



### How our weather go be for 2024

Nigerian Meteorological Agency

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### **Foreword**



s we dey knack 2023 for back, di mata wey concern climate change and awareness bin dey hot like fire, especially as di United Nations Framework Convention ontop Climate Change (UNFCCC) conference wey be di twentyeighth (28th) edition of di Conference of Parties (COP) burst enter Dubai, United Arab Emirates. As Antonio Guterres, di UN Secretary General talk am once, climate change na serious kasala wey get wetin e take to finish manpikin. E dey importanta well-well make all di agreements wey dem settle for di conference of parties, na wetin dem suppose work ontop, to make am reality. Wetin dem agree for di UNFCCC Conference of Parties and how dem go carry implement am, e dey importamkpa for the survival of human beings and how dem go live their lives.

Even as we dey find our balance for di weather, di WMO Provisional State of di Global Climate report wey dem release inside COP 28 don talk say 2023 na di hottest year wey we don ever see. E don break record with 1.4°C above wetin oyibo dey call pre-industrial (1850-1900) baseline. Dem predict say 2024 fit be El Niño year, e fit continue to dey hot for global temperature. Plus, as we dey waka, di weather go still dey burst

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our brain with all dis nyama-nyama tori.

Our Africa, di land wey we love so tey, even though e dey do small for global warming, e still dey suffer well-well from di nyama-nyama weather wey climate change dey carry come. For 2023, e no carry last at all. For example, for September, Tropical Storm Daniel land with heavy rain wey reach 414.1 mm inside just 24 hours, e cause serious katakata flood for Libya wey kaput more than four thousand people and many still dey miss. For early (February-March) inside 2023, Tropical Cyclone Freddy carry im badluck and wahala enter Mauritius, Madagascar, Mozambique, and Zimbabwe, na so e send more than 800 people to their early grave. Heavy flood still shoim ugly face for Rwanda, Democratic Republic of Congo, and South Sudan, the koko be say, e still kill and wunjure many people.

Di serious heat wave wey enter Europe for 2023 no end there o, na so e still find im way to some part of North Africa, wey make for the first time, Morocco record 50.4°C. E make di dryness for North-West Africa come dey worse pass 'becareful'.

Even though 2023 no too show us pepper for Nigeria when we dey talk about weather wahala, countripeople no go forget how flood punish dem inside 2022. According by one govment joinbodi, NEMA, na about five million people suffer am and almost two thousand people nadem kaput, close to five thousand people wunjure, and na more than two million people lose their house. Still ontop the badness, na billions of naira naim authority spend to take recover and to re-arrange things back together for areas wey flood scatter. E show say countripipo no get wetin e take to tackle dis weather badness wey bin show face, e go make sense for the country to re-double their ginger to prepare communities against climate wahala.

One ogbonge way to take fight the war against flooding, na to get early warning ontop the matter. Na so di idea of Early Warning for All start for di 27th edition of UNFCCC COP for Egypt, with five years target to make sure say everybody for the world dey covered by early warning systems by year 2027. Di UN report wey dem launch for COP28 by UN Secretary General talk say plenty work still dey to do, to reach dis target.

Early Warning System (EWS) na system na joinbodi system wey concern hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities wey go allow people, communities, govments, diffrent business, and others take action before any serious weather kasala go show face. E dey importanta say everybody for di chain play dia own part well.

Even as di World and Africa dey use Multi-Hazard Early Warning System approach with situation rooms for Addis Ababa, Niamey, and Abuja (ECOWAS), e go make sense wella if Nigeria fit get national situation room wey get MHEWS.

Govment joinbodi wey be di Nigerian Meteorological Agency (NiMet) bin don dey do beta work ontop dis MHEWS matter for long long time, dem dey give ogbonge service and still dey provide informate when we need am for Nigeria plus including international level. The main, the main thing wey dey take know dem for, na di Seasonal Climate Prediction (SCP) meaning say nadem dey tok how tomorrow weather go be. Di SCP na Early Warning Tool wey dey give countripipo enof informate wey concern when rain go start and stop, how long di rainy season go be, weda the rain go too much or not, when dry spell go show face, and other important weather matter. Dis informate dey important well-well fto take make decision for different sectors of Nigeria economy, especially di ones wey rely ontop weather like aeroplane fly-fly bisness wey demdey call aviation. Di SCP fit ginger ogbonge things wey concern di Renewed Hope Agenda of Mr. President, like food security, poverty reduce, economic growth, job creation, and security of life and property.

Even though NiMet don drop their SCP early for di year, dem still dey use corner eyes dey look how weather dey move as di year dey go, and dem go dey give update whenever e dey necessary. Na why I dey advise make planners and operators for all di sectors of our economy, especially di ones wey weather dey affect, follow di updates wey NiMet dey bring out from time to time and make dem take sharp-sharp action to reduce how weather kasala take dey punish countripipo.

### Festus Keyamo, SAN, CON, FCIArb (UK)

Honourable Minister of Aviation and Aerospace (Minister wey dey in charge of Meteorology) February 2024

### **Executive Summary**



he Nigerian Meteorological Agency (NiMet) don drop di 2024 Seasonal Climate Prediction (SCP). Dis SCP na like the koko of some important climate tori and how dem dey behave inside di season. NiMet dey produce dis tori every year to meet dia mandate wey be to give confirm, sharpsharp and ogbonge weather and climate informate to advise di Fedral Govnment of Nigeria and countripipo ontop weather and issues wey concern climate. All dis na to ginger economic growth and stop or reduce losses for production and infrastructure na im make dem dey do dis.

To make dis SCP, dem dey use science wey dey based on high-quality long-term weather data with confirm forecasting models. Plus, dem involve plenty stakeholders from areas wey weather fit shake ground like farming, aviation, building, water, health, trade, and tourism to make sure say everybody dey covered for diforecast wey dem go use.

For dis edition of di SCP, dem base di predictions ontop strong El Niño phase of di El Niño Southern Oscillation (ENSO) for di first part of 2024, and dem predict say di Neutral phase go dey follow for di rest of di year. ENSO na big influence for climate pattern around di world. Dem use di strong El Niño phase to predict when rain go start, how long

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di season go be, when e go end, and how much rain go fall. Plus, dem use rainfall, temperature, soil moisture data, water balance, farm management style, and other soil and plant info join di forecast.

Rain Start Dates: Dem predict say rain go start late for central states of di country. Normal start go happen for northern states. Rain go likely start early pass di usual time for Borno, Abia, and Akwa Ibom states.

Rain End Dates: Dem predict say rain go stop early for some parts of Yobe, Jigawa, Sokoto, Kebbi, Kano, Kaduna, Plateau, Nasarawa, Taraba, Gombe, Bauchi, Cross River, Ebonyi, Ogun, and Lagos states. But for southern states like Bayelsa, Rivers, Akwa Ibom, Ondo, Ekiti, and parts of Edo, Delta, Ogun, Oyo, Kogi, Kwara, FCT, Niger, and Kaduna, rain go stop late.

Rain Amount: Dem predict say di annual rain amount go dey below normal for some parts of Yobe, Jigawa, Bauchi, Kano, Kebbi, Gombe, Plateau, Taraba, Nasarawa, Benue, Enugu, Ebonyi, Cross River, Delta, and Bayelsa states compared to how e suppose be (usual). But other parts of di country fit see normal to plenty rain.

Growing Season: Many parts of di country go get short growing season, but Bayelsa, Rivers, and Akwa-Ibom fit see longer growing season pass di usual. Other parts go get normal or short growing season.

Temperature: Dem predict say temperature go dey high pass di usual for di whole country. Day and night temperature go warm pass di usual for most parts of di country for January, March, and May 2024. But for February, temperature go cool pass di normal. Plus, northern areas go likely dey cooler for March.

Dry Spells: Dem talk say for July, dry spell fit happen wey go last pass 15 days after rain don start for northern states of Nigeria and northern Oyo. Central fit see moderate dry spell wey go last 16 days, while mild dry spell go happen for Ogun, Osun, Edo, Enugu, Anambra, and northern Cross River.

