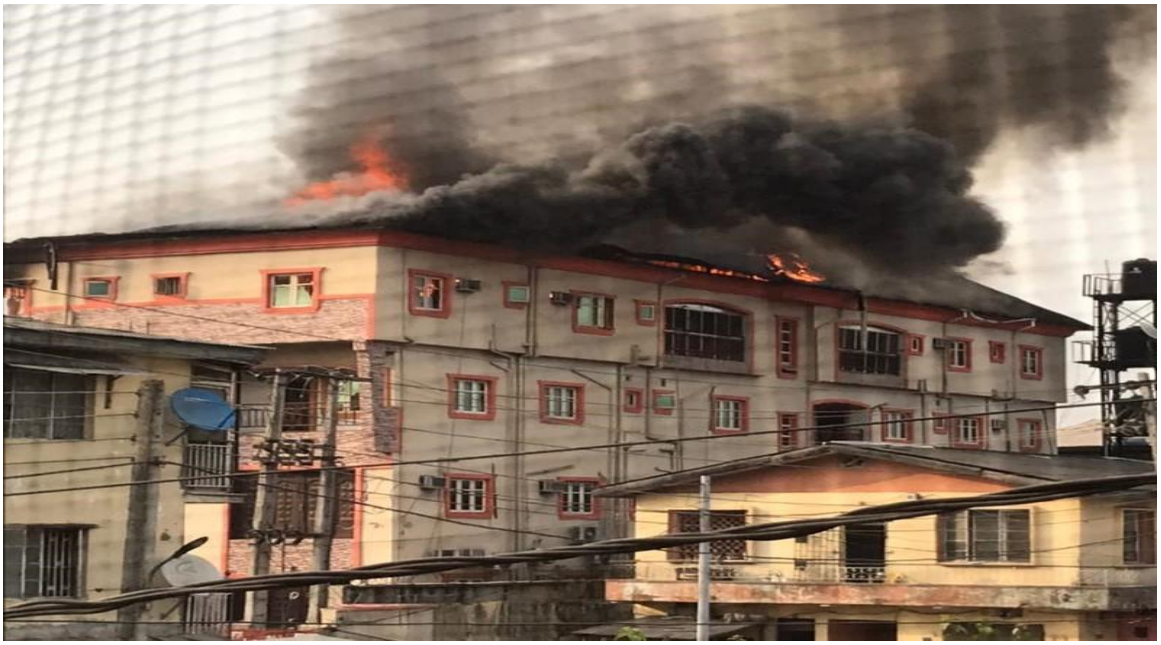

Fig 1: Dry wind aided the fire outbreak at the three-storey building in Surulere, Lagos on the Vanguard news 1st day of year 2022.

Fig 2: The largest Lagos wood market, Oko-Baba Sawmill at Ebute Metta, was razed by fire on January 5, 2022, destroying valuables and displacing sawmillers, traders and hundreds of residents of the sawmill and the neighborhoods.

Table 1: Cities and number of days with horizontal visibility less than or equal to 1000m in the month of December 2021.

S/N	State	Cities affected	Observed minimum visibility values (m)	Date of occurrence	No of days with visibility less than or equal to 1000m
1	Anambra	Awka	1000	12 & 24	2
2	Bauchi	Bauchi	800	7, 8, 10 – 12	5
3	Niger	Bida	1000	4, 5, 10 & 18	4
4	Jigawa	Dutse	500	2, 3, 6, 9, 10 & 22	6
5	Enugu	Enugu	1000	8 & 10	2
6	Gombe	Gombe	1000	9	1
7	Zamfara	Gusau	1000	7	1
8	Taraba	Jalingo	800	7, 10 & 16	3
9	Plateau	Jos	1000	10	1

10	Kano	Kano	800	3, 9, 10, 21 & 22	5
11	Katsina	Katsina	400	2, 3, 8 & 9	4
12	Borno	Maiduguri	300	6, 9, 15, 16, 17, 18, 21, 22 & 23	9
13	Benue	Makurdi	800	11, 16, 18 & 23	4
14	Niger	Minna	800	3, 7, 10 & 18	4
15	Yobe	Nguru	200	2, 3, 6 17 & 21	5
16	Yobe	Potiskum	300	6 & 9	2
17	Rivers	Port Harcourt	1000	9 & 31	2
18	Sokoto	Sokoto	1000	8	1
19	Kebbi	Yelwa	1000	18 & 22	2
20	Adamawa	Yola	600	2 & 9	2
2	Kaduna	Zaria	800	3, 7, 8 & 10	4

Table 2: Cities and number of days with horizontal visibility less than or equal to 1000m in the month of January 2022

S/N	State	Cities affected	Observed minimum visibility values (m)	Date of occurrence	No of days with visibility less than or equal to 1000m
1	FCT	Abuja	1000	28	1
2	Ekiti	Ado-Ekiti	500	12, 27, 28 & 29	4
3	Ondo	Akure	1000	29	1
4	Anambra	Awka	1000	29	1
5	Bauchi	Bauchi	500	20, 27, 28 & 30	4
6	Niger	Bida	800	28 & 29	2
7	Jigawa	Dutse	700	27 & 28	2
8	Gombe	Gombe	1000	28 & 29	2

