

Aerometeorological Bulletin

January- March 2026

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Our Mandate

To provide for the regulation of meteorology and for related matters.

Our Vision

To be a World Class provider of weather and Climate services for safety and sustainable national socio-economic development.

Our Mission

To observe Nigerian Weather and Climate and provide Meteorological, Hydrological, and Oceanographic Services in support of National needs and International Obligations

Who We Serve

Aviation, Agriculture, Building and Construction, Commerce, Health, Hydrology, Marine, Oil and Gas, Sports, Social Events, Power, and Energy, Telecommunication and more.....

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Table of **CONTENTS**

Executive Summary	iv
Introduction	v
Weather Review For First Quarter 2026	
JANUARY 2026	10
2.0.1 Review of Inter-Tropical Discontinuity (ITD) Position Over Nigeria in January 2026	
2.1 Observed Mean Daily Temperature (Tmean) °C at various Airports in January 2026	
2.2 Observed Maximum Temperature (Tmax) °C at the Airports in January 2026	
2.3 Observed Minimum Temperature (Tmin) °C at the Airports in January 2026	
2.4 Observed Visibility at the Five International Airports in January 2026	
3.0 Daily Rainfall Amounts at the Five International Airports in Nigeria in January 2026	
3.1 Daily Observed Thunderstorm Occurrence at the Five International Airports in January 2026	
3.2: Production and Collection of Flight Documentation in January 2026	
3.3 Aerodrome Warning	
FEBRUARY 2026	21
4.01 Review Of The Position Of The Inter-Tropical Discontinuity (ITD) Over Nigeria in February 2026	
4.1 Observed Mean Daily Temperature (Tmean °C) at the Airports in February 2026	

4.2 Observed Maximum Temperature (Tmax) °C At The Airports In February 2026

4.3 Observed Minimum Temperature (Tmin) °C At The Airports In February 2026

4.4 Observed Visibility at the Five International Airports in February 2026

5.0 Observed Daily Rainfall at various Airports in Nigeria in February 2026

5.1 Daily Observed Thunderstorm Occurrences at the Five International Airports in February 2026

5.2 Production and Collection of Flight Documentation Folders in February 2026

5.3 Aerodrome Warning

MARCH 2026

33

5.0.1 Review Of The Position Of The Inter-Tropical Discontinuity (ITD)

5.1 Observed Mean Daily Temperature (Tmean) °C at the Airports in March 2026

5.2 Observed Maximum Temperature (Tmax) °C At The Airports In March 2026

5.3 Observed Minimum Temperature (Tmin) °C At The Airports In March 2026

5.4 Observed Visibility at the Five International Airports in March 2026

6.0 Observed Daily Rainfall at various Airports in Nigeria in March 2026

6.1 Daily Observed Thunderstorm occurrences at the Five international Airports in March 2026

6.2 Production and Collection of Flight Documentation Folders in March 2026

6.3 Aerodrome Warning

Executive Summary



The Nigerian Meteorological Agency (NiMet) as part of its mandates provides weather data and information for safe air navigation in line with the Standard and Recommended Practices (SARPs) prescribed by the International Civil Aviation Organization (ICAO) and World Meteorological Organisation (WMO), and in compliance with the Nigerian Civil Aviation Regulations. The strategic importance of weather and climate information to national security and aviation safety underscores their utilisation from siting of Airfields, Aerodromes and Airports where wind rose is critical to the orientation of the runway and other critical assets. Take-off, landing, on-ground, and enroute operations of aircraft depends on the prevailing weather phenomenon. Aircraft designs take into consideration climatology of weather information.

This bulletin covers the analysis of the weather events that characterised the first quarter of 2026 (January, February, March) and how they affected flight operations at the five (5) major international airports namely:

- Nnamdi Azikiwe International Airport, Abuja.
- Murtala Muhammed International Airport, Lagos.
- Mallam Aminu Kano International Airport, Kano. •
- Port Harcourt International Airport, Omagwa Port Harcourt. •
- Akanu Ibiam International Airport, Enugu

Professor Charles Anosike

(Director-General/Chief Executive Officer,
Nigerian Meteorological Agency (NiMet))



The Nigeria Meteorological Agency (NiMet) is the national authority responsible for providing weather, climate, and hydrometeorological services for safety and socio-economic development of Nigeria. The agency was established under the Nigeria Meteorological Agency Act of 2003 (as amended). The act provided the legal framework for the setting up and operation of the agency. The establishment of NiMet as the successor to the erstwhile Department of Meteorological Services of the then Federal Ministry of Aviation marked a significant step in enhancing meteorological services in the country. NiMet, amongst other statutory functions, is vested with the responsibility of providing weather data and information for safe air navigation in line with the Standard and Recommended Practices (SARPs) prescribed by the International Civil Aviation Organization (ICAO) and the World Meteorological Organization (WMO), and in compliance with the Nigerian Civil Aviation Regulations.

Pursuant to the above, NiMet provides quality, accurate, and timely weather observations, forecasts, and warnings to the Aviation industry in Nigeria for the safety of air navigation.

The Aeronautical Meteorology (AEROMET) products and services (or weather information for aviation) produced by NiMet for flight operations in the Nigerian airspace include the following:

- METAR
- SPECI
- Terminal Aerodrome Forecast (TAF)
- Trend forecast
- Aerodrome warning
- Windshear warning
- SIGMET
- Area forecast (for low level flights)
- Flight documentation
- Pilot and crew briefing services

This bulletin covers the analysis of the weather events that characterized the first quarter of 2026: January, February and March as reported at the five (5) major international airports, namely:

- Mallam Aminu Kano International Airport, Kano.
- Murtala Muhammed International Airport, Lagos.
- Nnamdi Azikiwe International Airport, Abuja.
- Port Harcourt International Airport, Omagwa Port Harcourt.
- Akanu Ibiam International Airport, Enugu.

1.1 . Weather Parameters and Aviation

Aviation is a highly weather-sensitive sector, for which the provision of timely, accurate, and reliable aeronautical meteorological information is essential for safety, regularity, efficiency, and economy of air navigation, in accordance with the objectives of ICAO Annex 3 (Meteorological Service for International Air Navigation). Meteorological conditions have a direct and significant impact on aircraft Operations. Weather phenomena such as thunderstorms, fog, heavy precipitation, and low visibility constitute major hazards to flight safety and operational continuity.

Accurate forecasting and effective dissemination of aeronautical meteorological information are therefore, critical in supporting pilots, air traffic services personnel, and aircraft operators in flight planning, route selection, and tactical decision-making before and during flight operations. The appropriate application of meteorological information enhances situational awareness, reduces operational risk and contributes to the overall safety and efficiency of the aviation system.

Globally, extreme weather events represent a major hazard to flight operations and account for a significant proportion of aviation-related incidents and operational disruptions. The observed increase in the frequency and intensity of such events, associated with climate variability and climate change, further reinforces the need for robust meteorological observation, forecasting, and warning systems to support aviation safety.

In Nigeria, the Nigerian Meteorological Agency (NiMet), as the designated Meteorological Authority in accordance with ICAO provisions, continuously observes, measures, and analyses meteorological parameters across the country for the purpose of providing meteorological support services for aviation and other weather-dependent sectors. A review of the key meteorological parameters observed at the five (5) international airports meteorological stations during the first quarter of 2026 is presented in this edition of the Aeromet Bulletin. The parameters analyzed include maximum and minimum air temperatures, mean temperature, thunderstorms, precipitation, and prevailing visibility of 5,000 m and below. The analysis also includes the monthly position of the Inter-Tropical Discontinuity (ITD) and aerodrome warnings issued in support of safe and efficient aircraft operations during the period.

1.2. The Inter-Tropical Discontinuity (ITD) and Its Influence on Nigerian Weather

The Inter-Tropical Discontinuity (ITD) is a key driver of seasonal weather patterns across Nigeria and West Africa. It represents the boundary zone where dry, dusty northeasterly trade winds from the Sahara desert converge with the moist southwesterly winds from the Atlantic Ocean. The latitudinal position of the ITD is not fixed but shifts seasonally: it moves northward between March and October, allowing the influx of moisture, resulting in rainfall across Nigeria.

Between November and March, the ITD moves southwards, allowing dry dusty continental winds to dominate all over the country. The oscillatory movement of the ITD determines the onset and cessation of the rainy season, the distribution of rainfall, and the occurrence of the harmattan dust haze. To the north of the ITD, conditions are generally hot and dry, while to the south, humid maritime air prevails. Its convergence zone is often marked by intense weather activity, including thunderstorms, heavy rainfall, and periods of poor visibility. Thus, the ITD plays a crucial role in aviation safety.

1.3. Overview of Weather Conditions in Nigeria During the first Quarter (January, February and March) of 2026.

Weather conditions across Nigeria during the first quarter of 2026 were predominantly controlled by the seasonal migration of the Intertropical Discontinuity (ITD), which modulated the interaction between the dry continental air mass and the moist maritime air mass. This period marks the transition from the peak dry season conditions to early pre-monsoon weather activities. The Intertropical Discontinuity (ITD), which remained positioned well south of the country in January and gradually migrated northward towards the end of the first quarter. This controlled the dominance of dry continental air masses early in the quarter and the gradual transition toward moist tropical conditions in the south.

January 2026 was predominantly a dry-season month under Harmattan influence, characterized by hazy, dry, and stable atmospheric conditions, particularly over northern and central regions. However, the month was

marked by anomalous features, including a weaker Harmattan regime, reduced dust haze intensity in some areas, and unexpected early rainfall events in southern Nigeria, indicating slight deviations from normal seasonal patterns. The weather conditions in February 2026 over Nigeria was characterized by a gradual transition from dry Harmattan conditions to early moist monsoonal influence. While northern regions remained hot and dry, the southern regions experienced increasing thunderstorms and early rainfall, marking a departure from typical dry-season conditions. The month also featured elevated temperatures and reduced Harmattan intensity, highlighting significant climatic variability.

In March 2026, there was a significant seasonal transition, characterized by the progressive northward migration of the Intertropical Discontinuity (ITD) and the increasing influence of moist southwesterly maritime air masses over the country. While the northern states remained predominantly hot and relatively dry, the central and southern parts of Nigeria experienced a notable increase in convective activities, including thunderstorms and rainfall events, marking the gradual onset of the rainy season. During the month, the influence of the dry and dusty Harmattan conditions further weakened across most parts of the country, resulting in increased atmospheric moisture content and improved horizontal visibility. Enhanced atmospheric instability and moisture convergence contributed to more frequent thunderstorm development, particularly over the Middle Belt and southern states.

1.3.1 Highlights of the Weather at the Five Airport Stations in Nigeria in the first Quarter of 2026

Lagos

Lagos airport experienced an early transition to wet season conditions, with anomalous light rainfall in January, increasing thunderstorm frequency in February, and widespread moderate to heavy rainfall by March. The station recorded a shift from haze-induced visibility reduction to convective weather hazards, including heavy rain and thunderstorms.

Abuja

At Abuja airport, there was a gradual seasonal transition, beginning with dry and hazy conditions in January, followed by reduced haze and rising temperatures in February, and giving way to early thunderstorm activities and rainfall onset in March 2026. This airport observed a transition from stable atmospheric conditions to increasing convective instability during the quarter under review.

Kano

Kano Airport remained predominantly under the influence of the dry continental air mass throughout the first quarter of 2026. January was characterized by frequent dust haze episodes and reduced horizontal visibility associated with Harmattan conditions. By February and March, the gradual northward migration of the Intertropical Discontinuity (ITD) resulted in increasing temperatures and persistently dry weather conditions. Rainfall occurrence was largely absent during the period, with only isolated convective developments observed towards the end of the quarter.

Consequently, high temperatures became the dominant operational concern.

Port Harcourt

The earliest and most persistent wet conditions in 2026 was observed in Port Harcourt. This was marked by cloudy skies and light rainfall in January, followed by frequent thunderstorms in February, and widespread heavy rainfall in March. The weather at this station was consistently influenced by moist maritime air, with convective weather dominating throughout much of the quarter.

Enugu

At the Enugu airport there were early signs of seasonal transition, with isolated rainfall in January, increasing thunderstorm activities in February, and frequent rainfall events by March, marking the onset of the rainy season. Weather conditions evolved from slightly hazy and dry to predominantly moist and convective.

Overall Assessment

Weather conditions over Nigeria during the first quarter of 2026 were characterized by a gradual but anomalous transition from dry Harmattan conditions to early wet-season dynamics, driven by the progressive northward migration of the Intertropical Discontinuity (ITD). Dry, dusty northeasterly flow with widespread haze and reduced visibility were dominant in January 2026. However, isolated rainfall occurred over southern areas, indicating a typical presence of moisture in the atmosphere. By February, the Harmattan weakened significantly, with rising temperatures and increasing maritime influence,

particularly across southern and central regions, leading to early convective development. In March 2026, the moist southwesterly flow became established over southern and parts of central Nigeria, resulting in frequent thunderstorms and moderate to heavy rainfall, marking the onset of the rainy season, while the northern states of the country remained hot and predominantly dry. Overall, the quarter featured reduced dust haze intensity, above-normal temperatures, and an earlier-than-usual onset of rainy season, reflecting a shift from visibility-related hazards to convective weather impacts, with significant implications for aviation and other weather-sensitive operations.

1.3.2 Summary of Temperature Fluctuations in the First Quarter (January to March) of 2026

Air temperature is a critical meteorological parameter with direct implications for aircraft performance during take-off, landing, and cruise operations. Variations in air temperature influence air density, which in turn affects engine thrust, aerodynamic lift, and take-off distance requirements. Elevated temperatures reduce air density, resulting in longer take-off rolls and reduced engine efficiency, while lower temperatures increase air density and generally enhance aircraft performance. Temperature conditions in Nigeria during the first quarter of 2026 were characterized by a steady warming trend from January through March, with pronounced temperature increase in February and March, particularly in the northern states, and slight moderation in the south due to early rainy season onset, reflecting the transition from Harmattan to moist tropical conditions.

1.4. Summary of NiMet's AEROMET Products Disseminated in the First Quarter of 2026

NiMet produced a total of 6,585 Flight Documentation folders during the quarter under review. 5,128 of these, representing 79.8%, were collected by the airline operators. The Agency produced and transmitted a total of 22,098 METAR during the quarter under review. Furthermore, NiMet produced and transmitted a total of 1,472 TAF during the quarter under review, and all of which were transmitted. A total of 58 aerodrome warnings were issued and transmitted to users during the period under review.

JANUARY 2026

2.0.1 Review of Inter-Tropical Discontinuity (ITD) Position Over Nigeria in January 2026

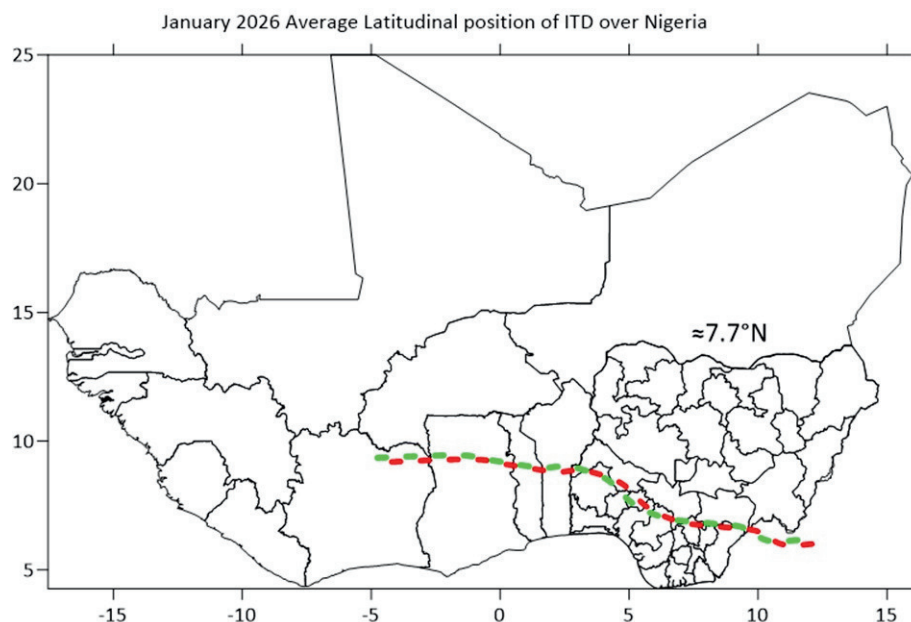


Figure 1: Mean Position of the Intertropical Discontinuity (ITD) in January 2026

Over Nigeria, the latitudinal position and movement of the ITD influence the seasonal weather patterns, such as rainfall distribution, cloud development, wind flow, humidity, and the transition between the wet and dry seasons.

In January 2026, the ITD remained in its southernmost position in the year, which is typical during the dry season. During this period, it averaged around 7.7°N latitude, stretching across southern Nigeria from west to east. The northern states of the country, particularly areas north of the ITD such as Mallam Aminu Kano International Airport (Kano) and Nnamdi Azikiwe International Airport (Abuja), experienced dry and dusty Harmattan winds originating from the Sahara Desert. In contrast, the southern states, located south of the ITD such as Lagos, Enugu, and Port Harcourt continued to receive some moisture from the Atlantic Ocean, resulting in slightly more humid and warmer

weather conditions, while isolated thunderstorms persisted in southern and part of central states. Throughout the month, there was minimal variation in the latitudinal position of the ITD; maintaining a relatively stable position due to the prevailing dominance of the dry continental air mass.

2.0.2: TEMPERATURE CHARACTERISTICS IN THE JANUARY 2026

January 2026 was generally characterized by high daytime temperatures across the country. These were locally moderated by residual cloud cover and intermittent rainfall, particularly over the southern and central states. Nighttime temperatures remained relatively elevated owing to increased atmospheric moisture content. Periods of reduced cloudiness enhanced surface insolation.

2.1 OBSERVED MEAN DAILY TEMPERATURE (T_{MEAN}) °C AT VARIOUS AIRPORTS IN JANUARY 2026

Abuja Airport

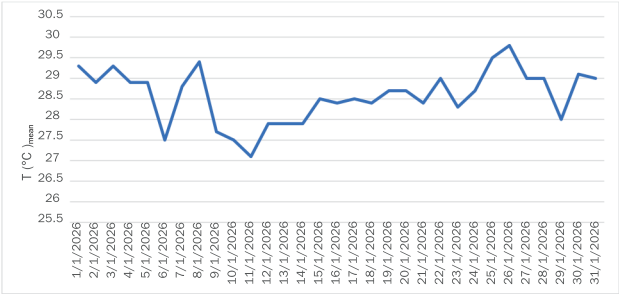


Figure 2: Daily Mean Temperature at Nnamdi Azikiwe International Airport, Abuja in January, 2026.