Little Dry Season (LDS): Dem predict say LDS for 2024 fit start from July 22nd to August 2nd, with serious effect for Kwara and Lagos states wey fit last pass 27 days. Some parts of Oyo, Ogun, Ekiti, and Lagos mainland fit see mild to moderate LDS wey go last from 18 to 27 days. Ondo, Edo, and some parts of Kogi fit see small or no LDS effect.

Dis forecast na warning for people and government to prepare well and take action against weather and climate danger for every community, no matter the village.

### **Professor Charles Anosike**

Director General/CEO &
Permanent Representative of Nigeria with WMO
Nigerian Meteorological Agency (NiMet)



### 1.0 Climate Drivers

### 1.1 ENSO Synopsis

ENSO, wey be El Niño Southern Oscillation, like every year, na one of di main things wey dey cause di changes wey we dey see for di weather season by season, and na based on am NiMet dey produce dia seasonal climate prediction. Dis thing just be like how di sea surface temperature dey behave for di central pacific region (NINO 3.4), wey dem define from 5 degrees North to 5 degrees South latitude, and from 170 degrees West to 120 degrees West longitude. ENSO get three phases: cold phase wey dem call La-Nina, wey mean say sea surface temperature go cool pass

normal; warm phase wey dem call El Niño, wey be say e go warm pass normal; and thirdly, na neutral phase. Although, ENSO na big driver, other things like Maiden Julian Oscillation (MJO) and Indian Ocean Dipole (IOD) join body with ENSO to arrange how di weather go be for Nigeria season by season. Dem dey use information about all dis join with Nigeria soil and climate data wey dem gather for more than 30 years to talk how di rainfall go be for 2024 season.

Di latest tori wey dem talk about ENSO from big prediction centres for USA and Australia like Institute of Research for Climate and Society (IRI)/Climate Prediction Centre, and Bureau of Meteorology (BoM) show say na warm phase of ENSO (El Niño) go mostly arrange how di 2024 season go be after di triple La-Nina wey we see inside di last three years.

ENSO, as e dey happen every year, na one of di ogbonge things wey dey make how di weather go dey change season by season, and na dis thing be di foundation wey NiMet dey use produce dia seasonal climate prediction. Dis matter simply talk about how di sea surface temperature dey behave for central pacific region (NINO 3.4), wey dem define from 5 degrees North to 5 degrees South latitude, and from 170 degrees West to 120 degrees West longitude. ENSO get three phases: cold phase wey dem call La-Nina, wey mean say sea surface temperature go dey cooler pass normal; warm phase wey dem call El Niño, wey be say e go dey warmer pass normal; and thirdly, na neutral phase. Even though ENSO na main driver, other tins like Maiden Julian Oscillation (MJO) and Indian

Ocean Dipole (IOD) join body with ENSO to arrange how di climate go waka for Nigeria. Dem dey use info about all dis join with Nigeria soil and climate data wey dem gather for more than 30 years to predict how rain go fall for di 2024 season.

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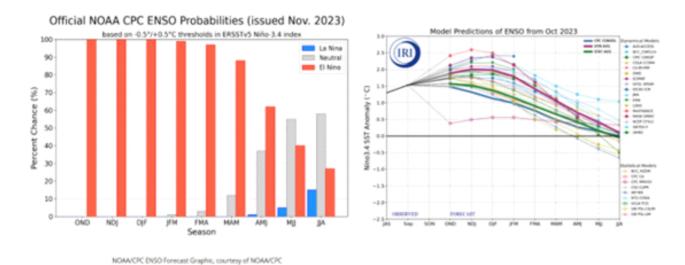


Figure 1: IRI/CPC and Bureau of Meteorology Australia Consensus ENSO Forecast

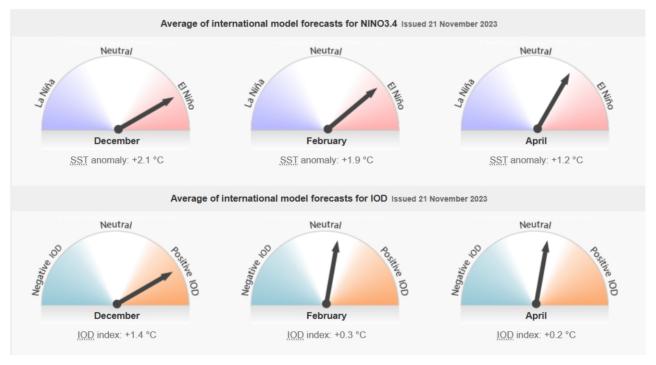


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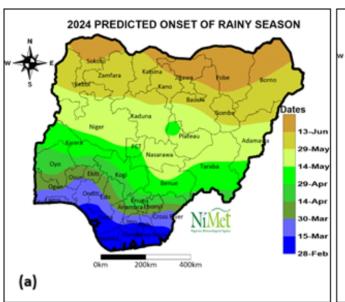
### Chapta Two 2023 Seasonal Climate Predictions

Di 2024 SCP forecast dey base on El-Nino (warm) phase of ENSO ensemble projection wey be say e get hotter-than-normal temperatures, rainfall wey go less pass normal, short rainy season, and everywhere go dry wella for most parts of di country.

### 2.1.1. Onset Dates of Rainy Season & Comot from Normal (Long-term Average):

Di 2024 prediction show say di earliest onset date fit happen on or about di 9th of March and e go dey around di coastal zone of southsouth states like Bayelsa, Rivers, and Akwa Ibom. (See Figure 3a).

### 2.1 Rainfall Predictions:



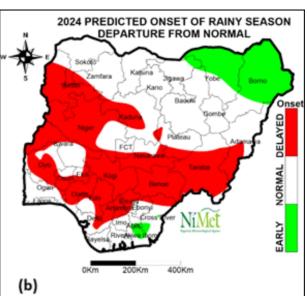


Figure 3a and b: Predicted onset dates of the raining season and Departure from normal.

As di ITD dey move northward, di onset dates for places wey get higher latitudes go dey later. Di prediction talk say di onset dates of di 2024 rainy season for places wey dey inland for di south fit happen between March and April; and for di central states, e go happen inside May. Di onset dates of di rainy season for Sokoto, Kebbi, Zamfara, Kano, Katsina, Jigawa, Yobe and Borno states fit dey between June and July, and dia edges fit get onset dates between 13th June and 6th of July 2024.

Di 2024 onset of rains fit delay for di

central states of di country. Also, parts of Ekiti, Oyo, Ondo, Edo, Delta, Anambra, Enugu and Ebonyi states fit experience delay for onset. Normal onset fit happen for di northern states. Borno, Abia and Akwa Ibom states fit get early onset wen you compare am with dia long-term averages.

E dey important make we sabi say strong windstorms for di whole country and sandstorms for di extreme northern states fit happen before di onset period. Make everybody dey very careful and shine dia eyes.

### 2.1.2 Time wey Growing Season go finish for 2024:

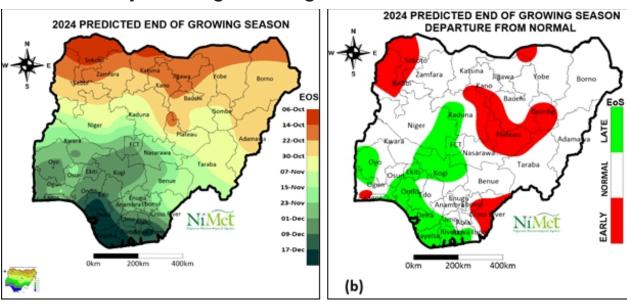


Figure 4a and b: Predicted End of growing season and Departure from normal.

Di time wey growing season go finish for 2024 go be like dis: rainfall go stop for different parts of Naija from early October, and e go last reach mid-November for di north. E go begin move go south, from mid-November around central states, and e go finish for mid-December for di southernmost states for di kontri. Dem talk say some parts like Yobe, Jigawa, Sokoto, Kebbi, Kano, Kaduna, Plateau, Nasarawa, Taraba, Gombe, Bauchi, Cross River, Ebonyi, Ogun, and Lagos go finish early. But for places like Bayelsa,

Rivers, Akwa Ibom, Ondo, Ekiti, and some parts of Edo, Delta, Ogun, Oyo, Kogi, Kwara, FCT, Niger, and Kaduna, e go end late.