9	Zamfara	Gusau	500	27 & 28	2
10	Kwara	Ilorin	400	28	1
11	Oyo	Iseyin	800	29	1
12	Taraba	Jalingo	800	28	1
13	Plateau	Jos	1000	28	1
14	Kaduna	Kaduna	1000	29	1
14	Kano	Kano	300	3, 21, 27, 28 & 29	5
15	Katsina	Katsina	400	3, 20, 27, 28 & 29	5
16	Kogi	Lokoja	1000	27 & 28	1
17	Borno	Maiduguri	400	15, 25, 27 &28	4
18	Benue	Makurdi	600	28	1
19	Niger	Minna	1000	28	1
20	Yobe	Nguru	200	3, 5, 27, 28 & 29	5
21	River	Port Harcourt	1000	28 & 29	2
22	Sokoto	Sokoto	800	27 & 28	2
23	Akwa Ibom	Uyo	800	24 & 29	2
24	Kebbi	Yelwa	1000	28	1
25	Adamawa	Yola	400	26, 27 & 28	3
26	Kaduna	Zaria	1000	28, 29 & 30	3
27	Bayelsa	Yenagoa	800	4, 5, 21 & 30	4

1.2 High Rainfall Intensity

High rainfall amount in a single day event in December 2021 and January 2022 as shown in tables 3 and 4 below respectively. The three recorded events were confined in coastal cities.

Table 3: Daily Rainfall Amount above 50mm in December 2021

S/N	STATE	STATION	DATE	AMOUNT (mm)
1	Cross River	Calabar	2nd	53.2

Table 4: Daily Rainfall Amount above 50mm in January 2022

S/N	STATE	STATION	DATE	AMOUNT (mm)
1	Rivers	Port Harcourt	9th	67.6
2	Bayelsa	Yenagoa	9th	61.0

1.4 LOW AND HIGH TEMPERATURES

The tables below show the number of days with extreme temperatures in December 2021 and January 2022. In December 2021, the highest nighttime temperature of 27^{o}C was observed over Akure on the 23rd of the month making Akure the only city that observed nighttime temperature above the threshold. No city recorded daytime temperature above the limit in this month. The coolest minimum temperature of 5.9^{o}C was documented in Jos on the 6th of December. Number of days with highs and lows minimum and maximum temperature in December 2021 are presented in table 5 and 6 respectively. In January 2020, daytime temperatures reported were within suitable thresholds as no day recorded temperature values above 40^{0}C or below 26^{0}C, however few places like Dutse, Kano, Katsina, Nguru, Potiskum, Sokoto and Zaria recorded varying degree of daytime temperatures of 23 - 25.0^{o}C in this month; table 7. The warmest (27^{o}C) and coolest (5.6^{o}C) nighttime temperatures were observed over Awka and Dutse on the 9th and 31st of January respectively.

Table 5. Highs (above 26°C) and lows (15°C) Minimum temperature in December 2021.

December Minimum Temperature				
S/N	**State**	**Station**	**No of days with minimum temperature < 15**	**No of days with minimum temperature > 26**
1	Ondo	Akure	1	1
2	Bauchi	Bauchi	20	
3	Cross River	Calabar	1	
4	Jigawa	Duste	31	
5	Enugu	Enugu	2	
6	Gombe	Gombe	4	
7	Zamfara	Gusau	9	
8	Plateau	Jos	31	
9	Kaduna	Kaduna	6	
10	Kano	Kano	30	

11	Katsina	Katsina	16	
12	Nasarawa	Lafia	2	
13	Yobe	Nguru	31	
14	Yobe	Potiskum	13	
15	Ekiti	Usi-Ekiti	12	
16	Kaduna	Zaria	16	

Table 6. Highs (above 40°C) and lows (26°C) Maximum temperature in December 2021.

December Maximum Temperature				
S/N	**State**	**Station**	**No of days with maximum temperature < 26**	**No of days with maximum temperature > 40**
1	Plateau	Jos	4	
2	Katsina	Katsina	2	
3	Borno	Maiduguri	2	

Table 7. Highs (above 26°C) and lows (15°C) Minimum temperature in January 2022.

January Minimum Temperature				
	State	**Station**	**No of days with minimum temperature < 15**	**No of days with minimum temperature > 15**
1	Ogun	Abeokuta	3	
2	Ekiti	Ado-Ekiti	1	
3	Anambra	Awka		1
4	Bauchi	Bauchi	23	
5	Jigawa	Dutse	31	
6	Enugu	Enugu	1	1
7	Gombe	Gombe	7	

8	Zamfara	Gusau	10	
9	Oyo	Ibadan		1
10	Plateau	Jos	29	
11	Kaduna	Kaduna	5	
12	Kano	Kano	31	
13	Katsina	Katsina	25	
14	Nasarawa	Lafia	1	
15	Yobe	Nguru	31	
16	Cross River	Obudu	12	
17	Cross River	Ogoja	5	1
18	Osun	Oshogbo	1	
19	Imo	Owerri	2	
20	Yobe	Potiskum	24	
21	Sokoto	Sokoto	5	
22	Ekiti	Usi-Ekiti	21	
23	Delta	Warri		1
24	Kaduna	Zaria	23	

Table 8. Highs (above 40°C) and lows (26°C) Maximum temperature in January 2022.

January Maximum Temperature				
	State	**Station**	**No of days with maximum temperature < 26**	**No of days with maximum temperature > 40**
1	Jigawa	Dutse	1	
2	Plateau	Jos	9	
3	Kano	Kano	6	
4	Katsina	Katsina	7	
5	Yobe	Nguru	3	
6	Yobe	Potiskum	1	

7	Sokoto	Sokoto	2	
8	Kaduna	Zaria	3	

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