In January 2026, the highest mean temperature of 29.8°C was recorded at the airport on the 26th, while the lowest, 27.1°C, occurred on the 11th of the same month. (See Figure 2).

Kano Airport

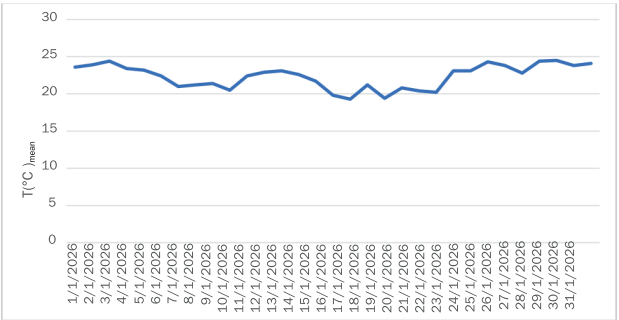


Figure 3: Daily Mean Temperature at Mallam Aminu Kano International Airport, Kano in January, 2026.

In January 2026, the highest mean temperature of 24.5°C was recorded at the airport on the 29th while the lowest, 19.3°C, occurred on the 17th of the same month. (See Figure 3).

Enugu Airport

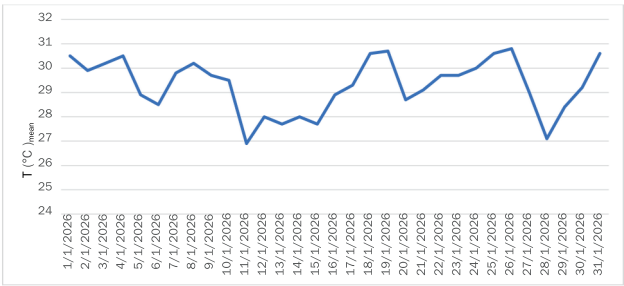


Figure 4: Mean Daily Temperature at Akanu Ibiam International Airport, Enugu in January, 2026.

In January 2026, the highest mean temperature of 30.8°C was recorded at the airport on the 26th, while the lowest, 26.9°C, occurred on the 11th of the same month. (See Figure 4).

Lagos Airport

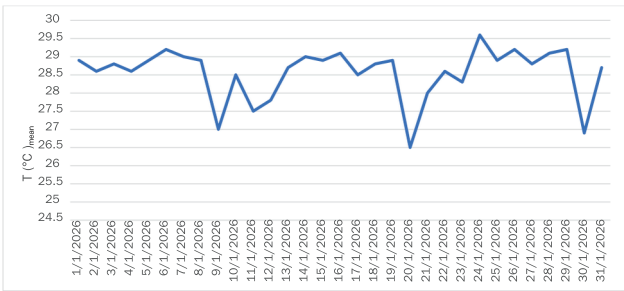


Figure 5: Mean Daily Temperature at Murtala Muhammed International Airport Lagos in January, 2026.

In January 2026, the highest mean temperature of 29.6°C was recorded at the airport on the 24th while the lowest, 26.5°C, occurred on the 20th of the same month. (See Figure 5).

Port Harcourt Airport

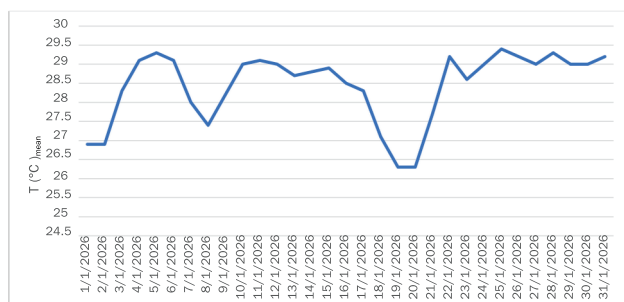


Figure 6: Daily Mean Temperature at Port Harcourt International Airport in January, 2026.

In January 2026, the highest mean temperature of 29.4°C was recorded at the airport on the 25th, while the lowest, 26.3°C, occurred on the 19th and 20th of the same month. (See Figure 6).

2.2 OBSERVED MAXIMUM TEMPERATURE (T_{MAX}) °C AT THE AIRPORTS IN JANUARY 2026

Abuja Airport

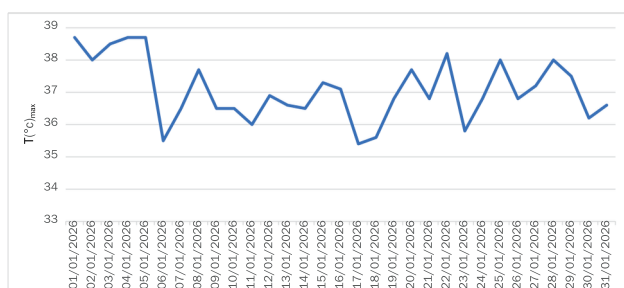


Figure 7: Daily Maximum Temperature at Nnamdi Azikiwe International Airport, Abuja in January, 2026.

As depicted in Figure 7, the highest maximum temperature recorded at Abuja airport in January, 2026 was 38.7°C, observed on the 1st, 4th and 5th, while the lowest, 35.4°C, was recorded on the 17th of the same month.

Kano Airport

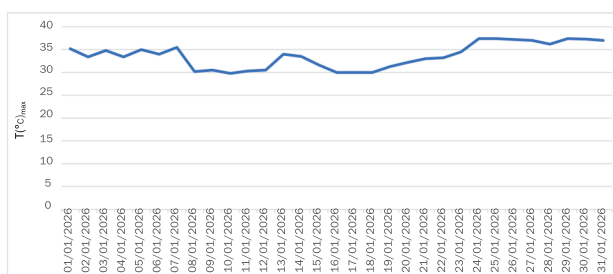


Figure 8: Daily Maximum Temperature at Mallam Aminu Kano International Airport, Kano in January, 2026.

As depicted in Figure 8, the highest maximum temperature recorded at Kano airport in January 2026 was 37.4°C, observed on the 24th, 25th and 29th, while the lowest, 29.8°C, was recorded on the 10th of the same month.

Enugu Airport

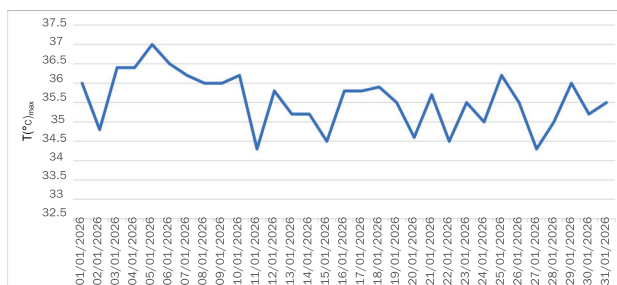


Figure 9: Daily Maximum Temperature at Akanu Ibiam Airport, Enugu in January, 2026.

As depicted in Figure 9, the highest maximum temperature recorded at Enugu airport in January 2026 was 37.0°C, observed on the 5th, while the lowest, 34.3°C, was recorded on the 11th and 27th of the same month.

Lagos Airport

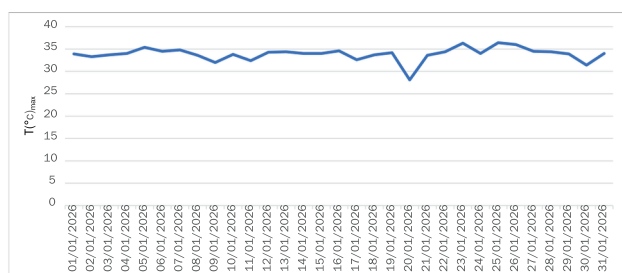


Figure 10: Daily Maximum Temperature at Murtala Muhammed International Airport, Lagos in January, 2026.

As depicted in Figure 10, the highest maximum temperature recorded at Lagos airport in January 2026 was 36.4°C, observed on the 25th, while the lowest, 28.1°C, was recorded on the 20th of the same month.

Port Harcourt Airport

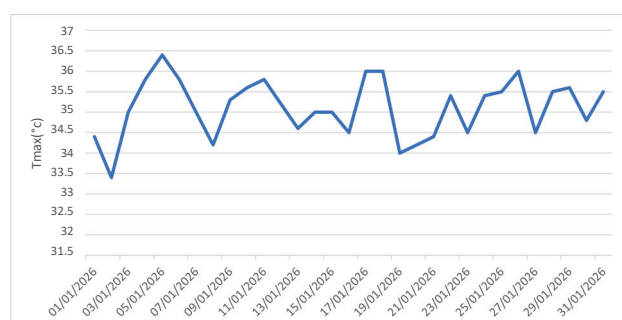


Figure 11: Daily Maximum Temperature At Port Harcourt International Airport, Port Harcourt in January, 2026.

As depicted in Figure 11, the highest maximum temperature recorded at Port Harcourt airport in January 2026 was 36.4°C, observed on the 5th, while the lowest, 33.4°C, was recorded on the 2nd of the same month.

2.3 OBSERVED MINIMUM TEMPERATURE (T_{MIN}) °C AT THE AIRPORTS IN JANUARY 2026.

Abuja Airport

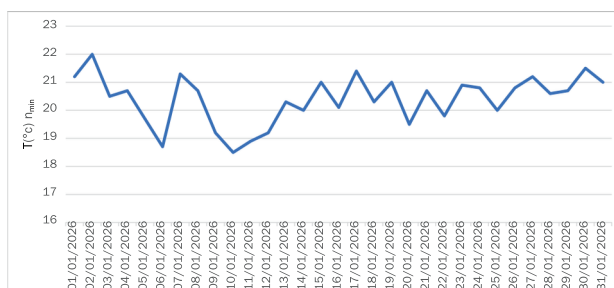


Figure 12: Daily Minimum Temperature at Nnamdi Azikiwe International Airport, Abuja in January, 2026.

The highest minimum temperature of 22.0°C was recorded at the airport on the 2nd of January, 2026, while the lowest, 18.5°C, was observed on the 10th of the same month.

Kano Airport

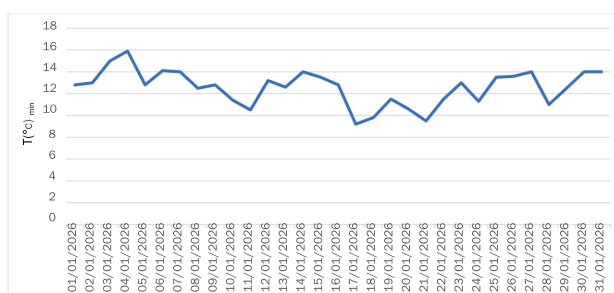


Figure 13: Daily Minimum Temperature at Mallam Aminu Kano International Airport, Kano in January, 2026.

The highest minimum temperature of 15.9°C was recorded at the airport on the 4th of January, 2026, while the lowest, 9.2°C, was observed on the 17th of the same month.

Enugu Airport

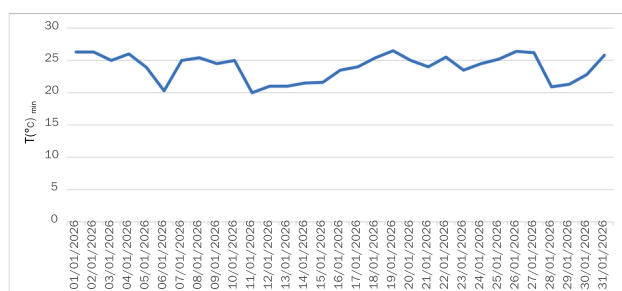


Figure 14: Daily Minimum Temperature at Akanu Ibiam Airport, Enugu in January, 2026.

The highest minimum temperature of 26.5°C was recorded at the airport on the 19th of January, 2026, while the lowest, 20.0°C, was observed on the 11th of the same month.

Port Harcourt Airport

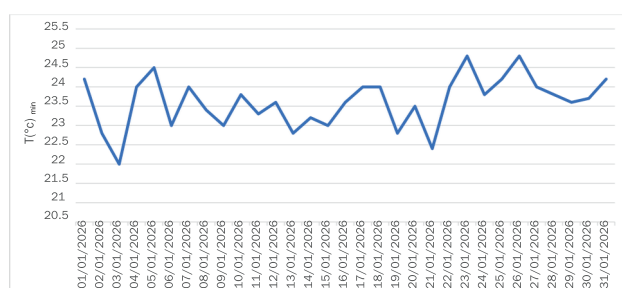


Figure 15: Daily Minimum Temperature at Port Harcourt International Airport, Port Harcourt in January, 2026.

The highest minimum temperature of 24.8°C was recorded at the airport on the 23rd, and 26th of January, 2026, while the lowest, 22.0°C, was observed on the 3rd of the same month.

2.4 OBSERVED VISIBILITY AT THE FIVE INTERNATIONAL AIRPORTS IN JANUARY, 2026

Abuja Airport

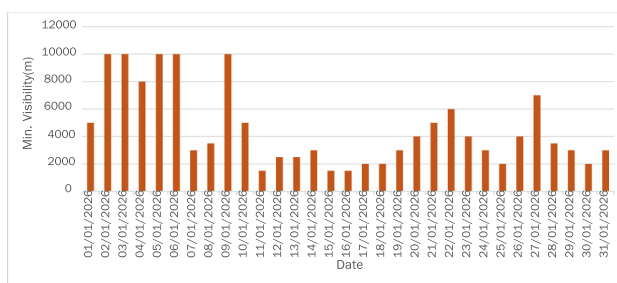


Figure 16: Daily Visibility at Nnamdi Azikiwe Airport, Abuja in January, 2026

Visibility of 5000m and below were recorded at Abuja airport for twenty-three (23) non-consecutive days in January 2026, and the lowest was 1500m, recorded on the 11th, 15th and 16th of the month.

Enugu Airport

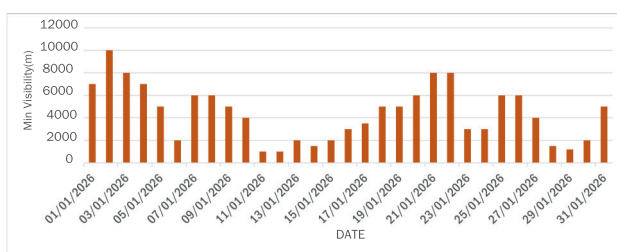


Figure 17: Daily Visibility at Akanu Ibiam International Airport, Enugu in January, 2026.

As shown in Figure 17, visibility of 5000 m and below were recorded at Akanu Ibiam International airport Enugu for twenty (20) non-consecutive days in January 2026, and the lowest was 1000 m, recorded on 11th and 12th of the month.

Lagos Airport

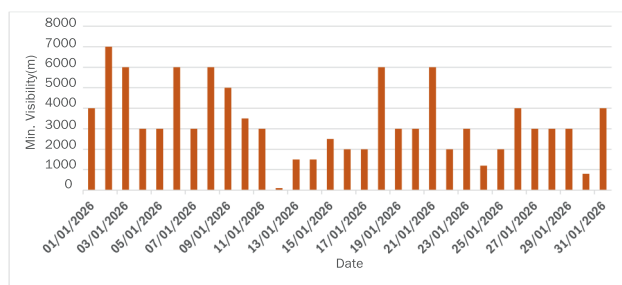


Figure 18: Daily Visibility at Murtala Muhammed International Airport, Lagos in January, 2026

As shown in Figure 2, visibility of 5000m and below were recorded at Lagos airport for twenty-five (25) non-consecutive days in January 2026, and the lowest was 0100m, recorded on 12th of the month.

Port Harcourt Airport

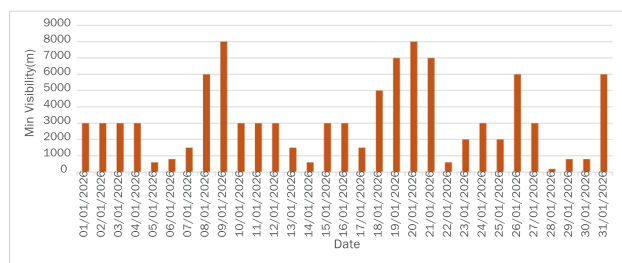


Figure 19: Visibility at Port Harcourt International Airport in January, 2026

As shown in Figure 19, visibility of 5000m and below were recorded at port Harcourt airport for twenty-three (23) non-consecutive days in January 2026, and the lowest was 0200m, recorded on 28th of the month.

Kano Airport

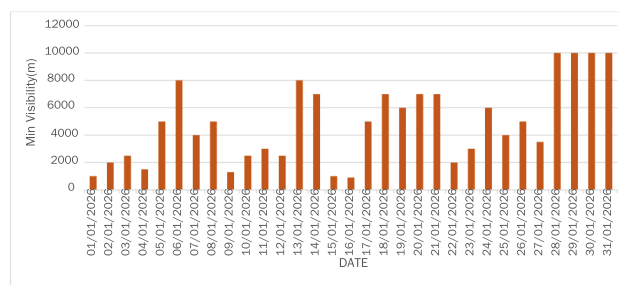


Figure 20: Daily Visibility at Mallam Aminu Kano International Airport, Kano in January 2026

As shown in Figure 5, visibility of 5000m and below were recorded at Mallam Aminu Kano International Airport for nineteen (19) non-consecutive days in January 2026, and the lowest was 0900m, recorded on 16th of the month.