Di end of di season go start from di north by October 6 for states like Katsina, Zamfara, Sokoto, and Kebbi. For places like Borno, Yobe, Jigawa, and Kano, e go start by October 14. For di central states, e go happen between October 30 and November 15. Southern parts go see di end of season by November 23, 2024

### 2.1.3 Length of Rainy Season (LoS) & Comot from Normal:

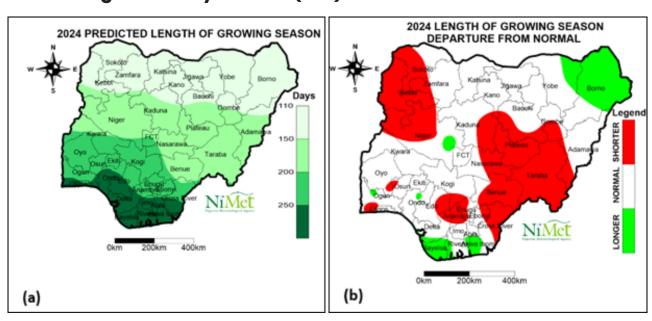


Figure 5a and b: Predicted Length of growing season and Departure from normal.

Di forecast show say di length of di season go range from 110 to 292 days across di kontri. Coastal areas like Lagos, Delta, Edo, Bayelsa, Rivers States and others go get season wey go last between 250 to 292 days. For di inland areas like Ogun, Oyo, Osun, Ekiti, Kogi, Abia, Ebonyi, and Enugu, e go last between 200 and 250 days. Some northern states like Niger, Kaduna, Plateau, Benue,

Taraba and some parts of Adamawa, go get season between 150 and 200 days. For dinorthernmost states, e go last between 110 and 150 days. Dem get full informate for dis forecast for states and local government areas for dikontri.

### 2.1.4 Predicted Rainfall wey go fall for 2024 & Comot from Normal:

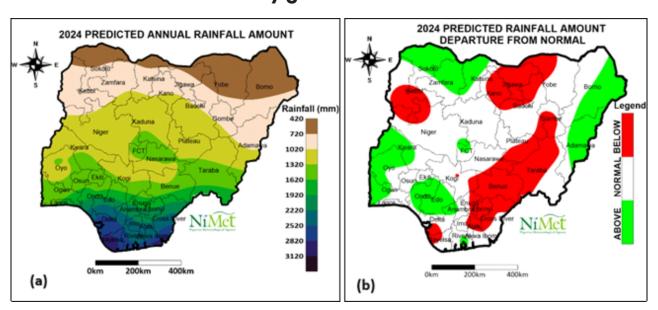


Figure 6a and b: Predicted rainfall wey go falll and commot from normal.

For 2024, di amount of rain fit range from 418 millimeters (mm) for far northern states to over 3000 mm for states wey dey near ocean. Some places for northern states like Borno, Yobe, Katsina, Jigawa, Zamfara, and Sokoto go get rain wey dey below 750 mm. But for some coastal states like Delta, Bayelsa, Cross River, and Akwa Ibom, di rain fit be between 2770 and 3021 mm.

year go reduce for some parts like Yobe, Jigawa, Bauchi, Kano, Kebbi, Gombe, Plateau, Taraba, Nasarawa, Benue, Enugu, Ebonyi, Cross River, Delta, and Bayelsa states. But for other parts of di kontri, e fit dey normal or even plenti pass normal.

Make una check di Agency's website ontop (www.nimet.gov.ng) for more updates and advisories.

Dem predict say di rainfall for di

### 2.1.5 Dry Spell Prediction for 2024 Rainy Season

# Sokolo Zamfara Kajsina Mawa Obe Borno Risyelas Riverser Kee Risyelas Riverser Kee Risyelas Riverser Kee Riverser Kee

Figure 7: Predicted areas of occurrence of dry spell in July-August 2024

Di 2024 Prediction show say for July e be like say dem go get serious dry spell wey go tanda for like 15 and e fit pass after demdon confirm rainfall for the northern states of Nigeria and northern Oyo. The joinbodi still predict Ordinary dry spell fit reach 16 days for the Central and mild dry spell (wey no reach 8 days) naim fit happen for Ogun, Osun, Edo, Enugu, Anambra and northern Cross River states.

Dem talk say na for dis areas dem fit experience ogbonge dry spell.

Borno State: Abadam, Bama, Mobbar, Kukawa, Guzamala, Gubio, Nganzai, Monguno, Marte, Ngala, Bama, Gwoza, Kaga, Mafa, Magumeri

Yobe State: Barde, Bursari, Damaturu, Fika, Potiskum, Geidam, Machina, Nguru, Karasuwa, Yunusari, Yusufari, Jakusko, TarmuwaKatsina state: Baure, Batsari, Bindawa, Batagarawa, Daura, Charanchi, Kankia, Jibia, Rimi, Mani, Mashi, Mai'Adua, Matazu, Katsina, Dutsi, Sandamu, Ingawa, Zango

Jigawa State: Babura, Birniwa, Gwiwa, Garki, Roni, Kazaure, Gumel, Guri, Yankwashi, Kirkasama, Maigatari, Kaugama, Sule-Tankarkar, Malam Madori

**Bauchi State:** Damban, Darazo, Gamawa, Giade, Itas/Gadau. Jamaáre, Katagum, Misau, Ningi, Shira, Warji, Zaki

Yobe State: Barde, Bursari, Geidam, Machina, Nguru, Karasuwa, Yunusari, Yusufari, Jakusko, Tarmuwa

**Kebbi State:** Arewa Dandi, Aleiro, Kalgo, Bunza, Birnin Kebbi, Argungu, Augie, Jega, Maiyana

**Zamfara State:** Anka, Bakura, Birnin Magaji, Bukkuyum, Bungudu, Gummi, Kaura Namoda, Shinkafi, Talata Mafara, Tsafe Sokoto state:Binji, Bodinga, Dange-Shuni, Gada, Gwadabawa, Illela, Isa, Rabah, Shagari, Silame, Tambuwal, Yabo

**Gombe State:** Nafada, Yamaltu-Deba, Dukku, Funakaye

Dem predict say for 2024, small dry season go show face

Dis small dry season wey dem dey call "LDS" na when rain no too plenty for Southwest Nigeria afta di first big rain don fall for May and June. E dey happen mostly for di end for July and beginin of August. Dis time, di air down low wella for energy and e dey always cloudy with cold daytime temperature wey dey below 18 at 850hPa level

### 2.1.6 Little Dry Season Prediction for 2024

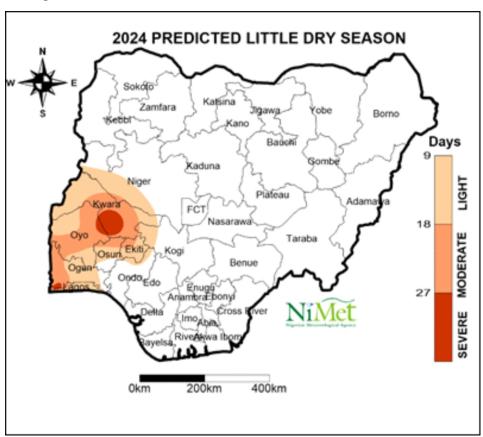


Figure 8: Predicted 2024 little dry season.

(1500m)Dem talk for some books say dis thing dey happun sake of some upwelling of ocean current around the Gulf of Guinea wey develop into high-pressure system wey stop di normal ascent of moist air.

Dem use statistics talk say for 2024, dis LDS go start between 22nd July and 2nd August 2024, and e go affect Kwara and Lagos states pass as dem show for Figure 8, and e go last pass 27 days. Some parts of Oyo, Ogun, Ekiti, and Lagos mainland go feel small small LDS wey go last like 18 to 27 days. Ondo, Edo and some other places for Kogi no go too feel am.

### 2.2. Temperature Predictions for 2024

Dem don predict di daytime and night-time temperatures, and how e differ from di long-term averages wey be from 1991 to 2020, for di five key months – January, February, March, April, and May. Dis section na where dem show us how heat dey affect di kontri wella, especially for January wey be di coldest month, while March, April, and May na di hot months, depending on where you dey for di kontri. Dem dey expect say for some parts of di kontri, di temperature go dey hotter pass normal temperature wey we dey expect for dat time of di year. Na so di heat go dey scatter di place wella.

### 2.2.1 Predicted January 2024 Day and Nigh time Temperature Forecast and Anomalies (Deviations from Long-term Average)

### 2024 PREDICTED JANUARY DAY-TIME (MAXIMUM) TEMPERATURE

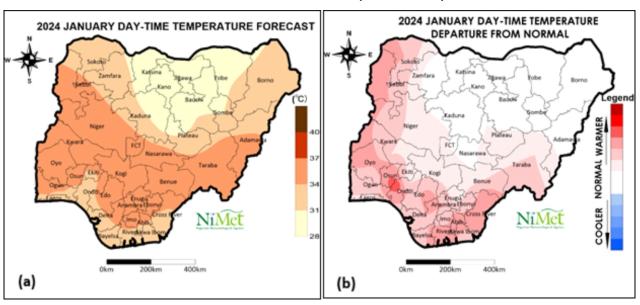
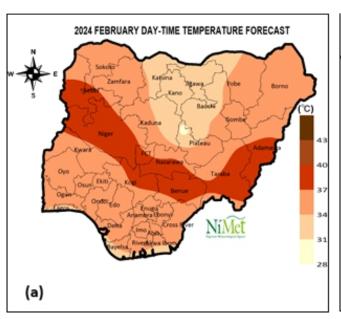


Figure 9a and b: Predicted January 2024 Daytime temperature and departure from normal.

Dem predict say di daytime temperature for January 2024 go dey between 28.2 °C and 35.6°C across di whole kontri. For central, southeast, some southwest and northeastern states, dem dey expect say di temperature go pass 35°C. For areas wey dey near di coast, dem dey expect say di temperature go dey between 31°C to 34°C as wey dem show for Figure 9a. But places like Plateau, Kano, Jigawa and some parts of Yobe, Kaduna, Bauchi, and Katsina

states, dem go get di lowest maximum temperature between 28°C and 31°C as wey dem show for Figure 9b. Di difference from normal as wey dem show for Figure 9b, mean say plenty parts of di kontri go experience temperature wey go pass di normal level. But for some a r e a s f o r n o r t h w e s t a n d northeastern states, dem go just dey experience normal temperature levels.

### 2024 PREDICTED JANUARY NIGHT-TIME (MINIMUM) TEMPERATURES



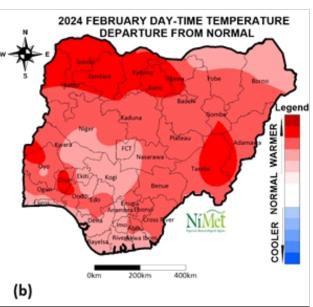


Figure 10a and b: Predicted February 2024 Daytime temperature and departure from normal.

Dem talk say for January 2024, night temperatures for North go waka between 11°C and 17°C as wey dem show for Figure 10a. For central cities and some areas for Oyo, Osun, Ekiti, and Adamawa states, night temperatures fit dey around 17°C to 20°C. Di Southern states and parts of Niger state go dey feel night temperatures wey go range from 20°C to 23°C throughout di forecast period. Lagos, Bayelsa, and Delta

states go dey see night temperatures wey go dey between 20°C and 23°C. Dem talk say for most states, night temperature go dey normal as wey dem expect. But for some states like Borno, Adamawa, Bauchi, Gombe, Kogi, Nasarawa, Anambra, Ekiti, and Rivers, night go dey cooler than di normal level. Abeg, waka jeje for night if you dey those areas.

### 2.2.2 Predicted February 2024 Day and Night-time Temperature Forecasts and Anomalies (Deviations from Long-term Average)

### 2024 PREDICTED FEBRUARY NIGHT-TIME (MINIMUM) TEMPERATURE

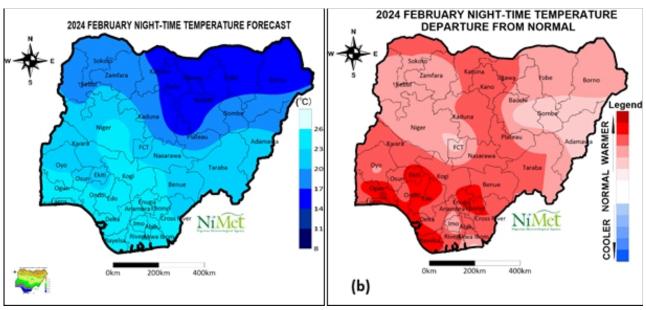


Figure 11a and b: Predicted January 2024 Night-time temperature and departure from normal.

### 2024 PREDICTED FEBRUARY DAY-TIME (MAXIMUM) TEMPERATURES

Dem predict say February daytime temperature for 2024 as wey dem show for Figure 11a, e go dey between 31°C and 40°C. E fit be say di lowest daytime temperature wey dey below 31°C go show for Plateau state, while some parts of Kebbi, Niger, FCT, Kogi, Nasarawa, Benue, Taraba, Adamawa states and FCT fit see di highest temperature between 37°C and 40°C. Dem dev expect say daytime temperatures for February go mostly dey warmer pass di normal level wey don dey for long for di whole country, as wey dem show for Figure 11b. Abeg, make una prepare well for di heat wey go show for dat month.

Dem don predict say di minimum (nighttime) temperature for February 2024 go dey between 14°C and 26°C across di whole country. From di North central zone go down reach di coastal parts of di country, e go likely be say dem go record nighttime temperatures between 20°C to 26°C, while di North fit get temperatures wey dey below 20°C. Dem dey expect say minimum temperatures wey dey range from 14°C to 17°C go dey for Jigawa, Borno, Yobe, Bauchi and Kano states during dis period. Dem predict say warmer-than-normal nighttime temperatures go happen for most

parts of di country for February 2024. Dem dey expect say nighttime temperatures for parts of Borno, Yobe, and Jigawa states go dey cooler pass normal (See Figure 12b). Abeg, make una prepare well for di different temperatures wey go show face for dat month.

### 2.2.3 2024 PREDICTED MARCH DAY-TIME (MAXIMUM) TEMPERATURE

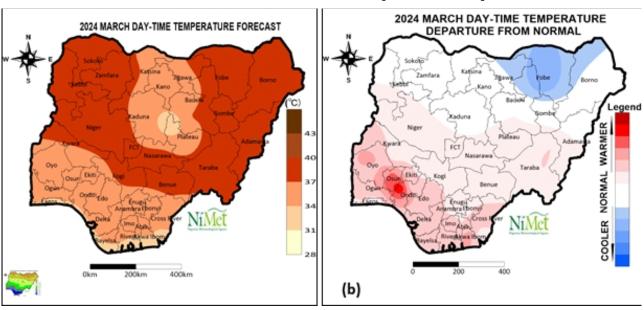


Figure 12a and b: Predicted February 2024 Daytime temperature and departure from normal.

For March 2024, dem don yan say di daytime (maximum) temperatures for Nigeria go range between 31°C and 40°C. Dem expect say di lowest temperatures wey be 31°C to 34°C go dey for Plateau and some parts of Bayelsa, Rivers, and Akwa Ibom state. But di highest temperatures wey be 37°C to 40°C fit happen for di central and northern parts of di country, except for Kano, Jigawa, Katsina, Kaduna, Plateau, Bauchi states, and di southern states wey fit experience daytime temperatures between 34°C to 37°C.