3.0. DAILY RAINFALL AMOUNTS AT THE FIVE INTERNATIONAL AIRPORTS IN JANUARY 2026

Lagos Airport

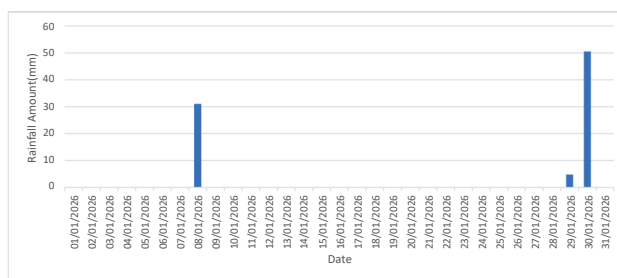


Figure 21: Daily Rainfall Amounts at Murtala Muhammed International Airport, Lagos in January, 2026

The highest rainfall recorded at the Lagos airport in January 2026 was 50.6mm. This was recorded on the 30th of the month, while the lowest recorded during the period was 4.8mm on the 29th of the month. The total amount of rainfall for the month was 86.5mm (see Figure 21)

Port Harcourt Airport

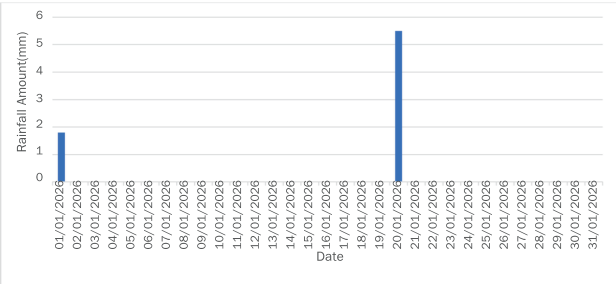


Figure 22: Daily Rainfall at Port Harcourt International Airport in January, 2026

The highest rainfall recorded at the Port Harcourt airport in January 2026 was 5.5 mm. This was recorded on the 20th of the month, while the lowest recorded during the period was 1.8mm on 1st of the month. The total amount of rainfall for the month was 7.5mm (see Figure 22)

Enugu Airport

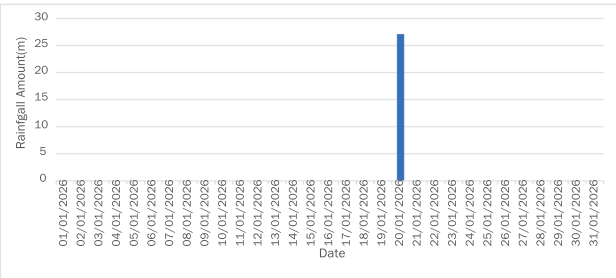


Figure 23 Daily Rainfall at Akanu Ibiam International Airport, Enugu in January, 2026

The highest rainfall recorded at the Enugu airport in January 2026 was 27.1mm. This was recorded on the 20th of the month, being the only day that rain was recorded. The total amount of rainfall for the month was 27.1mm (see figure 23)

Abuja Airport

No Rainfall was recorded in Kano Airport in the month of October.

Kano Airport

No Rainfall was recorded in Kano Airport in the month of October.

3.0 (D) NUMBER OF RAINY DAYS AT THE FIVE INTERNATIONAL AIRPORTS IN THE MONTH OF JANUARY 2026

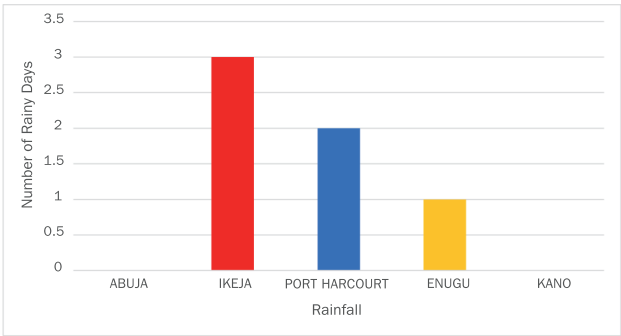


Figure 24: Number of Rainy Days at the five Airports in the month of January 2026

As shown in Figure 24, Murtala Muhammed International Airport, Ikeja, recorded the highest number of rainy days in January 2026, with a total of three (3) days. This was followed by Port Harcourt International Airport with two (2) days; Enugu International Airport recorded one (1) day with rainfall. While Nnamdi Azikiwe International Airport, Abuja and Aminu Kano International Airport, Kano, did not record any rainfall occurrence during the month under review.

3.1 DAILY OBSERVED THUNDERSTORM OCCURRENCE AT THE FIVE INTERNATIONAL AIRPORTS IN JANUARY 2026

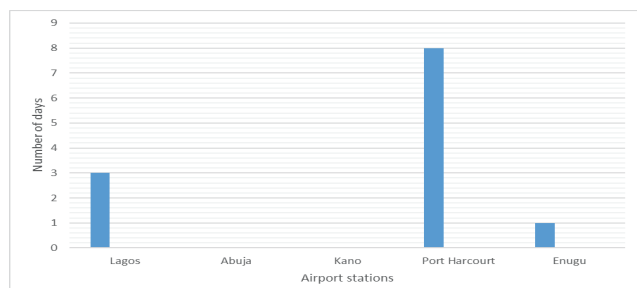


Figure 25: Thunderstorm occurrence at the Five International Airport in January 2026

Thunderstorm activity across the five airport stations in January 2026 was strongly influenced by the mean position and oscillatory movement of the Intertropical Discontinuity (ITD), which was located around latitude 07.7°N during the period. The northward displacement of the ITD enhanced the penetration of moist southwesterly maritime airflow from the Atlantic Ocean into much of Nigeria, thereby increasing atmospheric moisture content, instability, and convective activity across several parts of the country. Consequently, the frequency and intensity of thunderstorms generally decreased from the southern coastal stations toward the far northern states of Nigeria.

As shown in Figure 25 Port Harcourt International Airport recorded the highest thunderstorms occurrence of Eight (8) events in the month under review, while Murtala Muhammed International Airport recorded three (3) Akanu Ibiam International Airport Enugu recorded one (1) while no event of thunderstorms occurrence reported at

Nnamdi Azikiwe International Airport Abuja and Mallam Aminu Kano International Airport, for the month.

3.2: PRODUCTION AND COLLECTION OF FLIGHT DOCUMENTATION IN JANUARY, 2026

Flight documentation is a structured package of meteorological information prepared by the Nigerian Meteorological Agency (NiMet) and issued to airline operators and flight crew prior to departure. It contains time-critical weather information for the departure, destination, alternate, and en-route aerodromes, covering conditions from the surface up to the planned cruising flight levels.

This service is provided by NiMet through designated Aerodrome Meteorological Offices in Kano, Abuja, Lagos, Port Harcourt and Enugu.

Abuja Airport

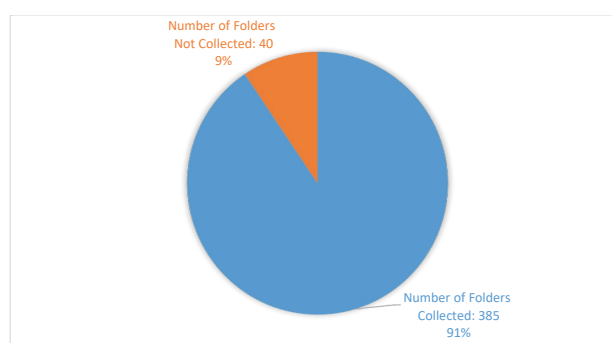


Figure 26: Flight Documentation Analysis for Nnamdi Azikiwe International Airport, for January,2026

The total number of flight documentation folders prepared at NiMet's aerodrome meteorological office Abuja airport in January 2026 was 425, out of which 385 were collected, representing 91% collection rate; while 40 were not collected, representing 9% of the total folders prepared (see Figure 26).

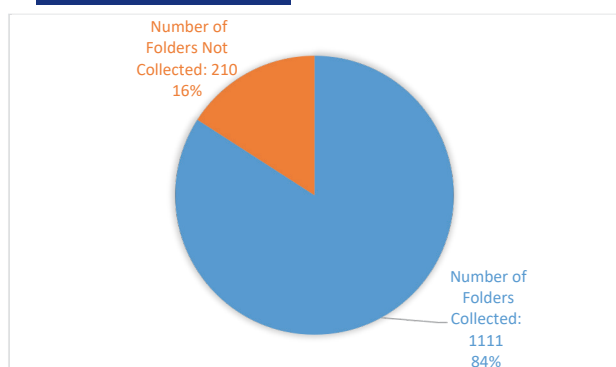
Lagos Airport

Figure 27: Flight Documentation Analysis for Murtala Mohammed International Airport, Lagos for January 2026

The total number of flight documentation folders prepared in March, 2026 at Murtala Muhammed International Airport, Ikeja was, 1321 out of which 1111 were collected, representing 84% collection rate; while 210 were not collected, resenting 16% of the total folders prepared. (See Figure 27)

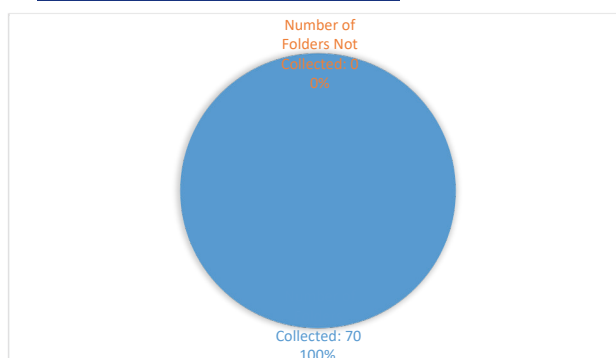
Port Harcourt Airport

Figure 29: Flight Documentation analysis for Port Harcourt International Airport for January 2026.

The total number of flight documentation folders prepared in the month of January, 2026 at Port Harcourt International Airport, Port Harcourt was 70, out of which 70 were collected, representing 100% collection rate. (See Figure 29).

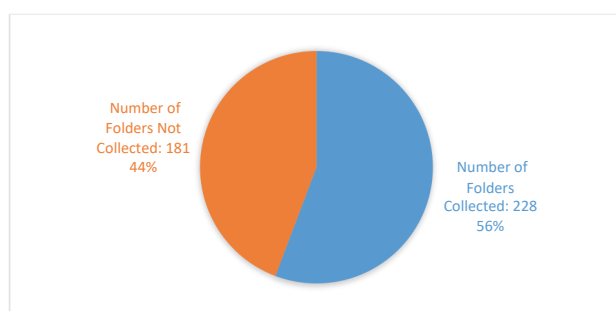
Kano Airport

Figure 28: Flight Documentation Analysis for Mallam Aminu Kano International Airport, Kano for January 2026.

In January 2026, a total of 409 flight documentation folders were prepared at NiMet's aerodrome meteorological office, Kano airport, out of which 228 were collected, representing a 56% collection rate, while 181 were not collected, which represents 44% of the total. (See Figure 28)

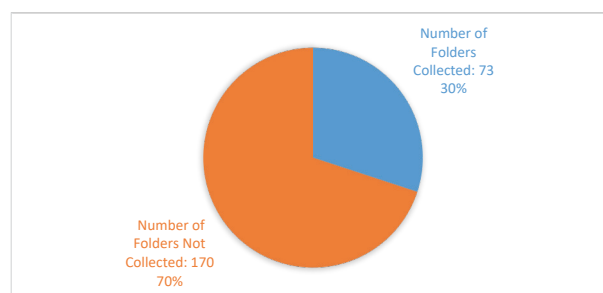
Enugu Airport

Figure 30: Flight Documentation Analysis for Akanu Ibiam International Airport, Enugu for January 2026.

The total number of flight documentation folders prepared in January 2026 at Akanu Ibiam International Airport, Enugu was 243, out of which 73 were collected, representing 30% collection rate; while 170 were not collected, representing 70% of the total folders prepared (See Figure 30).

TABLE 1: SUMMARY OF FLIGHT DOCUMENTATION FOLDER COLLECTION FOR JANUARY 2026

Airport (Station)	Number of Folders Prepared	Number of Folders Collected	Number of Folders not Collected	Collection Rate (%)
Nnamdi Azikiwe, Abuja	425	385	40	91
Murtala Muhammed, Lagos	1321	1111	210	84
Mallam Aminu Kano, Kano	409	228	181	56
Port Harcourt International Airport	70	70	0	100
Akanu Ibiam Airport, Enugu	243	73	170	30
Total	2468	1867	601	76

Table 1 shows that Port Harcourt International Airport recorded the highest collection rate of 100% in January 2026, while Akanu Ibiam International Airport, Enugu recorded the lowest collection rate of 30% for the month.

3.3 AERODROME WARNING

An Aerodrome Warning is a critical safety alert issued by Nigeria Meteorological agency (NiMet) to notify airport operators, airlines, ground handlers, and other aviation stakeholders of expected or occurring meteorological conditions at an aerodrome that may pose a hazard to ground operations or airport infrastructure.

Aerodrome Warnings typically cover hazardous weather phenomena on or near the aerodrome, such as:

- Thunderstorms and lightning
- Strong surface winds / wind gusts
- Heavy rain or hail
- Sandstorms or dust storms
- Fog formation affecting ground visibility
- Extreme temperatures
- Snow or ice (in regions where applicable)

These phenomena may not directly affect aircraft in flight, but significantly impact ground activities and airport safety.

3.3.1 SIGNIFICANCE OF AERODROME WARNINGS TO AVIATION SAFETY

Aerodrome Warnings are essential for maintaining safe and efficient airport operations. Their importance includes:

1. Protection of Ground Personnel and Equipment

Alerts enable ground staff to suspend fueling, loading, de-icing, and maintenance activities during hazardous conditions. Prevents accidents caused by lightning strikes, falling objects in high winds, or poor visibility.

2. Safety of Aircraft on the Ground

Aircraft parked on the apron or taxiing may be at risk from strong winds, hail, debris, or low visibility. Warnings support decisions to secure aircraft, adjust pushback/taxi operations, or delay departures.

3. Efficient Airport Management

Airport authorities use warnings for resource planning, including closing ramps, adjusting staffing, or activating emergency procedures. Helps mitigate operational disruptions and reduces financial losses.

4. Prevention of Equipment and Infrastructure Damage

Protects critical assets such as: Ground power units (GPUs), Jet bridges, Navigation aids (NAVAIDs), Radars and communication equipment

5. Enhanced Situational Awareness

Provides timely meteorological awareness to all airport stakeholders. Supports decision-making for air traffic control (ATC), airlines, and airport emergency units.

6. Compliance With ICAO Standards

Port Harcourt International Airport, issued two (2), while Akanu Ibiam International Airport, Enugu and Nnamdi Azikiwe International Airport, Abuja did not issue and aerodrome warnings during the month under review.

3.3.2 AERODROME WARNING ISSUED AT THE FIVE INTERNATIONAL AIRPORTS IN JANUARY 2026

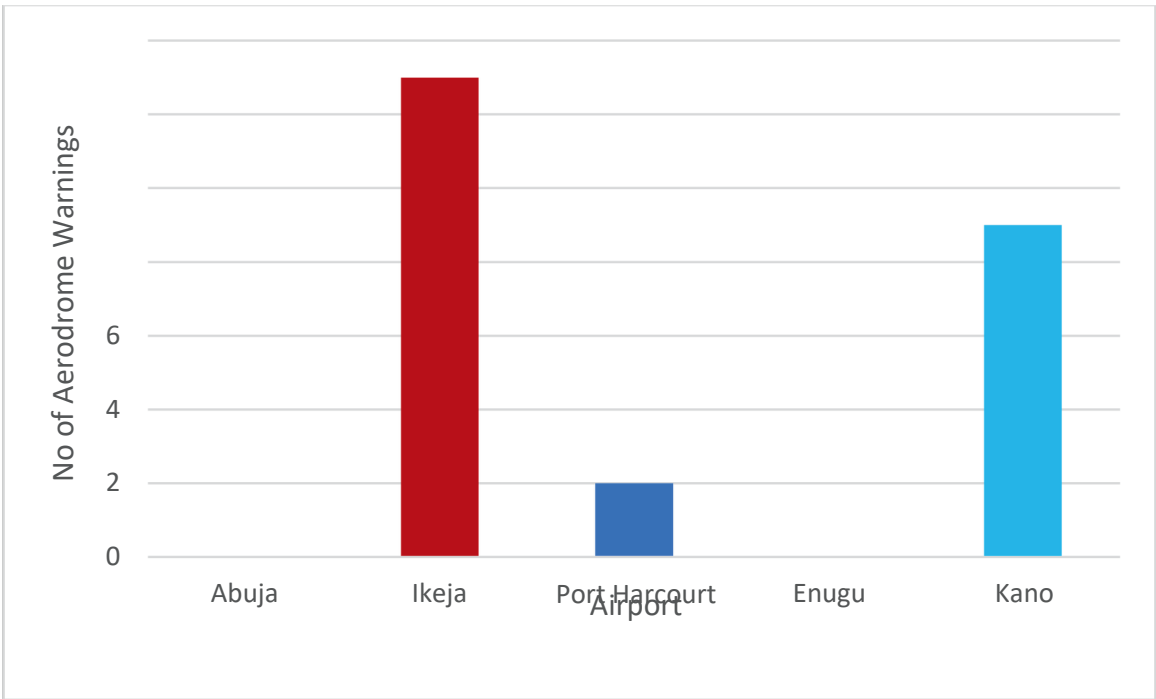


Figure 31: Aerodrome Warning Issued at the Five International Airports in January 2026

As shown in figure 1, Murtala Muhammed International Airport, Lagos, issued the highest number of aerodrome warnings for the month of January 2026, with a total number of thirteen (13). This was followed by Mallam Aminu Kano International Airport with nine (9);

FEBRUARY 2026

4.01 REVIEW OF THE POSITION OF THE INTER-TROPICAL DISCONTINUITY (ITD) OVER NIGERIA IN FEBRUARY 2026

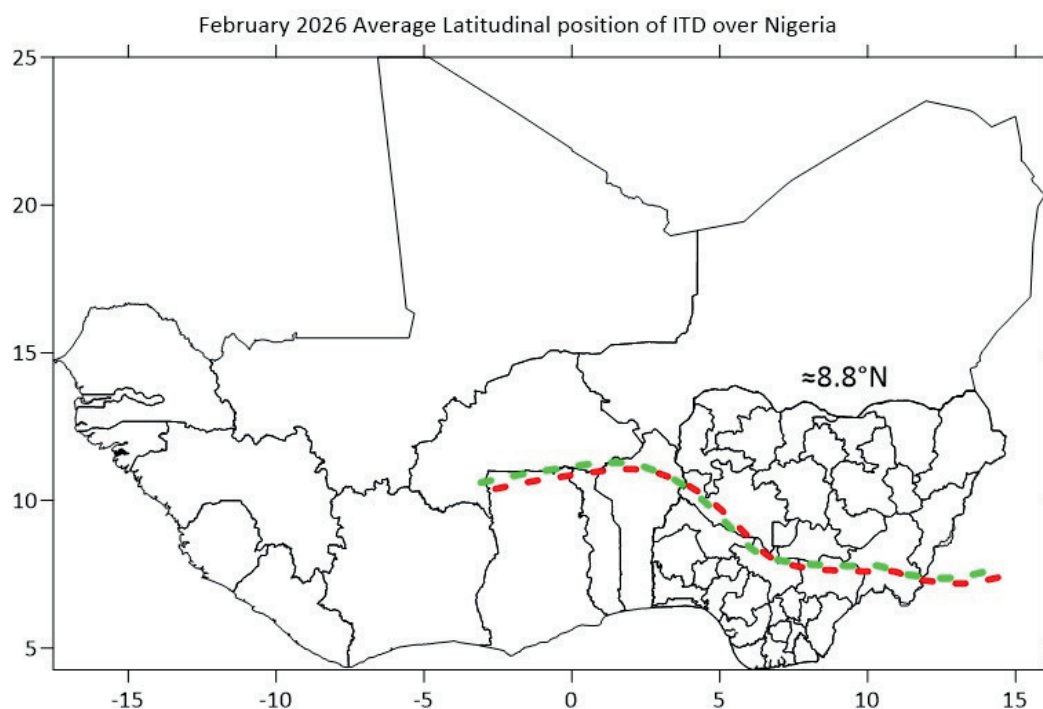


Figure 33: Mean Position of the ITD in February, 2026.