Dem don predict say plenty parts of di country go experience temperatures wey dey hotter pass normal for March 2024. E be like say di hottest temperatures go happen for Osun and Ondo states. Dem dey expect normal conditions for di North, 'cept for Yobe, northern Bauchi, and eastern Jigawa states wey fit experience cooler daytime temperatures pass di normal longterm conditions. Abeg, make una prepare for dis weather changes wey dey come.

## 2024 FEBRUARY NIGHT-TIME TEMPERATURE FORECAST W Solotio Solotio

### 2024 PREDICTED MARCH NIGHT-TIME (MINIMUM) TEMPERATURE For March 2024

Figure 13a and b: Predicted February 2024 Night-time temperature and departure from normal.

Di night-time temperatures for Nigeria go range from 17°C to 26°C, as dem show for Figure 14a. Dem dey expect say di lowest night-time temperature wey be 17.0°C go happen for Plateau State, while di highest value wey pass 23°C go happen for plenty parts of di country.

Dem dey expect say for plenty areas for di North and South, di night-time temperatures go dey warmer pass normal. But for di north-central states, dem go experience normal night-time temperatures, while for di FCT and

di places wey dey around am, dem go dey cooler pass normal for night. Abeg, make una make sure say una dey prepared for dis weather wey dey come.

### 2.2.4 Predicted April 2024 Day and Night-time (Minimum) Temperature Forecasts and Anomalies (Deviations from Long-term Average)

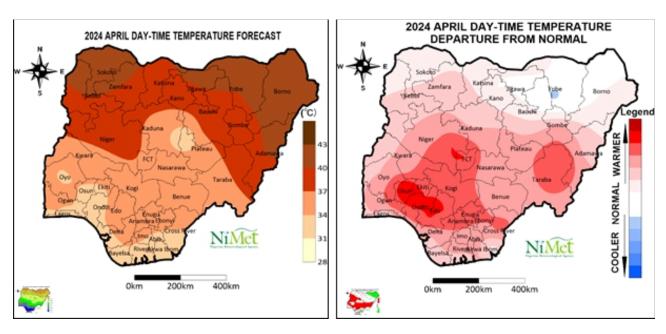
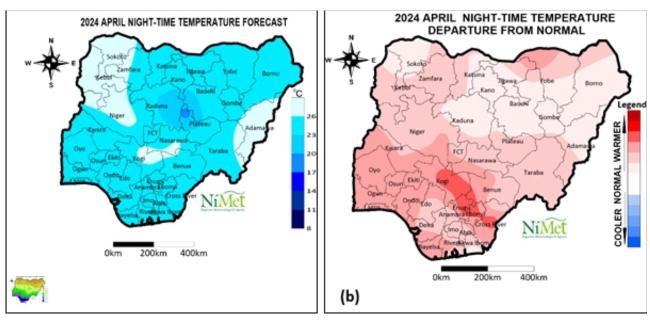


Figure 14a and b: Predicted April 2024 Daytime temperature and departure from normal.

As we enter April 2024, di maximum temperature for di whole country go dey between 31°C and 43°C. Dem dey expect Plateau, Oyo, Osun, and di waterside states to get di lowest maximum temperatures of 31°C to 34°C.

We go experience temperature wey dey hotter pass normal for di whole country, except for some places for Jigawa, Bauchi, and Borno states wey go get normal aftanoon temperatures. But Yobe state go experience temperature wey dey cooler pass normal. Abeg, make una dey ready for dis weather changes.

### 2024 PREDICTED APRIL NIGHT-TIME (MINIMUM) TEMPERATURE



For April 2024, we dey look say the minimum temperature go dey from 17°C fit reach more than 26°C across di whole country. E dey expected say most parts of di country go feel nighttime temperatures between 20°C to 23°C. Some places like Sokoto, Kebbi, Zamfara, Adamawa, Niger, Kogi, and Nasarawa states go get temperatures wey pass 26°C. Plateau and areas wey dey near am go feel temperatures between 17°C and 20°C.

Dem don yan say make we shine our eyes well-well because our night go hot pass bifor night-time temperatures dey on ground for April 2024. So make everybody dey prepare for dis weather wey fit change anyhow.

### 2.2.5 Predicted May 2024 Day and Night-time Temperatures Forecast and Anomalies (Deviations from Long-term Average)



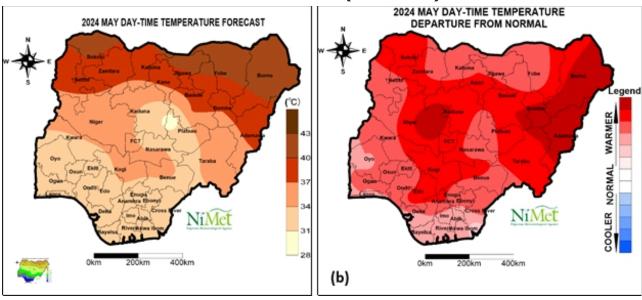


Figure 15a and b: Predicted May 2024 Daytime temperature and Departure from normal.

For May 2024, di maximum (daytime) temperature forecast across Nigeria dey show for Figure 17a. The talk-talk be say di highest daytime temperature go skata 40°C to 43°C for some areas like Yobe, Borno, Jigawa, Kebbi, and Sokoto states di place go hot ne be small. Temperatures between 37°C and 40°C go happen for places like Sokoto, Kebbi, Zamfara, Katsina, Kano, Jigawa, Yobe, Borno, Bauchi, Gombe, and Adamawa. Dem say daytime temperatures wey go be from 34°C to 37°C go happen for places like Kaduna, Niger, Plateau,

Kogi, Nasarawa, Benue, Taraba states, and even the FCT. For Southern states, dem dey expect temperatures between 31°C to 34°C. The lowest daytime temperatures of 28°C to 31°C go dey happen for Plateau state.

Figure 17b wey show di departure of di predicted May 2024 daytime temperature from normal, don talk say warmer than normal temperatures dey expected for di whole country for May 2024. So, make everybody prepare well because di heat fit strong well well.

### 2024 PREDICTED MAY NIGHT-TIME (NIGHTTIME) TEMPERATURE

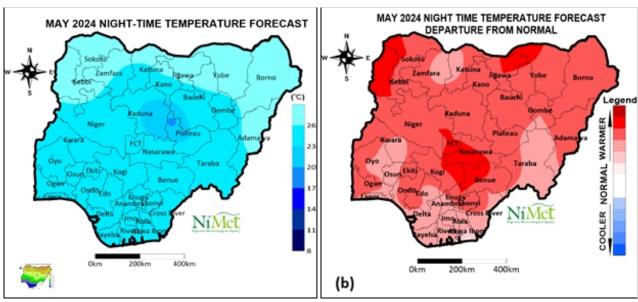


Figure 16a and b: Predicted May 2024 Night-time temperature and Departure from normal.

The yan be say for May 2024, say night-time temperatures for different places across di kontri go dey between 17°C and 27°C. Dem talk say di coldest temperatures wey go dey between 17°C to 20°C go happen for some parts of Plateau, Bauchi, and Kaduna State. For di rest of di kontri, temperatures go

dey between 23°C to 26°C. Generally, the prediction be say night-time temperatures go dey hotter pass normal for most parts of di kontri as wey dey show for Figure 18b. So make we dey ready for di heat wey fit come.

### 2.3. Climate and Health

Climatic conditions dey affect how some sicknesses dey burst and spread. Malaria, cerebrospinal meningitis, and heat stress na common health wahala for Naija. The World Malaria Report 2023 wey World Health Organization (WMO) publish show say for 2022, worldwide, we get 249 million cases of malaria and Nigeria carry 27% of the cases plus 38.5% of malaria deaths for pikin wey dey under 5 years. Nigerian Centre for Disease Control (NCDC) still yan say for 2022, Naija record 2,765 suspected cases of meningitis with 190 people wey die for 140 local government areas inside 30 states plus FCT. Outbreak and transmission of malaria and meningitis dey affect by temperature, relative humidity, and rainfall. Dem dey use the predicted climatic conditions to know how likely outbreak go happen and how serious the malaria and meningitis go be.

The 2023 edition of WMO's Annual State of Climate Services (WMO-No1335) Report focus on health. E highlight the need for tailored climate info and services to support health sector against more extreme weather, bad air quality, change in infectious disease patterns, and food plus water wahala. Although many countries dey use climate info and services to detect, monitor, predict, and manage climaterelated health risks, plenty room still dey to make climate science and services better for health. This report look into how climate services for health dey for Naija and e bring out next steps, recommendations, and case studies.

Climate factors like temperature, humidity, and rainfall pattern, dey heavily affect mosquito life cycle, how malaria parasites grow inside mosquitoes, and how malaria dey spread. For di past 100 years, global temperature don dey rise, with speed wey increase from the mid-

1950s. Simple modeling show say this rise go make mosquitoes wey carry disease spread reach more places. Increase in malaria fit happen because of climate change. Research show say malaria dey spread faster for places wey malaria don already dey or e dey come back for areas wey people don control am before. High temperatures, plus plenty rain and humidity, dey make place sweet for malaria-carrying mosquitoes, even for areas wey people never report malaria before. Rising sea levels fit affect cities for south like coastal parts of Naija, e fit make flooding and waterborne diseases dey more common. Dry

season, plus hot air, fit dey affect health for bad way.

Recent Scientific Report on Meningitis talk say we know how climate and weather take affect sickness like Meningitis. Meningitis dey happen pass for sub-Saharan Africa and e dey come with high temperature and dust wey dey fly for air pass other parts of the world. This part of Africa wey dey suffer pass, dem call am "Meningitis Belt" because plenty cases dey happen there. The Meningitis Belt stretch from Senegal reach Ethiopia. Some parts of Naija dey inside dis African Meningitis Belt.



(Source: Centers for Disease Control and Prevention (CDC). CDC Health Information for International Travel 2014)

For di widespread meningitis epidemics for di 1990s, dis area see hundreds of thousands of cases of di disease. Di meningitis belt for Africa don already dey spread, and people dey expect say e go still dey spread more because of climate change.

### 2.3.1 Malaria Look Look Forecast for Nigeria 2024



Figure 17. Anopheles mosquito

According by di International Research Institute for Climate and Society (IRI), seasonal climatic condition wey fit favour malaria transmission na when rain wey fall pass 80 mm, temperature dey between 18°C and 32°C, and relative humidity pass 60%. If all these conditions dey for one place or region, e mean say malaria fit happen for there.

Di predicted rainfall, temperature, and relative humidity na im dem dey use take know how alert dem go dey for malaria. If rain pass 80 mm, temperature dey between 25°C and 32°C, and relative humidity pass

80%, dat area dey at high risk for malaria and dem go put am under High Vigilance. If temperature dev between 20°C and 25°C, relative humidity dey between 70% and 80%, and rain pass 80 mm, dem go advise Moderate Vigilance. Low vigilance for malaria na im dem go recommend if temperature dev between 18°C and 20°C, relative humidity dey between 60% and 70%, and rain pass 80 mm. No Vigilance dey recommended if temperature dey below 18°C or pass 32°C, relative humidity dey less than 60%, and rain no reach 80 mm. Dis na because dis kind weather no good for mosquitoes to born pikin.

### 2.3.2 Malaria Chook Eye Maps for January to May 2024

### 2.3.3 Malaria Look Look Maps for January 2024

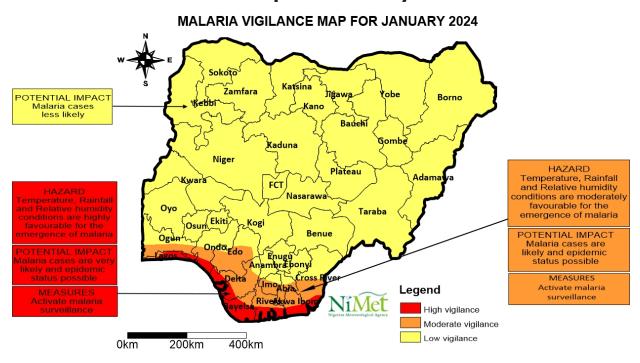


Figure 18. January 2024 Malaria Vigilance.

Dem predict say di weather for January 2024 go dey good for mosquitoes to dey born pikin wella during dat month. Dem dey expect say different types of malaria go dey happen for different places for Naija. So, we dey recommend different levels of chook eye for malaria for different places for di kontri as dem show for Figure 21.

Dem dey advise make we dey put eye well well for malaria for areas like Lagos, Ondo, Delta, Bayelsa, Rivers, Akwa Ibom, and Cross River. For places like Ogun, Imo, and Anambra states, dem dey recommend moderate malaria vigilance. But for di rest of di kontri, dem dey tell us make we dey on low malaria vigilance level.

### 2.3.4 February 2024 Malaria Look Look Map

Becos of wetin we don predict for di weather for February 2024, e be like say Lagos, Ondo, Delta, Bayelsa, Rivers, Akwa Ibom, and Cross River fit get plenti malaria cases as e show for Figure 22. So, as e be, we dey advise say make we chook eye well well for HIGH MALARIA VIGILANCE for all these states.

For Ogun, Osun, Imo, Enugu, Ebonyi,

Abia, and Anambra states, we dey recommend make we chook eye well MODERATE MALARIA VIGILANCE. But for di central and northern states for February, di temperature, rainfall, and relative humidity wey dem don predict no go too dey good for mosquitoes to dey born. Dis one mean say di chance of malaria for dose areas go dey low. So, dem dey advise make we chook eye small LOW MALARIA VIGILANCE for di north and central states.

### 2.3.5 March 2024 Malaria Look Look Map

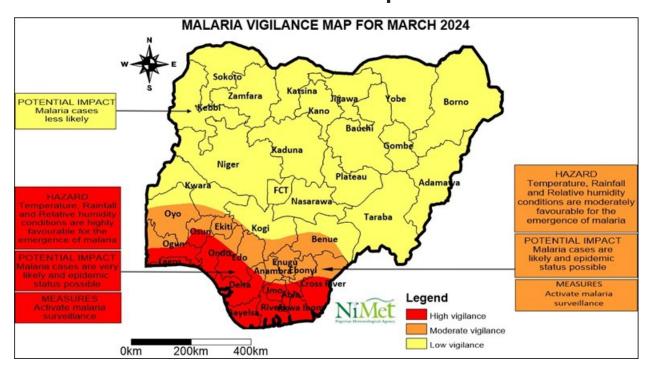


Figure 19. March 2024 Malaria Vigilance

Ontop the prediction for di weather for March 2024, e be like say di weather go dey chook eye for southern part of Nigeria and some parts of Benue. So, e get as e be, di malaria wey go dey plenty for those areas go high wella (See Figure 23). So, dem dey advice make people dey becareful and shine their eyes for Benue and all di southern states.

For Oyo, Ekiti, Anambra, Enugu, Ebonyi, and some parts of Kwara, Kogi, and Benue states, dem dey recommend make people dey moderately vigilant.

But for di North, dem dey recommend make dem dey low-keyvigilant.

#### 2.3.6 April 2024 Malaria Look Look Map

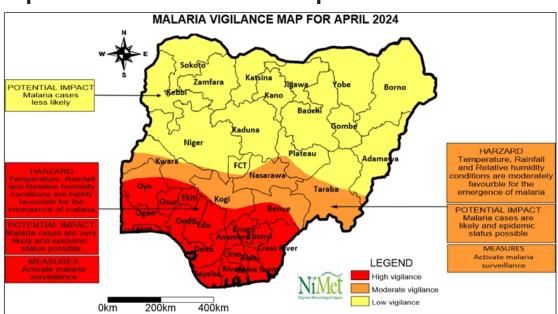


Figure 20. April 2024 Malaria Vigilance

As we fit see for Figure 24, di prediction for April 2024 dey show say di chance for malaria cases to show face for di southern states na very high, but e no too plenty for di central states. So, dem dey strongly advice make people dey very

vigilant for di south.