In February 2026, the Intertropical Discontinuity (ITD), which separates the dry and dusty north-easterly continental air mass from the moist south-westerly maritime air mass, maintained a gradual northward progression across Nigeria. This movement reflected the seasonal transition from the peak of the dry Harmattan season toward the early onset phase of the rainy season over the southern and central parts of the country.

The mean position of the ITD in February 2026 was latitude 8.8°N , extending across the southern to central regions of Nigeria. During this period, the dry continental air mass continued to dominate much of northern Nigeria, resulting in predominantly dry weather

conditions, low atmospheric moisture content, hazy visibility, and relatively large diurnal temperature ranges.

Harmattan conditions remained evident across the northern states, although their intensity gradually weakened as the month progressed. The increasing penetration of moist maritime airflow enhanced atmospheric humidity and convective activities. Consequently, isolated and occasional thunderstorms and light rainfall events were recorded, particularly over the southern coastal areas and adjoining inland locations. These conditions signified the gradual transition from dry season dominance toward a pre-rainy season atmospheric regime across Nigeria.

4.0.2 TEMPERATURE FLUCTUATIONS IN FEBRUARY 2026

Air temperature is a critical meteorological variable with direct implications for aircraft performance during take-off, cruising and landing, changes in temperature influence air density and, consequently, affect engine thrust, aerodynamic lift, and take-off roll requirements. Elevated temperatures reduce air density, resulting in reduced engine efficiency and longer take-off distances while lower temperatures increase air density and generally improve aircraft performance. In February 2026, notable spatial temperature variability was observed across the country:

Maximum Temperature: In February 2026, the highest maximum temperature of 39.8°C was recorded at Nnamdi Azikiwe International Airport, Abuja. This reflects the intense daytime heating associated with the dry season and the gradual northward retreat of the Harmattan air mass as the season transitioned towards wetter conditions. In contrast, the lowest maximum temperature of 28.3°C was recorded at Murtala Muhammed International Airport, Lagos, owing to increased atmospheric moisture, enhanced cloud cover, and increasing influence of maritime air flow.

Minimum Temperature: The highest minimum temperature of 34.8°C was recorded at Port Harcourt International Airport in February 2026, indicating strong nocturnal heat retention resulting from high humidity levels, persistent cloudiness, and reduced radiative cooling. Conversely, the lowest minimum temperature of 9.6°C was observed at Nnamdi Azikiwe International Airport,

Abuja, reflecting enhanced radiational cooling under relatively clear night-time conditions and the lingering influence of dry continental air.

Mean Temperature: The highest mean temperature of 31.3°C was recorded at both Abuja and Enugu airports. This was attributable to sustained daytime heating combined with relatively warm nighttime conditions. In contrast, the lowest mean temperature 29.9°C was recorded at Kano airport reflecting comparatively cooler atmospheric conditions influenced by lower humidity levels and more efficient nocturnal cooling.

Summary: Overall, the temperature distribution across Nigeria in February 2026 exhibited significant spatial variability, primarily driven by differences in solar heating, cloud cover, atmospheric moisture content, and the changing position of the Intertropical Discontinuity (ITD). The northern and central states of the country experienced pronounced daytime heating, resulting in elevated maximum temperatures, while the southern coastal regions recorded relatively lower daytime temperatures due to increased cloudiness and maritime influence. However, higher minimum temperatures persisted at the airports in southern Nigeria because of enhanced humidity and greater nocturnal heat retention. These temperature patterns are consistent with the climatological characteristics of February, which marks the transition from the dry season towards the onset of wetter conditions across southern Nigeria.

4.1 OBSERVED MEAN DAILY TEMPERATURE ($T_{\text{MEAN}}^{\circ\text{C}}$) AT THE AIRPORTS IN FEBRUARY 2026.

Abuja Airport

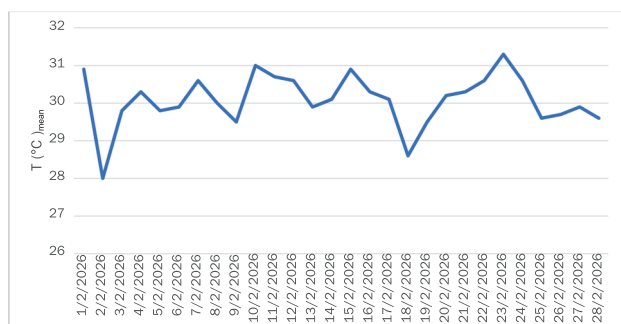


Figure 32: Daily Mean Temperature at Nnamdi Azikiwe International Airport, Abuja in February, 2026.

In February 2026, the highest mean temperature that occurred at Abuja airport was 31.3°C . This was recorded on the 23rd, while the lowest value recorded was 28.0°C on the 2nd of the same month. (See Figure 32).

Kano Airport

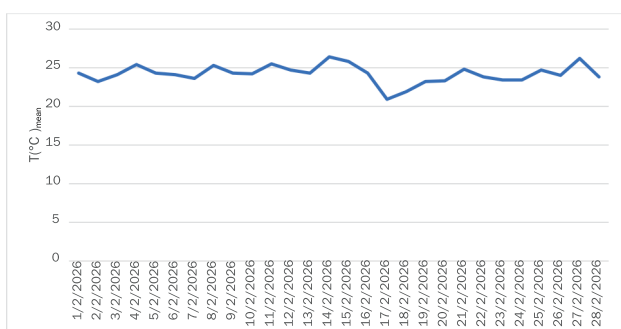


Figure 33: Daily mean Temperature at Mallam Aminu Kano International Airport, Kano in February, 2026.

In February 2026, the highest mean temperature that occurred at Kano airport was 26.4°C . This was recorded on the 14th, while the lowest recorded was 20.9°C on the 17th of the same month. (See Figure 33).

Enugu Airport

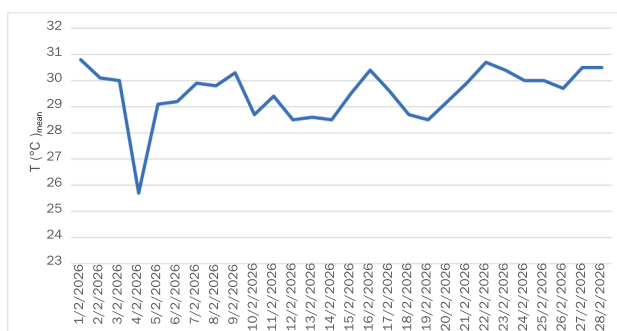


Figure 34: Mean Daily Temperature at Akanu Ibiam International Airport, Enugu in February, 2026.

In February 2026, the highest mean temperature recorded at Enugu airport was 30.8°C . This was observed on the 1st, while the lowest, 25.7°C , occurred on the 4th of the same month. (See Figure 34).

Lagos Airport

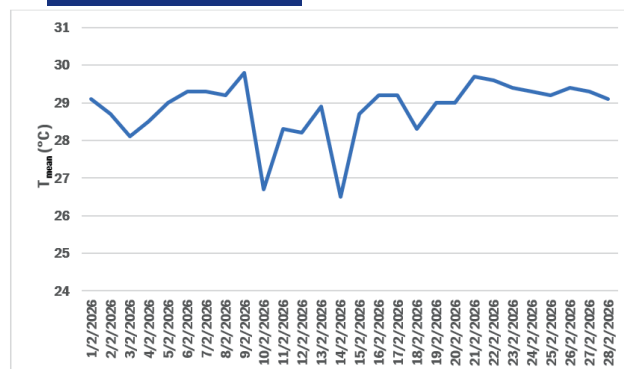


Figure 35: Mean Daily Temperature at Murtala Muhammed International Airport, Lagos in February, 2026.

In February 2026, the highest mean temperature that occurred at the Lagos airport was 29.8°C . This was recorded on the 9th while the lowest, 26.5°C , occurred on the 14th of the same month. (See Figure 35).

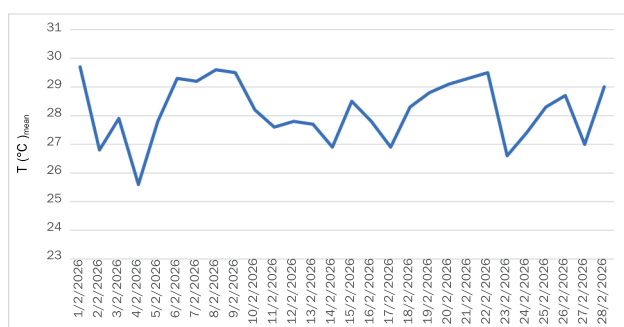
Port Harcourt Airport

Figure 36 Daily Mean Temperature at Port Harcourt International Airport in February, 2026.

In February 2026, Port Harcourt International Airport recorded 29.7°C as the highest mean temperature on the 1st, while the lowest of 25.6°C, was recorded on the 4th of the month. (See Figure 36).

4.2 OBSERVED MAXIMUM TEMPERATURE (T_{MAX}) °C AT THE AIRPORTS IN FEBRUARY, 2026.

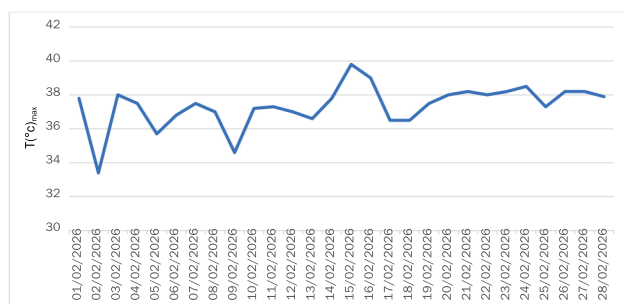
Abuja Airport

Figure 37: Daily Maximum Temperature at Nnamdi Azikiwe International Airport, Abuja in February, 2026.

As depicted in Figure 37, the highest maximum temperature recorded at Abuja airport in February, 2026. was 39.8°C. This was observed on the 15th, while the lowest, 33.4°C, was recorded on the 2nd of the month.

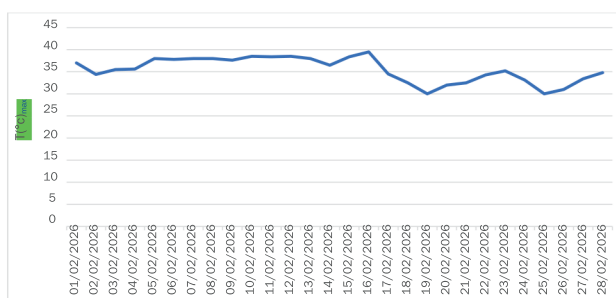
Kano Airport

Figure 38: Daily Maximum Temperature at Mallam Aminu Kano International Airport, Kano in February, 2026.

As depicted in Figure 38, the highest maximum temperature recorded at Kano airport in February 2026 was 39.5°C. This was observed on the 16th while the lowest, 30.0°C, was recorded on the 19th and 25th of the same month.

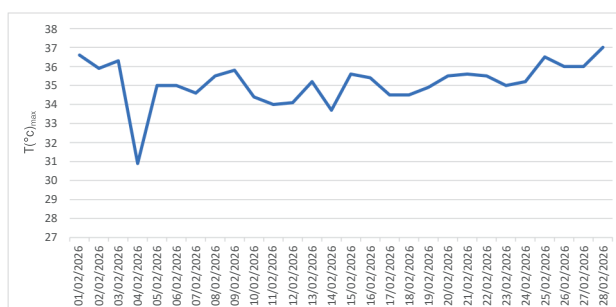
Enugu Airport

Figure 39: Daily Maximum Temperature at Akanu Ibiam International Airport, Enugu in February, 2026.

As depicted in Figure 39, the highest maximum temperature recorded at Enugu airport in February, 2026 was 37.0°C, observed on the 28th while the lowest, 30.9°C, was recorded on the 4th of the same month.

Lagos Airport

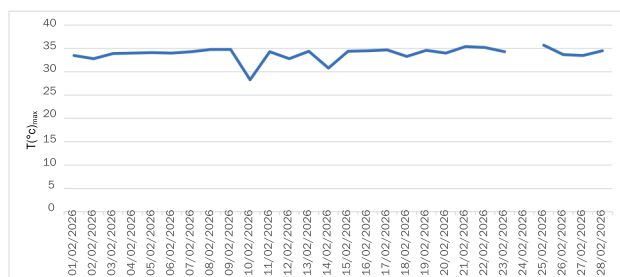


Figure 40: Daily Maximum Temperature at Murtala Muhammed International Airport, Lagos in February, 2026.

As depicted in Figure 40, the highest maximum temperature recorded at Lagos airport in February, 2026 was 35.7°C, observed on the 25th, while the lowest, 28.3°C, was recorded on the 10th of the same month.

Port Harcourt Airport

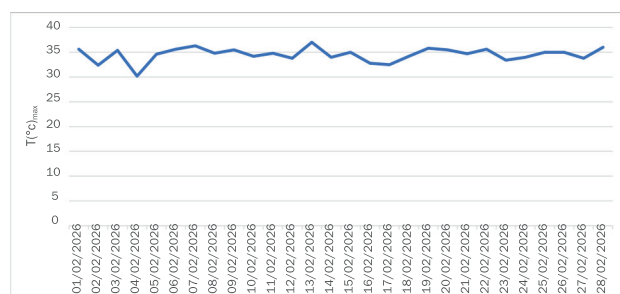


Figure 41: Daily Maximum Temperature at Port Harcourt International Airport in February, 2026.

As depicted in Figure 41, the highest maximum temperature recorded at Port Harcourt airport in February, 2026 was 37.0°C, observed on the 13th, while the lowest, 30.2°C, was recorded on the 4th of the same month.

4.3 OBSERVED MINIMUM TEMPERATURE ($T_{\min}$) °C AT THE AIRPORTS IN FEBRUARY, 2026.

Abuja Airport

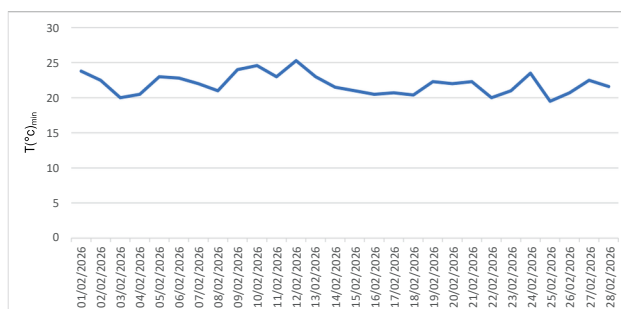


Figure 42: Daily Minimum Temperature at Nnamdi Azikiwe International Airport, Abuja in February, 2026.

The highest minimum temperature recorded at Nnamdi Azikiwe airport was 25.3°C. This was recorded on the 12th of February 2026, while the lowest, 19.5°C, was observed on the 25th of the same month. (See Figure 42)

Kano Airport

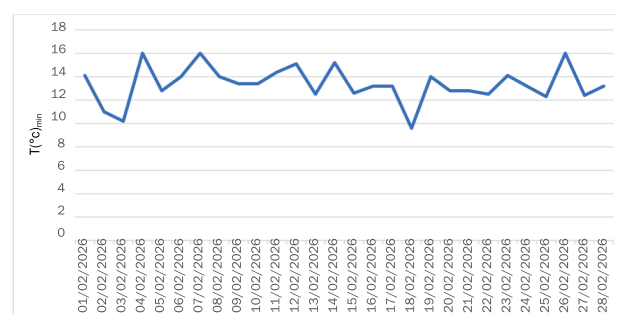


Figure 43: Daily Minimum Temperature at Mallam Aminu Kano International Airport Kano in February, 2026.

In February 2026, the highest minimum temperature of 16.0°C was recorded at the Kano airport on the 4th, 7th and 26th of February 2026 while the lowest, 9.6°C, was observed on the 18th of the same month. (See Figure 43).

Enugu Airport

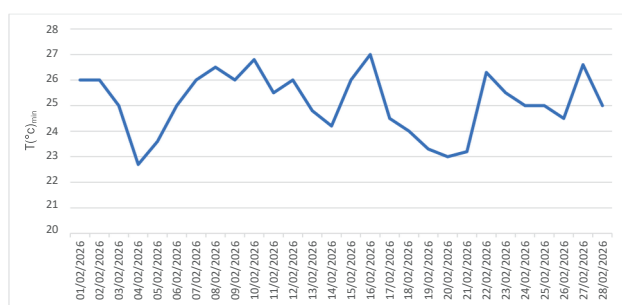


Figure 44: Daily Minimum Temperature at Akanu Ibiam International Airport, Enugu in February, 2026.

The highest minimum temperature of 27.0°C was recorded at Enugu airport on the 16TH of February, 2026, while the lowest, 22.7°C, was observed on the 4TH of the same month. (See Figure 44).

Port Harcourt Airport

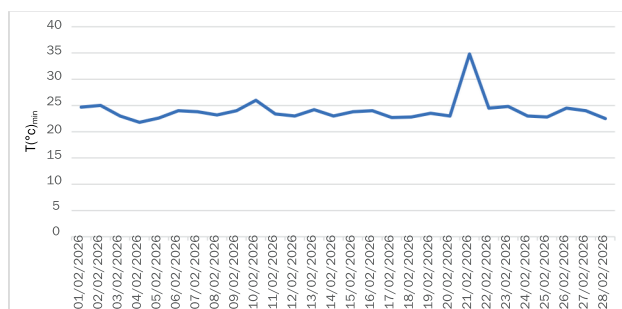


Figure 45: Daily Minimum Temperature at Port Harcourt International Airport in February, 2026.

The highest minimum temperature of 34.8°C was recorded at the Port Harcourt airport on the 21st of February, 2026, while the lowest, 21.8°C, was observed on the 4th of the same month. (See Figure 45).