For di central states, dem recommend make dem dey moderately vigilant, while for places for di north, dem dey suggest make vigilance dey low.

#### MALARIA VIGILANCE MAP FOR MAY 2024 Zamfara POTENTIAL IMPACT Malaria cases less likely Borno Kano Combe Kaduna HAZARD Temperature, Rainfall and Relative humidity Adama FCT onditions are moderately favourable for the Osum Ekiti 2 Kogi emergence of malaria POTENTIAL IMPACT Malaria cases are likely and epidemic status possible Ondo Edo Enugy Anamora bony MEASURES (Imo/b/a) Activate malaria surveillance MEASURES Activate malaria Legend NiMet High vigilance Moderate vigilance Low vigilance 0km 400km 200km

#### 2.3.7 May 2024 Malaria Look Look Map

Figure 21. May 2024 Malaria Vigilance

For May 2024, as rainfall dey move go north, di southern and central states get high chance to see malaria cases as shown for Figure 25. Based on dis tori, dem recommend say make people dey very vigilant for those areas.

Moderate vigilance dey advised for some parts of Adamawa,

Taraba, Gombe, Bauchi, Plateau, Kaduna, Kano, Katsina, Zamfara Kebbi, Niger, and Kwara states.

But for di remainin of di country, make we chook eye small for malaria vigilance na wetin dem dey recommend.

## 2.4 Meningitis

Cerebrospinal Meningitis (CSM) dey happen everywhere for di world but e dey worst for di meningitis belt for Sub-Saharan Africa. During dry season wey be from November to June, e dey get periodic epidemics wey fit reach up to 1,000 cases per 100,000 people. According to NCDC Cerebrospinal Meningitis report as of 30th August 2023, dem don report total of 2765 suspected cases plus 190 deaths (wey be 6.9% CFR) from 30 states of di kontri for 2022/2023 CSM season from Epi week 40 of 2022 to Epi week 39, 2023. As we fit see for figure 25, some parts of Nigeria dey inside di Sub-Saharan African meningitis belt, wey stretch from Ethiopia for di east reach Gambia/Senegal for di west. All di 19 northern states, FCT, and some southern states like Bayelsa, Cross River, Delta, Ekiti, Ogun, Ondo, Osun dey inside dis Meningitis belt. Dis parts of di kontri dey always dey experience frequent outbreaks of meningitis. Temperature, relative humidity, and dust for air na major risk factors for meningitis. NiMet dey predict di probability of meningitis and how e dey spread across Nigeria using dis three climate parameters.

Meningitis Vigilance forecast: For 'High vigilance', if relative humidity dey less than 20%, temperature between 25°C to 32°C, and dust concentration for atmosphere dey between 500 to 2000 µg/m3. For 'Moderate vigilance', if relative humidity dey between 20 to 40%, temperature between 20°C to 25°C, and dust concentration dey between 200 to 500 µg/m3. Low vigilance dey happen when relative humidity dey above 40%, temperature below 25°C, and dust concentration dev between 50 and 200 µg/m3. Meningitis outbreaks no dey likely happen if rain fall well, so 'no vigilance' dey required.

#### MENINGITS VIGILANCE MAP FOR JANUARY 2024 nidity conditions are Sokoto Katsina Zamfara HAZARD Jigawa Dust wind and humidity conditions are moderately favourable for the emergence of Bauchi meningitis POTENTIAL IMPACT Meningitis cases likely and epidemic status possible Fct MEASURES Activate meningitis surveillance Nasarawa Taraba Osun Ekiti POTENTIAL IMPACT Malaria cases less likely Enugu Anambra bonyi Legend NiMet High vigilance Moderate vigilance Low vigilance

### 2.4.1 January 2024 Meningitis Look Look

Figure 22: January 2024 Meningitis Vigilanc

Bicos of di weather condition wey we predict for January 2024, e be like say di chance dey high for meningitis cases to show face for some parts of Sokoto, Jigawa, Yobe, Bauchi, Gombe, and Borno states, so make we chook full eye (high vigilance dey advised) for those areas. Make we chook two eye (Moderate vigilance dey prescribed) for di north, Plateau,

0km

200km

400km

Nasarawa, and Taraba States for di central. Slim chance dey for meningitis cases for di inland states for di south, FCT, Niger, Kwara, and Benue states. So, make we use one eye take monitor di disease (low vigilance) for those states. E hard for meningitis to show for di coastal areas, so no vigilance dey advised for those states.

No vigilance

#### **MENINGITS VIGILANCE MAP FOR FEBRUARY 2024** imidity conditions are Katsina Zamfara Borno TENTIAL IMPAC HAZARD ningitis cases are very ikely and epidemic status possible Dust wind and humidity conditions are moderately favourable for the emergence of MEASURES Activate meningitis surveillance Niger meningitis POTENTIAL IMPACT Meningitis cases likely and epidemic status possible Taraba POTENTIAL IMPACT Osun Ekiti Malaria cases less likely MEASURES Activate meningitis surveillance Anambra bonyi Cross Legend NiMet High vigilance Moderate vigilance Low vigilance No vigilance 200km 400km 0km

### 2.4.2 February 2024 Meningitis Look Look

Figure 23: February 2024 Meningitis Vigilance

Figure 27 dey show say states for di north dey predicted to dey under high and moderate meningitis vigilances because of di weather condition wey go favor dem for February 2024. Dem recommend Low vigilance dey for FCT, Benue, Kwara, Kogi, Oyo, Osun, Ekiti, Enugu, Parts of Ogun, Ondo, Edo, Anambra, Ebonyi, and Cross River states. E hard for meningitis to show for most southern states, so no vigilance dey advised for those parts of di country.

#### **MENINGITS VIGILANCE MAP FOR MARCH 2024** Dust wind and umidity conditions are Zamfara for the emergence of meningitis HAZARD ningitis cases are ver ikely and epidemic status possible Dust wind and humidity conditions are moderately favourable Niger for the emergence of meningitis Plateau POTENTIAL IMPACT Meningitis cases likely and epidemic status possible Taraba POTENTIAL IMPACT Osun Ekiti Malaria cases less likely MEASURES Activate meningitis Benue surveillance NiMet High vigilance Moderate vigilance

## 2.4.3 March 2024 Meningitis Look Look

Figure 24 March 2024 Meningitis Vigilance

For March 2024, e go make sense make we shine eye well for Sokoto, Katsina, Zamfara, Kano, Jigawa, Bauchi, Yobe and Borno state as shown for Figure 28 based on di predicted climate conditions.

0km

200km

400km

For some areas like Kebbi, Niger, Zamfara, Kaduna, Taraba, Adamawa, Plateau, Federal Capital Territory, Benue, Kwara, Kogi, and Nasarawa states, we fit advise say make dem dey cautious, but e no too serious like that.

E no too likely say meningitis go reach south for March 2024, so make we no worry too much for states for di south.

Low vigilance

#### MENINGITS VIGILANCE MAP FOR APRIL 2024 Sokoto Katsina Zamfara HAZARD Dust wind and humidity conditions are moderately favourable for the emergence of Bauchi Niger meningitis POTENTIAL IMPACT Meningitis cases likely and epidemic status possible POTENTIAL IMPACT Malaria cases less likely Taraba Osun Ekiti MEASURES Activate meningitis surveillance Legend NiMet High vigilance Moderate vigilance Low vigilance No vigilance 200km 400km

#### 2.4.4 April 2024 Meningitis Look Look

Figure 25: April 2024 Meningitis Vigilance

Dem don predict say rain go fall well, temperature go high, relative humidity go plenty, and dust go dey plenty for air, so e be like say meningitis fit show face wella for parts of Sokoto, Zamfara, Katsina, Jigawa, Yobe and Borno states. Make we shine our eye well well for those areas and make we dey careful.

For some other places like Gombe, Kebbi, Adamawa, Kano, Kaduna and Kebbi state, e no go too bad make we just dey observant, but e no too serious like that. For Niger, Kaduna, Adamawa, Taraba, and Plateau states, make we just dey chill, e no too dey likely say meningitis go show for those places.