4.4 OBSERVED VISIBILITY AT THE FIVE INTERNATIONAL AIRPORTS IN FEBRUARY, 2026.

Abuja Airport

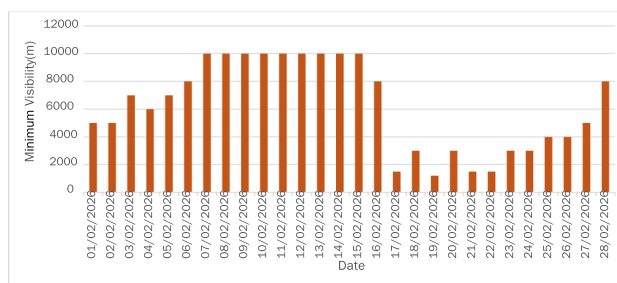


Figure 46: Daily Visibility at Nnamdi Azikiwe Airport, Abuja in February, 2026

As shown in Figure 46, visibility of 5000 m and below were recorded at Abuja airport for thirteen (13) non-consecutive days in February 2026, and the lowest was 1200 m, recorded on the 19th of the same month.

Enugu Airport

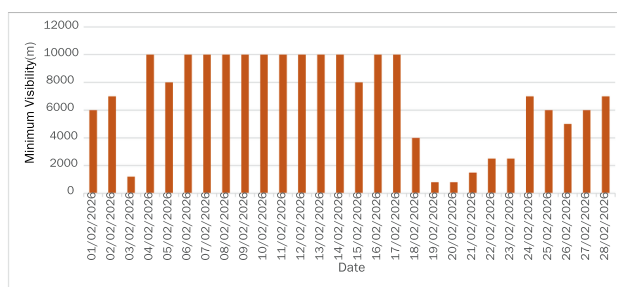


Figure 47: Daily Visibility in February, 2026 at Akanu Ibiam Airport, Enugu

As shown in Figure 46, visibility of 5000m and below were recorded at Enugu airport for seven (7) non-consecutive days in February 2026. The lowest, being 800m, recorded on 19th and 20th of the month.

Lagos Airport

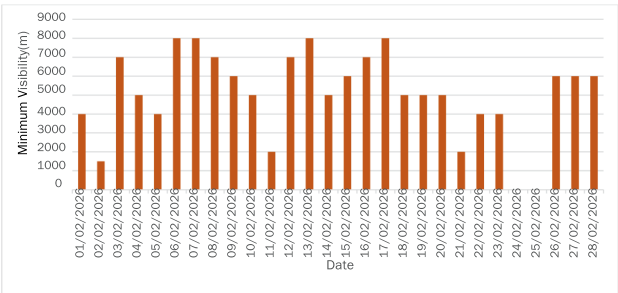


Figure 48: Daily Visibility in in February, 2026 at Murtala Muhammed International Airport, Lagos

As shown in Figure 48, visibility of 5000 m and below were recorded at Lagos airport on thirteen (13) non-consecutive days in February 2026, and the lowest was 1500 m, recorded on 2nd of the month.

Kano Airport

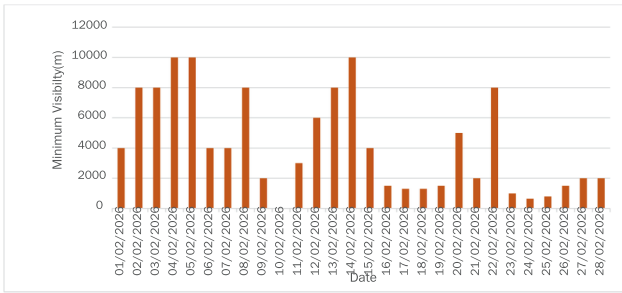


Figure 50: Daily Visibility in February, 2026 at Mallam Aminu Kano International Airport, Kano

As shown in Figure 50 visibility 5000m and below were recorded at Mallam Aminu Kano International Airport for eighteen (18) non-consecutive days in February 2026, and the lowest was 0650m, recorded on 24th of the month.

Port Harcourt Airport

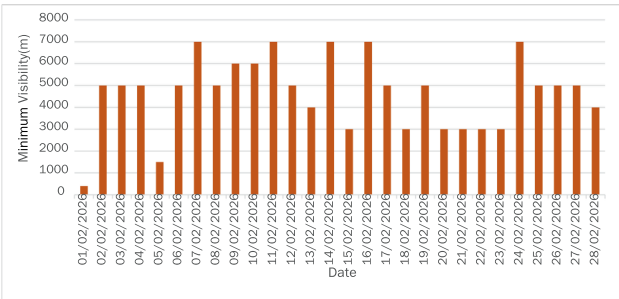


Figure 49: Daily Visibility in February, 2026 at Port Harcourt International Airport

As shown in Figure 49, visibility of 5000 m and below were recorded at port Harcourt airport for twenty-one (21) non-consecutive days in February 2026, and the lowest was 0400 m, recorded on 1st of the month.

5.0 OBSERVED DAILY RAINFALL AT VARIOUS AIRPORTS IN NIGERIA IN FEBRUARY 2026

Lagos Airport

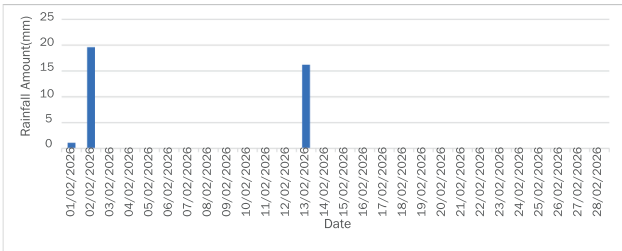


Figure 51: Daily Rainfall at Murtala Muhammed International Airport, Lagos in February 2026.

The highest rainfall recorded at the Lagos airport in February 2026 was 19.6mm. This was recorded on the 2nd of the month, while the lowest recorded during the period was 1.1mm on the 1st of the month. The total amount of rainfall for the month was 36.9mm (See Figure 51)

Port Harcourt Airport

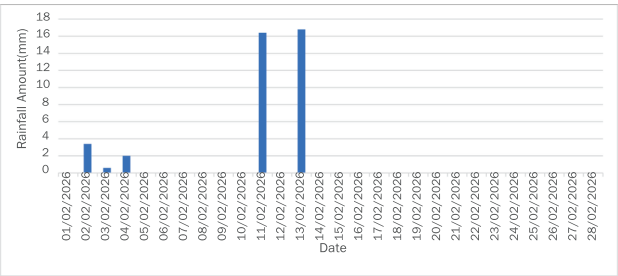


Figure 52: Daily Rainfall at Port Harcourt International Airport in February 2026

The highest rainfall recorded at the Port Harcourt airport in February 2026 was 16.8mm. This was recorded on the 13th of the month, while the lowest recorded during the period was 0.6mm on 3rd of the month respectively. The total amount of rainfall for the month was 39.2mm (See Figure 52).

Abuja Airport

There was no rainfall recorded in the month of February at Abuja

Enugu Airport

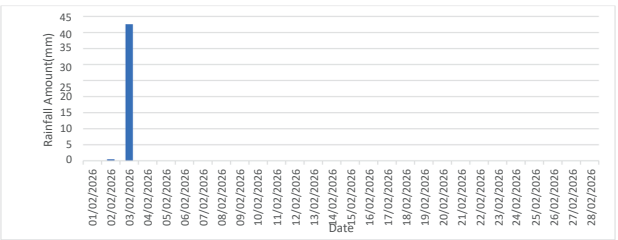


Figure 53: Daily Rainfall at Akanu Ibiam International Airport, Enugu in February 2026.

The highest rainfall recorded at the Enugu airport in February 2026 was 42.6mm. This was recorded on the 3rd of the month, while the lowest recorded during the period was 0.5mm on the 2nd of the month. The total amount of rainfall for the month was 43.1mm (see Figure 53).

Kano Airport

There was no rainfall recorded in the month of November at Kano Airport

5.0 (F) NUMBER OF RAIN DAYS AT THE FIVE INTERNATIONAL AIRPORTS IN FEBRUARY 2026.

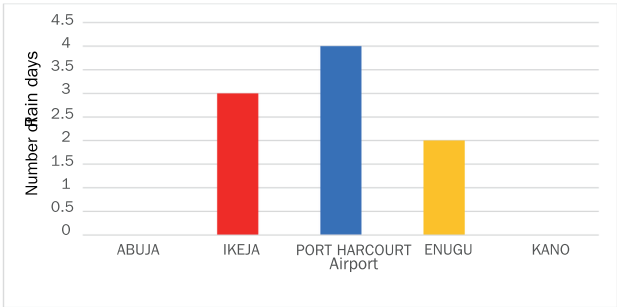


Figure 54: Number of Rain Days at the five Airports in the month of February 2026.

As shown in Figure 54, Port Harcourt International Airport recorded the highest number of rainy days in February 2026, with a total of four (4) days. This was followed by Murtala Muhammed International Airport, Ikeja, with three (3) rainy days; Enugu International Airport recorded two (2) days of rainfall. While Nnamdi Azikiwe International Airport, Abuja and Aminu Kano International Airport, Kano, did not record any rainfall occurrence during the month under review.

5.1 DAILY OBSERVED THUNDERSTORM OCCURRENCES AT THE FIVE INTERNATIONAL AIRPORTS IN FEBRUARY, 2026.

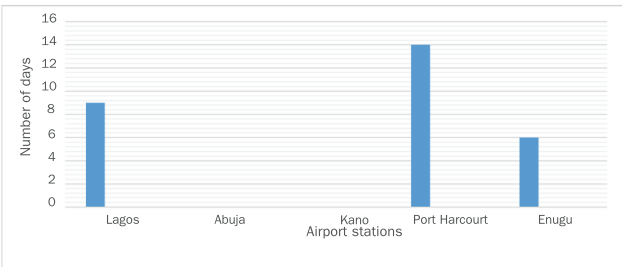


Figure 55: Thunderstorm Occurrence at the Five International Airport in November, 2025.

As illustrated in Figure 55, the frequency of thunderstorm occurrence varied across the five international airports in February 2026. Port Harcourt International Airport recorded the highest number of thunderstorm events, with fourteen (14) occurrences during the month. This was followed by Murtala Muhammed International Airport, Lagos, which recorded nine (9) events, while Akanu Ibiam International Airport, Enugu, recorded six (6) events. In contrast, Nnamdi Azikiwe International Airport, Abuja, and Mallam Aminu Kano International Airport, Kano, recorded no thunderstorm occurrences during the month under review.

The observed spatial distribution of thunderstorm activity reflects the seasonal position and gradual northward progression of the Intertropical Discontinuity (ITD) during February 2026. Although the ITD remained south of the northern parts of the country, its gradual advance enhanced low-level moisture transport and atmospheric instability over the southern and coastal regions. These conditions favoured the development of isolated to scattered convective thunderstorms, particularly over the Niger Delta and adjoining coastal areas, resulting in the increased frequency of thunderstorm events recorded at Port Harcourt, Lagos, and Enugu airports.

Conversely, the absence of thunderstorm activity at Abuja and Kano airports was associated with the continued dominance of the dry and stable north-easterly continental air mass over the northern and some parts of central Nigeria. The prevalence of dry atmospheric conditions, reduced moisture availability, and limited

convective instability suppressed the development of deep convective clouds and thunderstorm activity across these locations.

The distribution of thunderstorm occurrences in February 2026 is consistent with the climatological transition from the dry season toward the early rainy season over southern Nigeria, with convective activities largely confined to the southern states, while northern and central areas remained under predominantly dry-season conditions.

5.2 PRODUCTION AND COLLECTION OF FLIGHT DOCUMENTATION FOLDERS IN FEBRUARY, 2026.

Abuja Airport

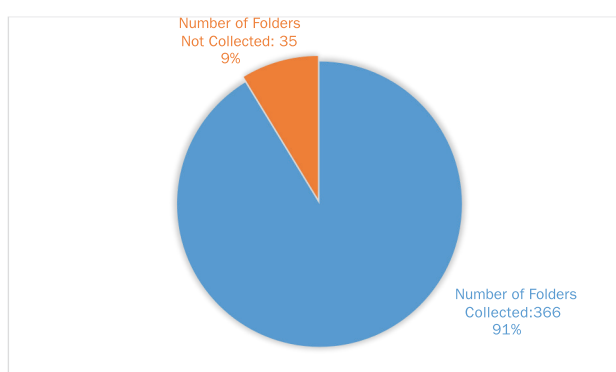


Figure 54: Flight Documentation analysis for Nnamdi Azikiwe International Airport, Abuja February, 2026.

In the month of February, 2026, the total number of flight documentation folders prepared at Nnamdi Azikiwe International Airport Abuja was 401, out of which 366 were collected, representing 91% collection rate; while 35 were not collected, representing 9% of the total folders prepared (See Figure 54).

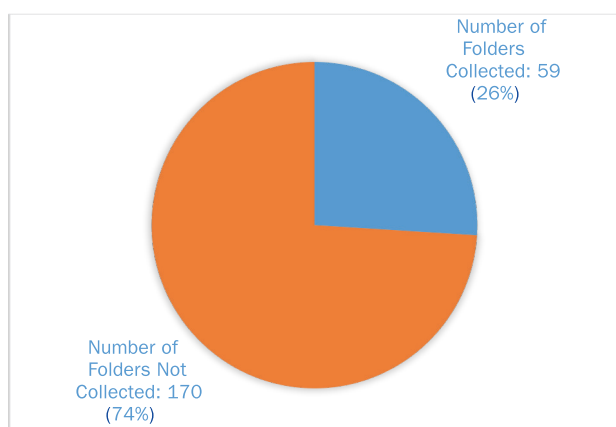
Enugu Airport

Figure 56: Flight Documentation analysis for Akanu Ibiam International Airport, Enugu in February, 2026.

In the month of February, 2026 at Akanu Ibiam International Airport, Enugu the total number of flight documentation folders prepared was 227, out of which 59 were collected, representing 26% collection rate; while 168 were not collected, representing 74% of the total folders prepared (See Figure 56).

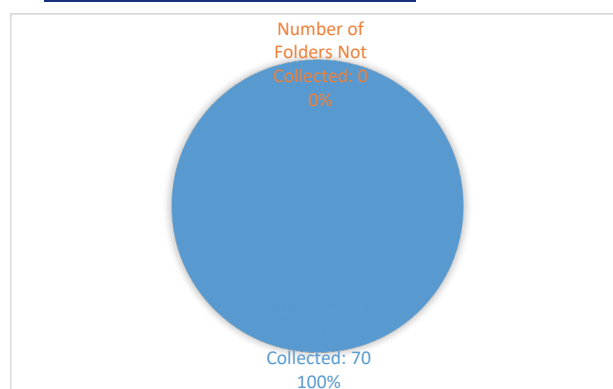
Port Harcourt Airport

Figure 58: Flight Documentation analysis for Port Harcourt International Airport in February, 2026.

The total number of flight documentation folders prepared in the month of January, 2026 at Port Harcourt International Airport, Port Harcourt was 70, out of which 70 were collected, representing 100% collection rate of the total folders prepared. (See Figure 58)

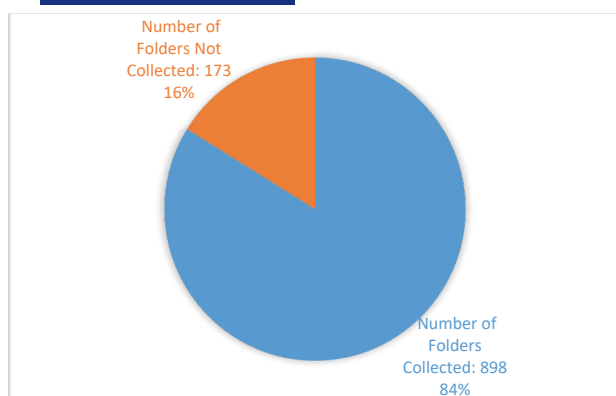
Lagos Airport

Figure 57: Flight Documentation analysis for Murtala Muhammed International Airport, Ikeja, in February, 2026.

In the month of February, 2026, the total number of flight documentation folders prepared at Murtala Muhammed International Airport, Ikeja was 1071, out of which 898 were collected, representing 84% collection rate; while 173 were not collected, representing 16% of the total folders prepared. (See Figure 57)

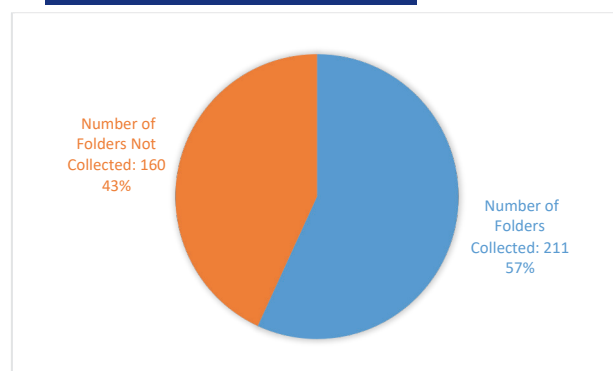
Kano Airport

Figure 59: Flight Documentation analysis for Mallam Aminu Kano International Airport, Kano in February, 2026.

The total number of flight documentation folders prepared in the month of February, 2026 at Mallam Aminu Kano International Airport, Kano was 371, out of which 211 were collected, representing 57% collection rate; while 160 were not collected, representing 43% of the total folders prepared. (See Figure 59).

TABLE 2: SUMMARY OF FLIGHT DOCUMENTATION FOLDERS PRODUCED AND COLLECTED IN IN FEBRUARY, 2026.

Aerodrome Meteorological Office	Number of Folders Prepared	Number of Folders Collected	Number of Folders not Collected	Collection Rate (%)
Nnamdi Azikiwe, Abuja	401	366	35	91
Murtala Muhammed, Lagos	1071	898	173	84
Mallam Aminu Kano, Kano	371	211	160	57
Port Harcourt International Airport	22	22	0	100
Akanu Ibiam Airport, Enugu	227	59	168	26
TOTAL	2092	1556	536	74

Table 2 shows that Port Harcourt International Airport recorded the highest collection rate of 100% in February, 2026, while Akanu Ibiam International Airport, Enugu recorded the lowest collection rate of 26% for the month.

5.3 AERODROME WARNING

An Aerodrome Warning is a critical safety alert issued by the Nigeria Meteorological Agency (NiMet) to notify airport operators, airlines, ground handlers, and other aviation stakeholders of expected or occurring meteorological conditions at an aerodrome that may pose a hazard to ground operations or airport infrastructure.

Aerodrome Warnings typically cover hazardous weather phenomena on or near the aerodrome, such as:

- Thunderstorms and lightning
- Strong surface winds / wind gusts
- Heavy rain or hail
- Sandstorms or dust storms
- Fog formation affecting ground visibility
- Extreme temperatures
- Snow or ice (in regions where applicable)

These phenomena may not directly affect aircraft in flight, but significantly

impact ground activities and airport safety.

5.3.1 SIGNIFICANCE OF AERODROME WARNINGS TO AVIATION SAFETY

Aerodrome Warnings are essential for maintaining safe and efficient airport operations. Their importance includes:

1. Protection of Ground Personnel and Equipment

Alerts enable ground staff to suspend fueling, loading, de-icing, and maintenance activities during hazardous conditions. Prevents accidents caused by lightning strikes, falling objects in high winds, or poor visibility.

2. Safety of Aircraft on the Ground

Aircraft parked on the apron or taxiing may be at risk from strong winds, hail, debris, or low visibility. Warnings support decisions to secure aircraft, adjust pushback/taxi operations, or delay departures.

3. Efficient Airport Management

Airport authorities use warnings for resource planning, including closing ramps, adjusting staffing, or activating emergency procedures. Helps mitigate operational disruptions and reduces financial losses.

4. Prevention of Equipment and Infrastructure Damage

Protects critical assets such as: Ground power units (GPUs), Jet bridges, Navigation aids (NAVAIDs), Radars and communication equipment

5. Enhanced Situational Awareness

Provides timely meteorological awareness to all airport stakeholders. Supports decision-making for air traffic control (ATC), airlines, and airport emergency units.

6. Compliance With ICAO Standards

5.3.2 AERODROME WARNINGS ISSUED AT THE FIVE INTERNATIONAL AIRPORTS IN FEBRUARY, 2026.

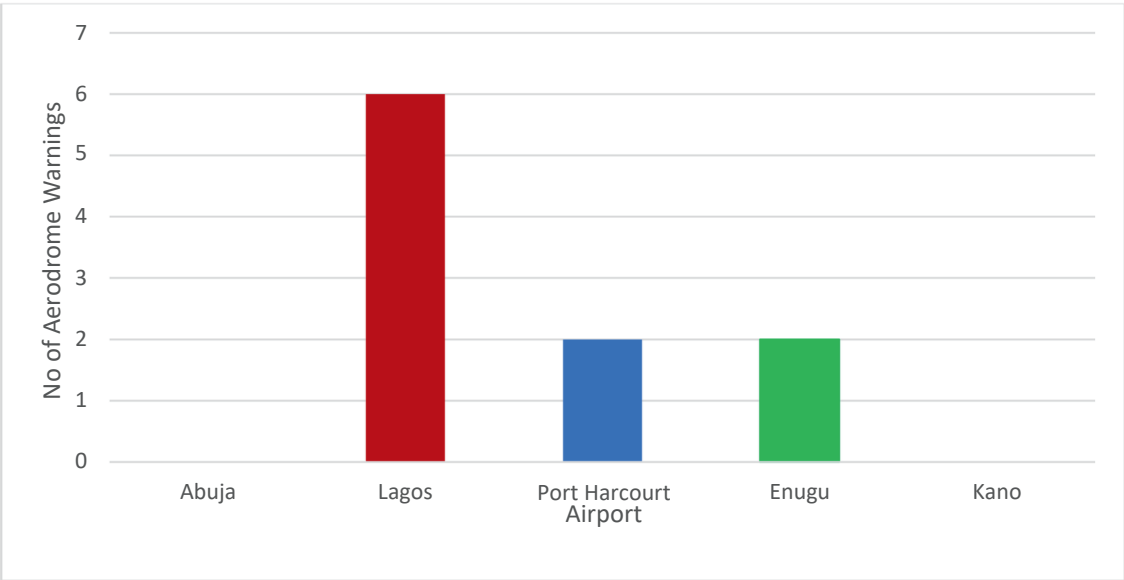


Figure 60: Aerodrome warning issued at the five international Airports in February, 2026.

As shown in Figure 60, Murtala Muhammed International Airport, Lagos issued the highest number of aerodrome warnings for the month of February 2026, with a total number of six (6). This was followed by Port Harcourt International Airport and Akanu Ibiam International Airport, Enugu with two (2) occurrences. Mallam Aminu Kano international Airport, Kano and Nnamdi Azikiwe international airport Abuja did not issue any aerodrome warning for the month under review.

MARCH 2026

5.0.1 REVIEW OF THE POSITION OF THE INTER-TROPICAL DISCONTINUITY (ITD) OVER NIGERIA IN MARCH 2026

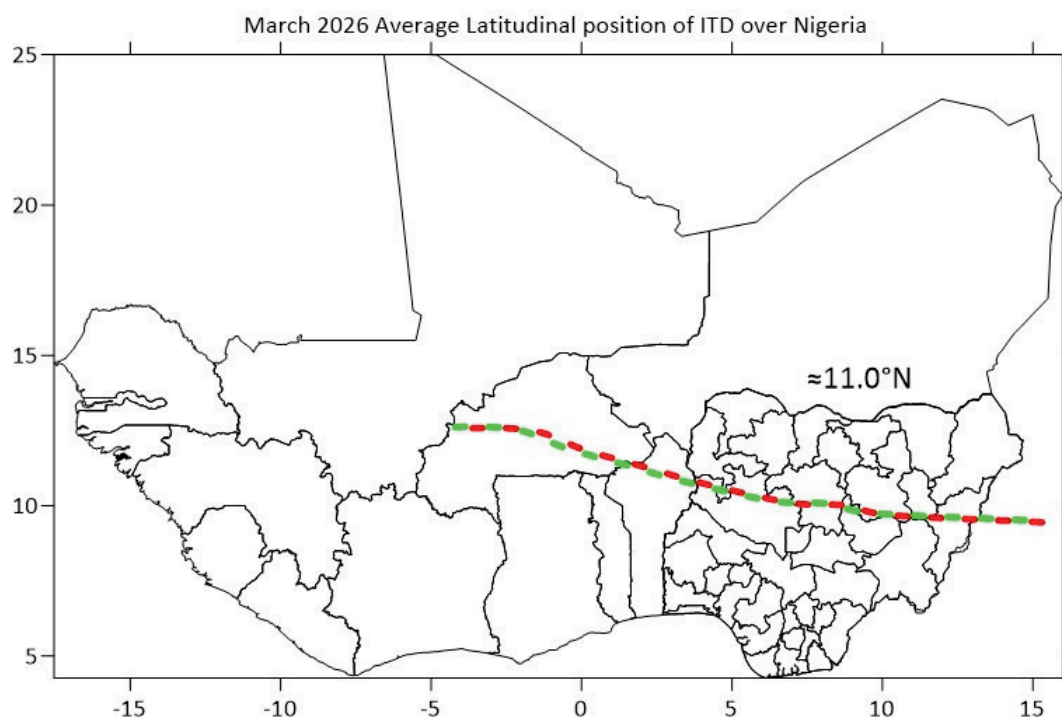


Figure 61: Mean Position of the ITD in March 2026

During March 2026, the Intertropical Discontinuity (ITD) continued its seasonal northward migration across Nigeria, attaining a mean position of approximately 11.0°N. This northward displacement reflects the gradual transition from the dry-season regime dominated by the northeasterly continental air mass to the increasing influence of the moist south-westerly maritime air mass from the Atlantic Ocean. The movement of the ITD is a key indicator of the seasonal shift towards the rainy season over Nigeria.

The southern and parts of the central states remained predominantly south of the ITD and were therefore under the influence of the moist south-westerly monsoon flow.

Consequently, these areas experienced relatively high humidity levels, increased cloud cover, and more frequent occurrences of rainfall and thunderstorm activities associated with the onset of the rainy season.

In contrast, much of northern Nigeria remained north of the ITD and continued to experience the influence of the dry northeasterly continental air mass. As a result, weather conditions across the region were generally characterized by low humidity, dry and occasionally hazy conditions, and comparatively cooler night-time temperatures. However, the intensity of Harmattan conditions gradually weakened during the month as the ITD advanced northward.

5.0.2 TEMPERATURE FLUCTUATIONS IN MARCH 2026

Air temperature is a critical meteorological variable with direct implications for aircraft performance during take-off, cruising, and landing. Variations in temperature influence air density and, consequently, affect engine thrust, aerodynamic lift, and take-off roll requirements. Elevated temperatures reduce air density, resulting in decreased engine performance, reduced lift, and longer take-off distances. Conversely, lower temperatures increase air density and generally enhance aircraft performance. In March 2026, notable spatial variability in air temperature was observed across Nigeria, reflecting regional differences in atmospheric conditions and seasonal influences.

Maximum Temperature

In March 2026, the highest maximum temperature of 42.0°C was recorded at Mallam Aminu Kano International Airport, Kano. This extreme temperature reflected intense daytime heating associated with the peak of the dry season and the gradual northward retreat of the Harmattan air mass as atmospheric conditions transitioned toward the rainy season.

In contrast, the lowest maximum temperature of 30.1°C was recorded at Murtala Muhammed International Airport, Lagos. This relatively lower daytime temperature was attributed to increased atmospheric moisture, enhanced cloud cover, and the growing influence of moist maritime air, which moderated daytime heating.

Minimum Temperature

The highest minimum temperature of 27.5°C was recorded at Akanu Ibiam

International Airport, Enugu in March 2026. This indicates strong nocturnal heat retention resulting from high humidity levels, persistent cloud cover, and reduced radiative cooling during the night. Conversely, the lowest minimum temperature of 13.4°C was recorded at Mallam Aminu Kano International Airport, Kano, reflecting enhanced radiational cooling under relatively clear night-time conditions and the lingering influence of dry continental air masses.

Mean Temperature

The highest mean temperature of 32.80°C was recorded at Mallam Aminu Kano International Airport, Kano. This was attributable to sustained daytime heating coupled with relatively warm night-time conditions, resulting in elevated average temperatures throughout the month. In contrast, the lowest mean temperature of 23.2°C was recorded at Akanu Ibiam International Airport, Enugu, reflecting comparatively cooler atmospheric conditions associated with increased cloud cover, higher moisture content, and reduced daytime heating.

Summary

Overall, the temperature distribution across Nigeria in March 2026 exhibited significant spatial variability, primarily driven by differences in solar heating, cloud cover, atmospheric moisture content, and the seasonal northward migration of the Intertropical Discontinuity (ITD). The northern and central states of the country experienced pronounced daytime heating, resulting in elevated maximum temperatures, while the southern states recorded comparatively lower daytime temperatures due to increased cloudiness and the moderating influence of maritime air masses.

However, higher minimum temperatures were generally observed at airports in the southern part of the country, where elevated humidity levels and persistent cloud cover limited nocturnal cooling. These temperature patterns are consistent with the seasonal transition from the dry season to the onset of the rainy season across Nigeria.

5.1 OBSERVED MEAN DAILY TEMPERATURE (T_{MEAN}) °C AT THE AIRPORTS IN IN MARCH 2026.

Abuja Airport

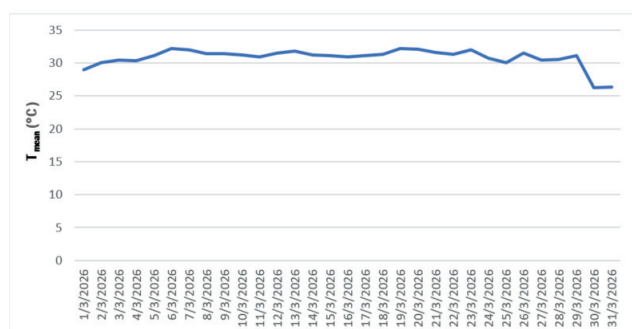


Figure 62: Daily Mean Temperature at Nnamdi Azikiwe International Airport, Abuja in In March 2026.

In March 2026, the highest mean temperature of 32.2°C was recorded at Nnamdi Azikiwe International Airport, Abuja on the 9th while the lowest recorded was 26.2°C on the 30th of the month. (See Figure 62).

Kano Airport

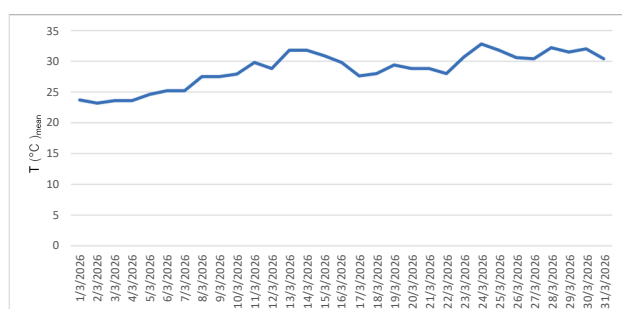


Figure 63: Daily Mean Temperature at Mallam Aminu Kano International Airport, Kano in In March 2026.

In March 2026, the highest mean temperature recorded at Kano Airport was 32.8°C. This was recorded at the airport on the 24th, while the lowest, 23.2°C, occurred on the 2nd of the month. (See Figure 63).

Enugu Airport

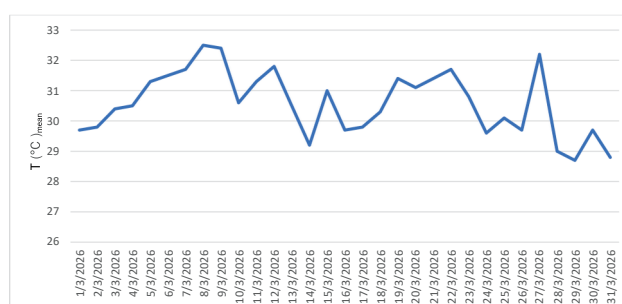


Figure 64: Daily Mean Temperature at Akanu Ibiam International Airport, Enugu, in In March 2026.

In March 2026, the highest mean temperature of 32.5°C was at Enugu Airport on the 8th, while the lowest, 28.7°C, occurred on the 29th of the same month. (See Figure 64).

Lagos Airport

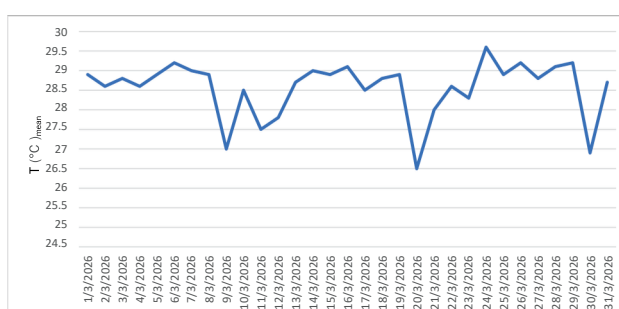


Figure 65: Daily Mean Temperature at Murtala Muhammed International Airport, Lagos, in March 2026.

In March 2026, the highest mean temperature recorded at Lagos Airport was 29.6°C. This was recorded at the airport on the 24th, while the lowest, 26.5°C, occurred on the 20th of the same month. (See Figure 65).

Port Harcourt Airport

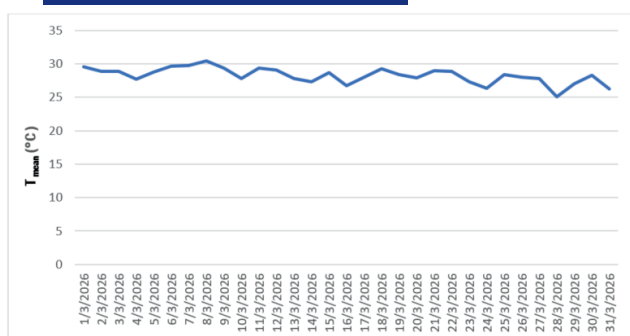


Figure 66: Daily Mean Temperature at Port Harcourt International Airport in March 2026.

In March 2026, the highest mean temperature recorded at Port Harcourt Airport was 30.4°C. This was recorded at the airport on the 8th, while the lowest, 25.1°C, occurred on the 28th of the same month. (See Figure 66).

5.2 OBSERVED MAXIMUM TEMPERATURE (T_{MAX}) °C AT THE AIRPORTS IN MARCH 2026.

Abuja Airport

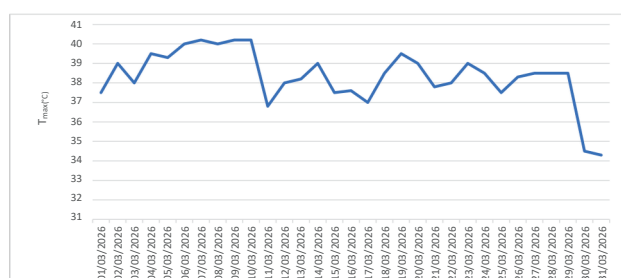


Figure 67: Daily Maximum Temperature at Nnamdi Azikiwe International Airport, Abuja in March 2026.

As depicted in Figure 67, the highest maximum temperature recorded at Abuja airport in March, 2026 was 40.2°C, observed on the 7th, 9th, and 10th while the lowest, 34.3°C, was recorded on the 31st of the same month.

Kano Airport

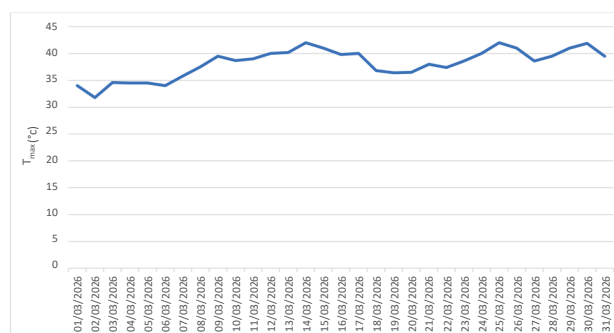


Figure 68: Daily Maximum Temperature at Mallam Aminu Kano International Airport, Kano in March 2026.

As depicted in Figure 68, the highest maximum temperature recorded at Kano airport in March 2026 was 42.0°C, observed on the 14th, and 25th while the lowest, 31.8°C, was recorded on the 2nd of the same month.

Enugu Airport

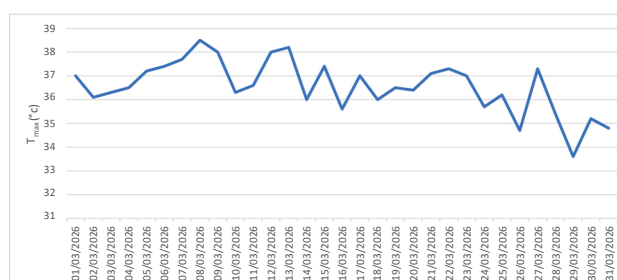


Figure 69: Daily Maximum Temperature at Akanu Ibiam International Airport, Enugu in March 2026.

As depicted in Figure 69, the highest maximum temperature recorded at Enugu airport in March 2026 was 38.5°C, observed on the 8th, while the lowest, 33.6°C, was recorded on the 29th of the same month.

Lagos Airport

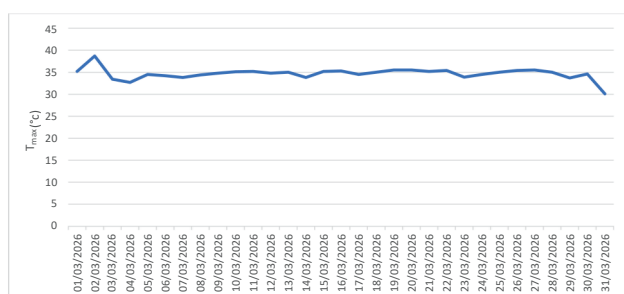


Figure 70: Daily Maximum Temperature at Murtala Muhammed International Airport, Lagos in March 2026.

In Figure 70, the highest maximum temperature recorded at Lagos airport in March 2026 was 38.7°C, observed on the 2nd, while the lowest, 30.1°C, was recorded on the 31st of the same month.

Port Harcourt Airport

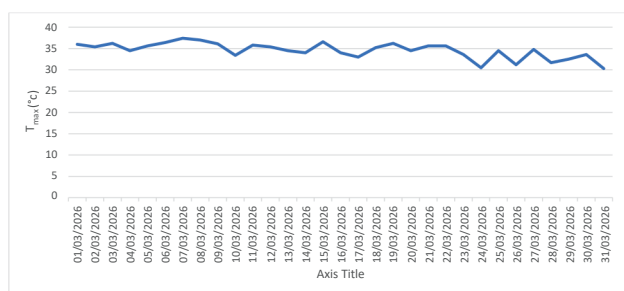


Figure 71: Daily Maximum Temperature at Port Harcourt International Airport in March 2026.

In Figure 71, the highest maximum temperature recorded at Port Harcourt airport in March 2026 was 37.4°C, observed on the 7th, while the lowest, 30.3°C, was recorded on the 31st of the same month.

5.3 OBSERVED TEMPERATURE ($T_{\min}$) °C AT THE AIRPORTS IN MARCH 2026.

Abuja Airport

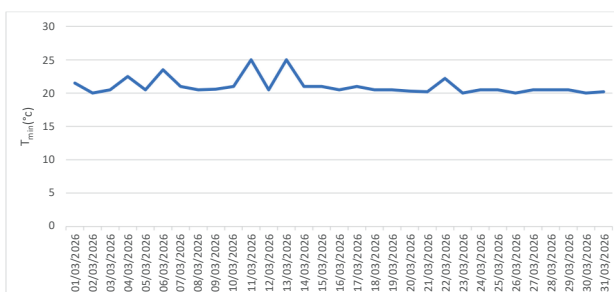


Figure 78: Daily Minimum Temperature at Nnamdi Azikiwe International Airport, Abuja in March 2026.

The highest minimum temperature of 25.0°C was recorded at the airport on the 11th and 13th of March, 2026, while the lowest, 20.0°C, was observed on the 2nd, 23rd, 26th, and 30th of the same month.

Kano Airport

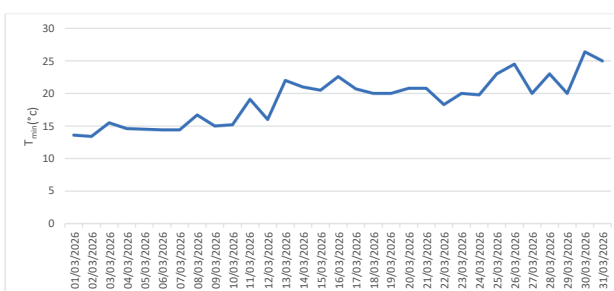


Figure 79: Daily Minimum Temperature at Mallam Aminu Kano International Airport, Kano in March 2026.

The highest minimum temperature of 26.4°C was recorded at the airport on the 30th of March, 2026, while the lowest, 13.4°C, was observed on the 2nd of the same month.

Enugu Airport

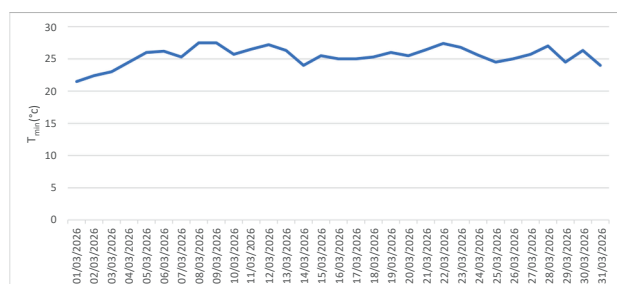


Figure 80: Daily Minimum Temperature at Akanu Ibiam International Airport, Enugu in March 2026.

In Figure 80, The highest minimum temperature of 27.5°C was recorded at the airport on the 8th, and 9th of March, 2026, while the lowest, 21.5°C, was observed on the 1st of the same month.

Port Harcourt Airport

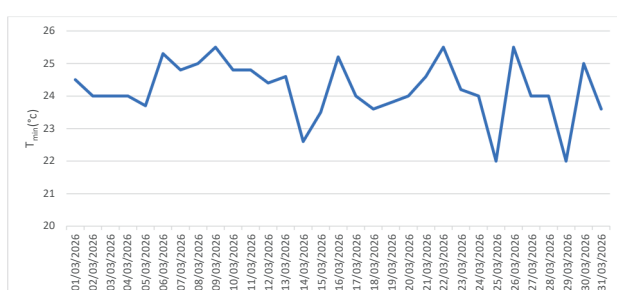


Figure 81: Daily Minimum Temperature at Port Harcourt International Airport in March 2026.

In Figure 81, The highest minimum temperature of 25.5°C was recorded at the airport on the 9th, 22nd, and 26th of March, 2026, while the lowest, 22.0°C, was observed on the 25th, and 29th of the same month.

5.4 OBSERVED VISIBILITY AT THE FIVE INTERNATIONAL AIRPORTS IN IN MARCH 2026.

Abuja Airport

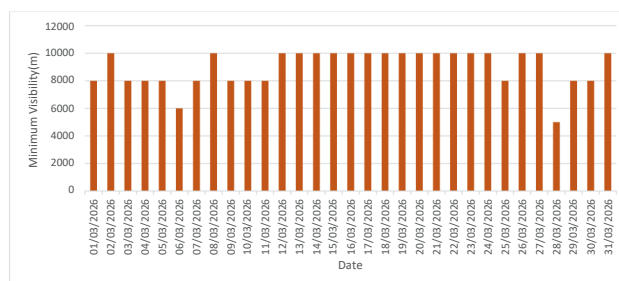


Figure 82: Daily Visibility at Nnamdi Azikiwe Airport, Abuja in March 2026.

As shown in Figure 82 visibility of 5000m and below were recorded at Abuja airport for one (1) non-consecutive day in March 2026, and the lowest was 5000m, recorded on 28th of the month.

Enugu Airport

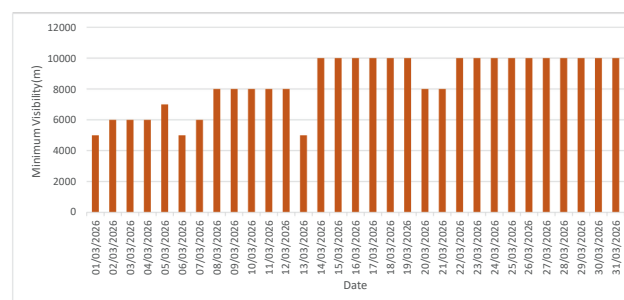


Figure 83: Daily Visibility at Akanu Ibiam International Airport, Enugu in March 2026.

As shown in Figure 82, visibility of 5000m and below were recorded at Enugu airport for three (3) non-consecutive days in March 2026, and the lowest was 5000m, recorded on 1st, 6th and 13th of the month.

Lagos Airport

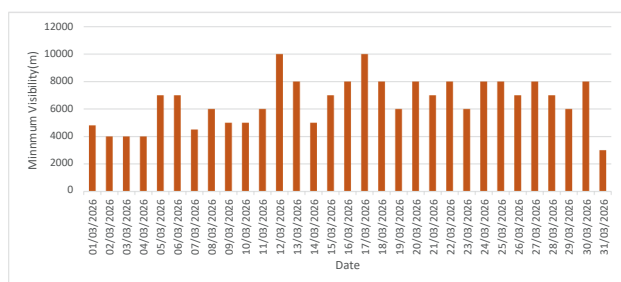


Figure 84: Daily Visibility at Murtala Muhammed International Airport, Lagos in March 2026.

As shown in Figure 84, visibility of 5000m and below were recorded at Lagos airport on nine (9) non-consecutive days in March 2026, and the lowest was 3000m, recorded on 31st of the month.

Port Harcourt Airport

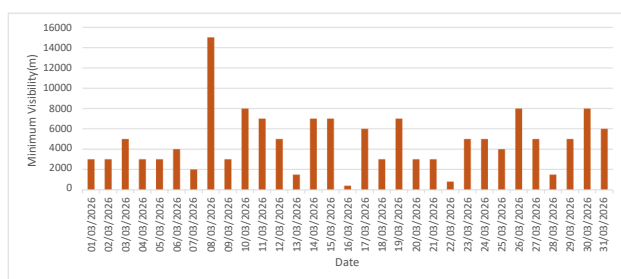


Figure 85: Daily Visibility at Port Harcourt International Airport in March 2026.

As shown in Figure 85, visibility of 5000m and below were recorded at port Harcourt airport for twenty-two (22) non-consecutive days in March 2026, and the lowest was 0400m, recorded on 16th of the month.

Kano Airport

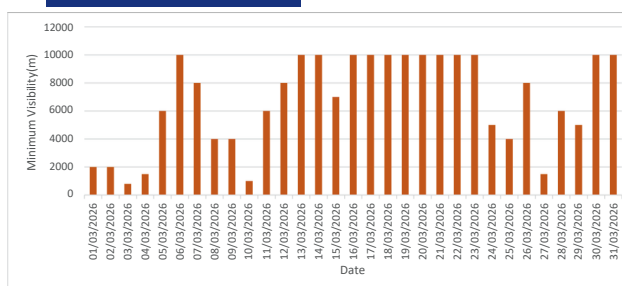


Figure 86: Daily Visibility at Mallam Aminu Kano International Airport in March 2026.

In Figure 86 visibility 5000m and below were recorded at Mallam Aminu Kano International Airport for eleven (11) non-consecutive days in March 2026, and the lowest was 0800m, recorded on 3rd of the month.

6.0 OBSERVED DAILY RAINFALL AT VARIOUS AIRPORTS IN NIGERIA IN MARCH 2026.

Abuja Airport

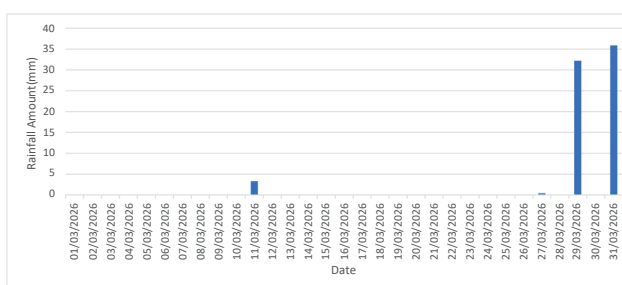


Figure 87: Daily Rainfall at Abuja International Airport in March, 2026

The highest rainfall recorded at the Abuja airport in March 2026 was 35.9mm. This was recorded on the 31st of the month, while the lowest recorded during the period was 0.4mm on 27th of the month. The total amount of rainfall for the month was 71.8mm (see figure 87).

Lagos Airport

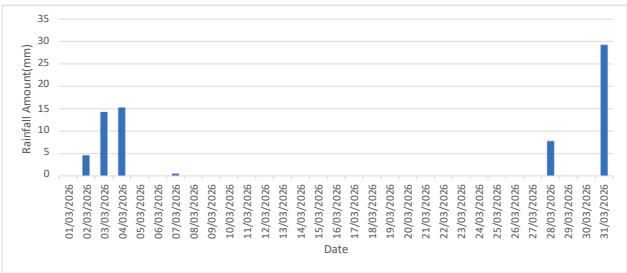


Figure 87: Daily Rainfall at Murtala Muhammed International Airport, in March 2026.

The highest rainfall recorded at the Lagos airport in March 2026 was 29.3mm. This was recorded on the 31st of the month, while the lowest recorded during the period was 0.5mm on the 7th of the month. The total amount of rainfall for the month was 71.8mm (see Figure 87).

Enugu Airport

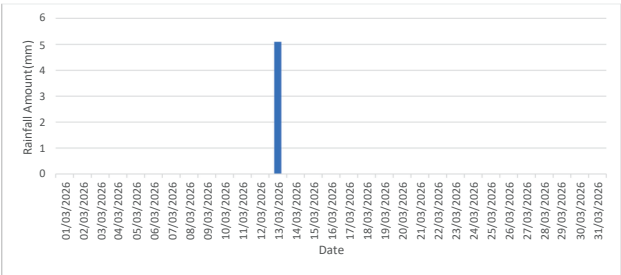


Figure 88: Daily Rainfall at Akanu Ibiam International Airport, Enugu in March 2026.

The highest rainfall recorded at the Enugu airport in March 2026 was 5.1mm. This was recorded on the 13th of the month being the only day that recorded rainfall amount. The total amount of rainfall for the month was 5.1mm (see figure 88)

Port Harcourt Airport

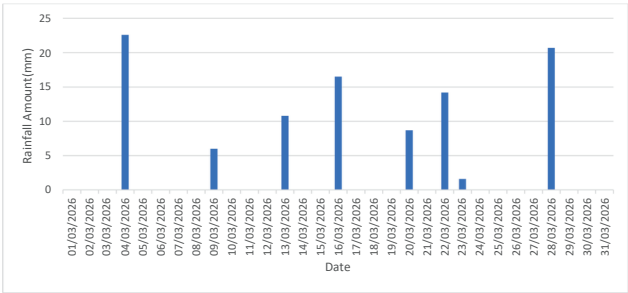


Figure 88: Daily Rainfall at Port Harcourt International Airport in March 2026.

The highest rainfall recorded at the Port Harcourt airport in March 2026 was 22.6mm. This was recorded on the 4th of the month, while the lowest recorded during the period was 1.6mm on 23rd of the month. The total amount of rainfall for the month was 101.1mm (see Figure 88).

Kano Airport

No rainfall was recorded in Mallam Aminu Kano International Airport, Kano

6.0(F) NUMBER OF RAINY DAYS AT THE FIVE INTERNATIONAL AIRPORTS IN IN MARCH 2026.

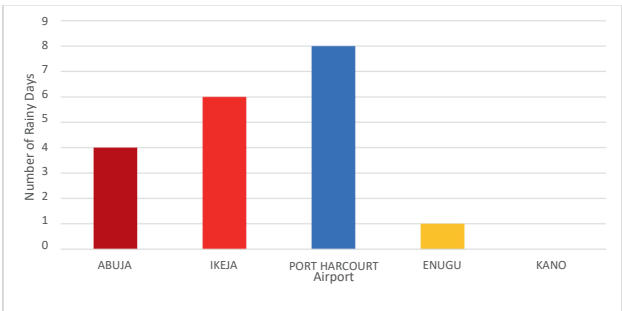


Figure 88(b): Number of Rainy Days at the five Airports in the month of March, 2026

As shown in Figure 88b, Port Harcourt International Airport recorded the highest number of rainy days in the month of March 2026, with a total of eight (8) days. Murtala Muhammed International Airport, Ikeja, followed with six (6) rainy days; Nnamdi Azikiwe International Airport, Abuja recorded four (4) rainy days; Enugu International Airport recorded one (1) day with rain. Aminu Kano International Airport, Kano, did not record any rainfall occurrence during the month under review.

6.1 DAILY OBSERVED THUNDERSTORM OCCURRENCES AT THE FIVE INTERNATIONAL AIRPORTS IN IN MARCH 2026.

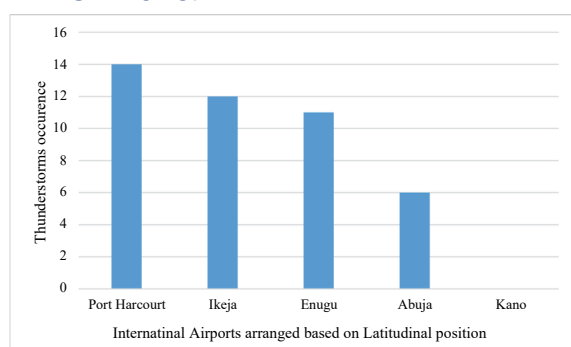


Figure 89: Thunderstorm occurrence at the Five International Airports in in March 2026.

Weather conditions across Nigeria in March 2026 were largely governed by the position and gradual southward retreat of the Intertropical Discontinuity (ITD). Despite its seasonal withdrawal, intermittent incursions of moist south-westerly maritime air persisted over some parts of southern Nigeria, promoting localized low-level moisture convergence and atmospheric instability. Consequently, rainfall distribution during the month exhibited spatial variability, with moderate rainfall mainly confined to the southern states, while the northern parts of the country remained largely under dry season conditions.

Thunderstorm activity across the selected international aerodromes generally reflected the prevailing synoptic conditions. by Port Harcourt International Airport recorded the highest frequency with fourteen (14) thunderstorm events followed by Murtala Muhammed International Airport, Lagos, with Twelve (12) events. Akanu Ibiam International Airport, Enugu recorded eleven (11) thunderstorm occurrences. Nnamdi Azikiwe International Airport, Abuja recorded six (6) thunderstorm occurrences, While, Mallam Aminu Kano International Airport, Kano did not record any thunderstorm occurrence during the month.

From an aviation operations standpoint, the observed convective activities were associated with hazardous weather such as reduced visibility, gusty winds, lightning, and localized heavy rainfall. These conditions underscore the importance of continuous meteorological monitoring and proactive flight planning to minimize potential operational disruptions within Nigerian airspace

6.2 PRODUCTION AND COLLECTION OF FLIGHT DOCUMENTATION FOLDERS IN MARCH 2026

Flight documentation refers to a standardized package of meteorological information prepared by the Nigerian Meteorological Agency (NiMet) and issued to airline operators and flight crew prior to departure. It contains time-critical aviation weather information for the departure, destination, alternate, and en-route aerodromes, covering atmospheric conditions from the surface up to the planned cruising flight levels.

This service is provided by NiMet through designated Aerodrome Meteorological Offices at Kano, Abuja, Lagos, Port Harcourt, and Enugu airports.

Abuja Airport

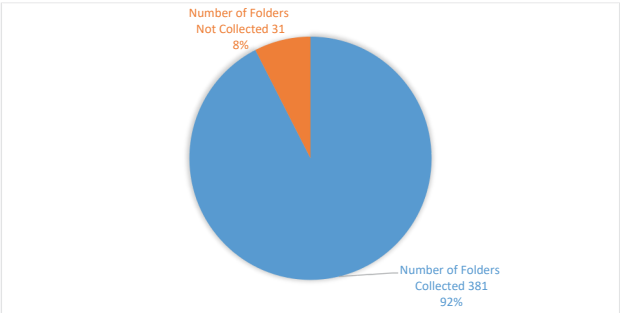


Figure 90: Flight Documentation Analysis for Nnamdi Azikiwe International Airport, Abuja in March, 2026

The total number of flight documentation folders prepared at Nnamdi Azikiwe International Airport Abuja in the month of March, 2026 was 412, out of which 381 were collected, representing 92% collection rate; while 31 were not collected, resenting 8% of the total folders prepared. (See Figure 90).

Enugu Airport

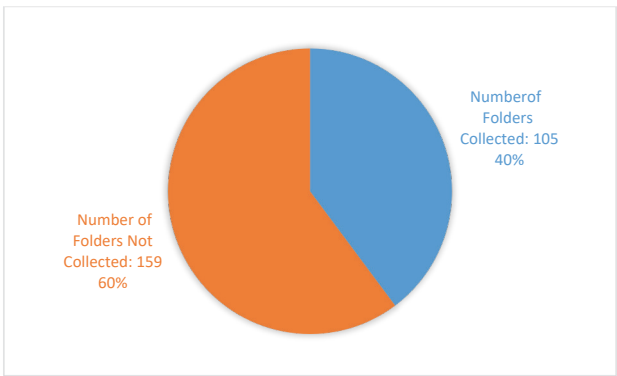


Figure 91: Flight Documentation Analysis for Akanu Ibiam International Airport, Enugu March 2026

The total number of flight documentation folders prepared in the month of March, 2026 at Akanu Ibiam International Airport, Enugu was 264, out of which 105 were collected, representing 40% collection rate; while 159 were not collected, representing 60% of the total folders prepared. (See Figure 91).

Lagos Airport

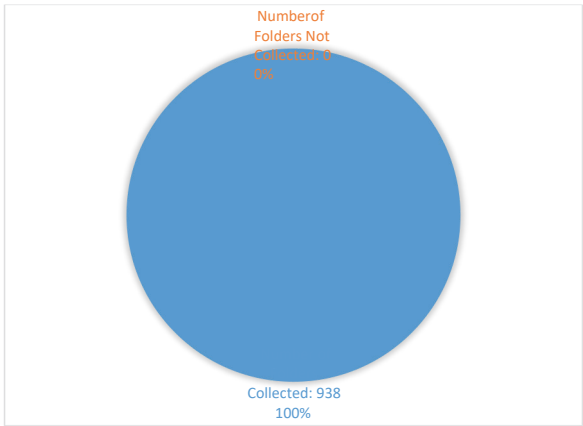


Figure 92: Flight Documentation Analysis for Murtala Muhammed International Airport (MMIA), Lagos in March 2026

The total number of flight documentation folders prepared in the month of March, 2026 at Murtala Muhammed International Airport, Ikeja was 938 with all folders collected, representing 100% collection rate (See Figure 92).

Port Harcourt Airport

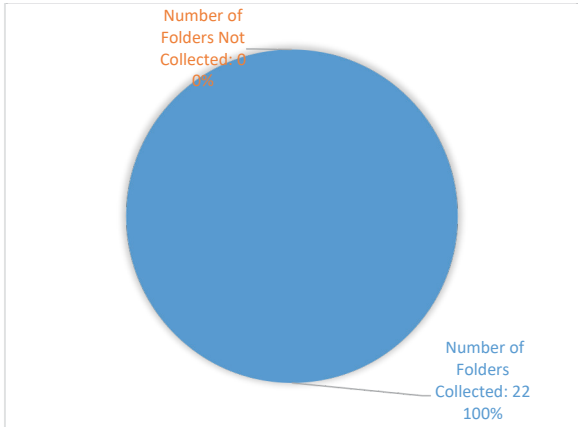


Figure 93: Flight Documentation Analysis for Port Harcourt International Airport in March, 2026

The total number of flight documentation folders prepared in the month of March, 2026 at Port Harcourt International Airport, Port Harcourt was 22, out of which 22 were collected, representing 100% collection rate; while 0 were not collected, resenting 0% of the total folders prepared. (See Figure 93).

Kano Airport

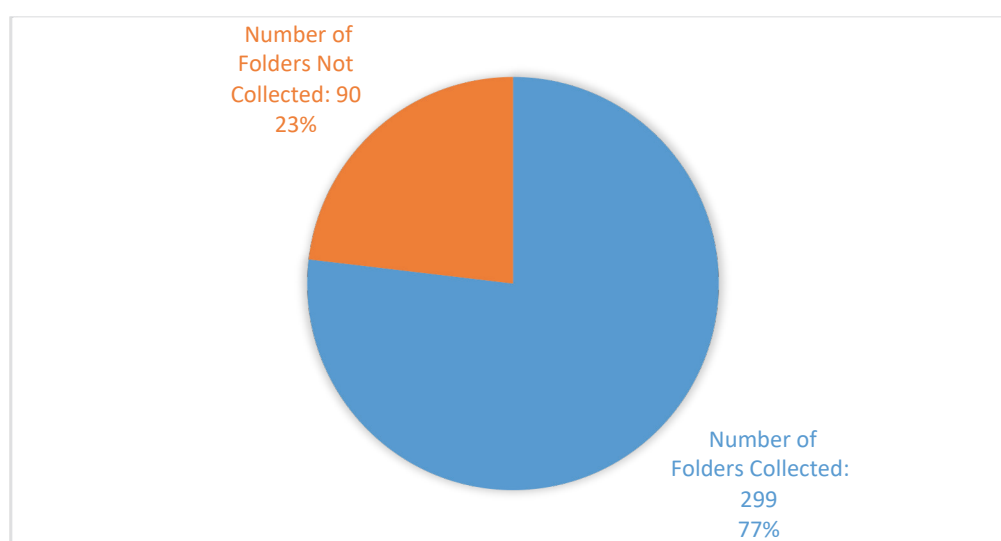


Figure 94: Flight Documentation Analysis for Mallam Aminu Kano International Airport (MAKIA) Kano in March, 2025

The total number of flight documentation folders prepared in the month of March, 2026 at Mallam Aminu Kano International Airport, Kano was, 389 out of which 299 were collected, representing 77% collection rate; while 90 were not collected, representing 23% of the total folders prepared. (See Figure 94).

TABLE 3: SUMMARY OF FLIGHT DOCUMENTATION FOLDER COLLECTION IN MARCH 2026

Aerodrome Meteorological Office	Number of Folders Prepared	Number of Folders Collected	Number of Folders not Collected	Collection Rate (%)
Nnamdi Azikiwe, Abuja	412	381	31	92
Murtala Muhammed, Lagos	938	898	0	100
Mallam Aminu Kano, Kano	389	299	90	77
Port Harcourt International Airport	22	22	0	100
Akanu Ibiam Airport, Enugu	264	105	159	40
Total	2025	1705	280	84.2

Table 3 shows that Port Harcourt International Airport recorded the highest collection rate of 100% in January 2026, while Akanu Ibiam International Airport, Enugu recorded the lowest collection rate of 30% for the month.

6.3 AERODROME WARNING

An Aerodrome Warning is a critical safety alert issued by the Nigeria Meteorological Agency (NiMet) to notify airport operators, airlines, ground handlers, and other aviation stakeholders of expected or occurring meteorological conditions at an aerodrome that may pose a hazard to ground operations or airport infrastructure.

Aerodrome Warnings typically cover hazardous weather phenomena on or near the aerodrome, such as:

- Thunderstorms and lightning
- Strong surface winds / wind gusts
- Heavy rain or hail
- Sandstorms or dust storms
- Fog formation affecting ground visibility
- Extreme temperatures
- Snow or ice (in regions where applicable)

These phenomena may not directly affect aircraft in flight, but significantly impact ground activities and airport safety.

6.3.1 SIGNIFICANCE OF AERODROME WARNINGS TO AVIATION SAFETY

Aerodrome Warnings are essential for maintaining safe and efficient airport operations. Their importance includes:

1. Protection of Ground Personnel and Equipment

Alerts enable ground staff to suspend fueling, loading, de-icing, and maintenance activities during hazardous conditions. Prevents accidents caused by lightning strikes, falling objects in high winds, or poor visibility.

2. Safety of Aircraft on the Ground

Aircraft parked on the apron or taxiing may be at risk from strong winds, hail, debris, or low visibility. Warnings support decisions to secure aircraft, adjust pushback/taxi operations, or delay departures.

3. Efficient Airport Management

Airport authorities use warnings for resource planning, including closing ramps, adjusting staffing, or activating emergency procedures.

Helps mitigate operational disruptions and reduces financial losses.

4. Prevention of Equipment and Infrastructure Damage

Protects critical assets such as:

Ground power units (GPUs), Jet bridges, Navigation aids (NAVAIDs), Radars and communication equipment

5. Enhanced Situational Awareness

Provides timely meteorological awareness to all airport stakeholders.

Supports decision-making for air traffic control (ATC), airlines, and airport emergency units.

6. Compliance With ICAO Standard Practices

6.3.2 AERODROME WARNINGS ISSUED AT THE FIVE INTERNATIONAL AIRPORTS IN MARCH, 2026

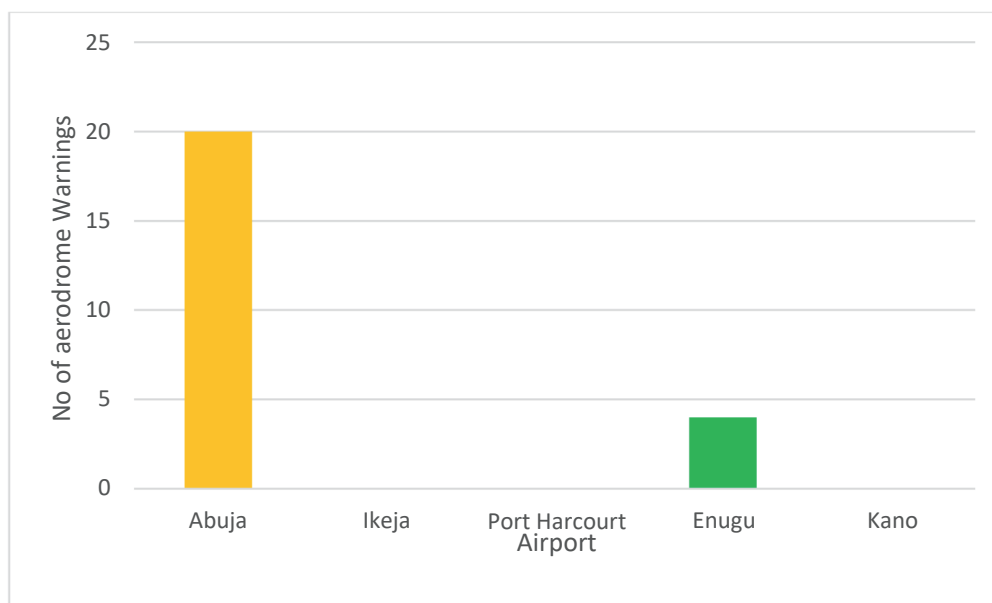


Figure 95: Aerodrome warnings issued at the five international Airports in March, 2026

Analysis of aerodrome warning issuance for March 2026 indicates that Nnamdi Azikiwe International Airport, Abuja had the highest number of warnings, with a total of 20 aerodrome warnings issued during the month. Akanu Ibiam International Airport, Enugu followed with 4 warnings, while no Aerodrome Warning issue at Mallam Aminu Kano International Airport, Port Harcourt International Airport and Murtala International Airport Abuja Ikeja Lagos in the month under review.



Flight Level: A standardized altitude of an aircraft expressed in hundreds of feet. It is usually referenced to the standard atmospheric pressure of 1013.25 hPa (hectopascals).

Flight crew member: A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period. Flight documentation. Written or printed documents, including charts or forms, containing meteorological information for a flight.

Flight information centre (FIC): A unit established to provide flight information service and alerting service.

Flight information region (FIR): An airspace of defined dimensions within which flight information service and alerting service are provided.

Fog: A cloud that forms at ground level, reducing visibility to less than 1,000 meters (3,280 feet). It can significantly impact flight operations.

Haze: A slight obscuration of the air caused by fine particles or water droplets, reducing visibility but not as severely as fog or mist.

Mist: Similar to fog but with visibility of 1000 to 5000m .

METAR: A routine aviation weather report issued at least once an hour, containing data on temperature, dew point, wind speed, visibility, and significant weather phenomena.

Turbulence: Irregular or violent changes in airflow that can cause abrupt changes in altitude or speed, often experienced during flight. It can be caused by various factors, including weather fronts, thunderstorms, and mountainous terrain.

TAF (Terminal Aerodrome Forecast): A weather forecast for a specific airport, usually covering a 30-hour period and updated 6 hourly, detailing expected weather conditions important for flight operations.

Trend Forecast: A trend forecast is a short term weather forecast that indicates expected changes in weather conditions over a specific period, typically covering the next few hours to a day. It highlights trends such as increasing or decreasing temperatures, changes in wind direction, or the likelihood of precipitation. Trend forecasts are often based on current weather observations and short-term numerical weather prediction models.

SPECI report is a special weather report issued when there are significant changes in weather conditions that occur between routine METAR reports. It may include updates on sudden changes in visibility, wind, significant weather events (like thunderstorms), or changes in cloud cover. SPECI reports help ensure that pilots and air traffic controllers have the most up-to-date information.

Squall: A sudden, sharp increase in wind speed lasting for a short period, often associated with thunderstorms or frontal systems. **Visibility:** The distance at which objects can be clearly seen. In aviation, visibility is crucial for take-off, landing, and navigation.

Temperature: A measure of how hot or cold something is, usually measured in degrees Celsius (°C) or Fahrenheit (°F).

Maximum Temperature: The highest temperature recorded in a specific location during a specified period, typically over a 24 hour day. This value is important for understanding heat extremes and is often used in weather forecasts.

Minimum Temperature: The lowest temperature recorded in a specific location during a specified period, also usually over a 24-hour day. It helps indicate the cooling trends in an area and is crucial for assessing frost risk and other cold-related phenomena. period, calculated by adding together all temperature readings for that period and then dividing by the number of readings. Mean temperature can be computed daily, monthly, or annually and provides a more comprehensive view of temperature trends over time.

Microburst: A small, concentrated downdraft that results in a powerful burst of wind at or near the ground level, capable of causing significant damage and hazards for aviation. **Jet Stream:** A fast-flowing ribbon of air in the upper atmosphere, typically found at altitudes of 20,000 to 50,000 feet. Jet streams can influence weather patterns and are crucial for aviation.

Tailwind: A wind that blows in the same direction as an aircraft is traveling, which can increase its speed and reduce fuel consumption during flight. **Cloud:** A visible mass of condensed water vapor floating in the atmosphere, which can vary in type, size, and altitude. Clouds are classified into several types, such as cumulus, stratus, and cirrus.

Crosswind: Wind that blows perpendicular to the direction of an aircraft's flight path, which can affect take-off and landing performance.

Headwind: A wind that blows directly opposite to the direction of an aircraft's travel, which can slow down the aircraft and increase fuel consumption during flight.

Lightning: A sudden electrostatic discharge during a storm, producing a bright flash and a loud sound (thunder). It occurs when electrical charges build up in clouds.

Windshear: A sudden change in wind speed or direction over a short distance, which can be dangerous during take-off and landing due to its potential to disrupt the airflow over an aircraft's wings.

Dust storm: Severe weather events characterized by strong winds lifting large amounts of dust or sand into the air, reducing visibility and air quality.

Extreme Temperature: Temperatures that are significantly above or below the average for a specific region or time of year, which can have profound effects on weather patterns and living conditions.

Cumulonimbus: A type of cloud that indicates thunderstorms and severe weather.

Dew Point: The temperature at which air becomes saturated with moisture and dew forms.

Humidity: The amount of moisture in the air, expressed as a percentage of the maximum amount of moisture the air can hold at that temperature

Thunderstorm: A localized storm characterized by the presence of thunder and lightning, often accompanied by heavy rain, strong winds, and sometimes hail or tornadoes.

Air Pressure: The force exerted by the weight of air above a given point, typically measured in hectopascals (hPa) or millibars (mb). Air pressure influences weather patterns and is a key factor in meteorology.

Ceiling: The height above the ground of the lowest layer of clouds or the vertical visibility into a cloud. It is important for determining whether VFR (Visual Flight Rules) or IFR (Instrument Flight Rules) can be used.

Turbulence: Irregular or violent movements of air, which can cause changes in altitude and speed. Turbulence can be caused by weather phenomena, terrain, or jet streams.

Temperature Inversion: A layer of the atmosphere where temperature increases with altitude, contrary to the usual decrease. It can trap pollutants and create turbulence.

Pressure System: Areas of high or low atmospheric pressure. High-pressure systems generally bring clear skies, while low pressure systems are associated with clouds and precipitation.

Convective Activity: Atmospheric processes that involve the vertical movement of air, often leading to thunderstorms. It can create hazardous flying conditions.

Advection: The horizontal movement of air, often bringing changes in temperature or humidity.

Atmospheric Pressure: The weight of the air above a given point, typically measured in millibars (mb) or inches of mercury (inHg).

Low Pressure System: An area where the atmospheric pressure is lower than that surrounding it, often associated with stormy weather.

Precipitation: Any form of water, liquid or solid, that falls from the atmosphere, including rain, snow, sleet, and hail.

Severe Weather: Weather that poses a significant risk to life or property, including thunderstorms, tornadoes, and hurricanes.