No need for plenty worry for the remaining parts of the country as we see am for Figure 29.

#### MENINGITS VIGILANCE MAP FOR MAY 2024 midity conditions are Sokoto highly favourable or the emergence of meningitis HAZARD Bauchi Dust wind and humidity conditions are Kaduna moderately favourable for the emergence of meningitis Niger Plateau Adam POTENTIAL IMPACT Fct Meningitis cases likely and epidemic status possible Taraba POTENTIAL IMPACT Osun Ekiti Malaria cases less likely MEASURES Activate meningitis surveillance OndorEdo Legend High vigilance Moderate vigilance Low vigilance

#### 2.4.5 May 2024 Meningitis Look Look

Figure 26: May 2024 Meningitis Vigilanc

Dem predict say weather for May 2024 no too dey favour meningitis for plenty states for Naija, so we fit relax small, no need for plenty fear. But for far north, e still be like say meningitis fit show face small, so

0km

200km

400km

make we still shine our eye wella, low to high vigilance still dey advised. (See as e dey for Figure 30).

No vigilance



## **Chapta Three**

## Implications of the 2024 Seasonal Climate Prediction for Some Key Economic Sectors

## 3.0 Implications of the 2024 Seasonal Climate Prediction for Some Key Economic Sectors

Weather dey affect every part of our economy and how people dey do dem daily activities. Wetin dem don predict for di climate for Naija for 2024 go shake different sectors of our economy for different levels, and how people go respond to am go dey different from one sector to another. Some of di key sectors wey go feel di impact pass include agriculture, water resources, power generation and distribution, transportation (by air, road and sea), health, a n d telecommunication.

## 3.1 Agriculture

Di prediction for di year 2024 show

say ditime wey crops suppose start to grow fit dey normal or e fit delay for most parts of di country. For some places like northern Borno, Yobe, Jigawa, Abia, Akwa-Ibom, and Cross-River states, dem dey expect di planting season to start early pass normal.

Dem predict say rainfall go dey below normal (from 418mm to 750mm) for places like Jigawa, some parts of Katsina, Kano, Kebbi, Yobe, Bauchi, Gombe, Taraba, and Benue states. Dis fit cause water scarcity for those areas.

#### **Advice**

(a) Farming • Farmers for areas wey dem predict say planting season go normal or e go short, make dem plant late and use crops wey fit mature fast fast.

- Dey encourage farmers for di whole North make dem plant crops wey fit manage small water and wey fit mature fast fast.
- Where expectation dey for early dry spell, make farmers no rush go plant.
- For areas wey dem predict say moderate to serious dry spell go happen, make farmers use crops wey fit manage drought. If dem no get crops wey fit manage drought, make dem use techniques like mulching, water harvesting, tied ridge, organic fertilizer and supplementary irrigation.
- Farmers suppose avoid to apply fertilizer just before rain start so dat di nutrient no go waste.
- Farmers for coastal and wetland areas suppose find alternative work to do join farming so dat dem go fit manage if flood happen.
- Make farmers diversify di kind of crops dem dey plant for Central region of Nigeria.

- Na important thing make farmers get input before planting season start. Make dem buy input early as dem fit (depending on where dem dey).
   February for South and March for Central and Northern regions of dicountry.
- Make crop farmers dey irrigate dem farm for morning and evening if e necessary.
- Make each state dey find professional advice from di right agencies like NiMet and National Agricultural Research Institutes – NARIs.
- Make farmers no plant before di time wey dem predict say planting season go start.
- Make dem strengthen di traditional way of farming wey farmers dey do for di affected areas.
- Farmers for Southwest suppose end first planting season for July and start di second one for late August for small plant-plant season.



Figure 27: Millet farm in Nigeria

#### 3.1.2 Livestock Production

#### **Poultry Farming**

- Farmers go reduce the numba of fowl wey dem dey keep during di time wey dey hard (February -May) sake of di hot weather wey dem predict.
- We dey advise farmers make dem consider di hot weather wey we predict when dem dey build fowl house to allow breeze enter well. But e dey important make dem dey give di fowl dem water well well.
- Dem advise make fowl owners dem dey clean di cages well well during di rainy season to stop disease from spread.
- Make dem always keep di floor dry to stop bacteria and fungi

from grow well well during di rainy season.

For di small dry season wey dey for south (August break), wey dey come with small-small cold, wey fit affect small chicks, e dey important make dem dey warm dem well. Proper management dey very important.



Figure 28: Poultry farm in Nigeria

### **Ruminant**

Farmers go make sure say dem dey give dia animal melesin for worm everitime.

- To stop yamayama from growing, make sure say we store animal food for place wey clean and dry during dirainy season.
- Make sure say animals get clean water well well, especially during di time wey hot temperature dey come.

- Dem need give cow mama melesin to prevent swelling for dia brest for say make dem no stop to dey produce milk.
- Pests like ticks dey spread quickquick during di rainy season. So, e dey important make dem dey treat di animals regularly.

**Piggery:** E dey possible say African swine fever fit showface during di (Small dry Season) August break. Farmers suppose use oyibo sense to take fight am.



Figure 29: Poultry farm in Nigeria

### **Aquaculture**

- Make fish farmers reduce how dem dey feed the fish for areas weydem predict say temperatures go dey warmer pass normal.
- Farmers suppose build earthen ponds one to two months before rain start so that dem fit get beta result well well.
- Dem go need to dig the pond wellwell to make am deeper and fit hold plenty water throughout the season, na so e dey make sense.
- During di time wey dem predict say temperature go dey high, make sure say dem dey clean fish pond wella with style, from time to time.



Figure 30. Fish Farm

## 3.2 Water Resources Management:

Efficient water resource management depend well well on how rain fall, and how people use and store the water wey dey available. Rainfall, temperature, runoff, groundwater, and streamflownadikeythings wey dey determine how water go dey available. As population dey increase, climate dey change, and human activity dey expand,

managing water get plenty plenty wahala wey dey different. As we dey cope with the changes wey dey happen for climate, na so we go take know how we go take manage water well based on how we understand the climate, and how we fit take use dis understanding make decision for managing water by dey observe, foresee and respond to any changes.

For dis reason, e dey important to prepare di country, communities, and people wey dey vulnerable to di changes wey rainfall season fit bring, based on di annual Seasonal Climate Prediction (SCP) wen NiMet dey do.

## Di 2024 Climate Prediction show say di year go get dis kind features:

- Normal to Delayed start of rainy season
- 2. Normal to Early stop
- 3. Shorter rainy season
- Rainfall wey go less pass normal and
- 5. Temperature wey go higher pass normal for plenty places for di country between January and May 2024. Based on dis prediction, e dey important make we put measures for ground to adapt, reduce di effects, and respond to any wahala wey fit come so dat we fit prevent a n y b a d t h i n g f r o m happening during di season.

#### **Advisories**

Make we consider these measures as recommended by people wey dey manage Dam, Water boards, National Emergency Management Agency (NEMA), State Emergency Management Agency (SEMAs), Rural Water Supply and Sanitation Agency (RUWASSAs), National Orientation Agency (NOA), and others.

- Make di management people for areas wen get water put plans for ground incase wahala happen, especially if di rainy season start late, stop early, or no last reach as before. Dem go need to carefully release and hold water from different sources.
- Make dem dey create awareness on top wetin people go gain if dem clear gutters, dispose waste properly, as we fit experience flash floods because of di predictions.

- Make dem identify places where dem go relocate people if flood wan happen, and also make dem improve how dem go take search and rescue people for areas wey dem predict say rainfall go plenty and for places wey dey flood prone.
- Make dem plan well well on how dem go treat water before dem supply am, because water temperature fit affect plenty chemical, microbiological, and biochemical processes wey fit affect water quality and people health.
- Make dem dey communicate well with health authorities and Water, Sanitation and Hygiene in Emergencies (WASHiE) team to fit control and give relief if any waterborne disease outbreak happen.
- Make dem improve and strengthen di way wey dem dey manage water resources, like how dem go take manage di water wey dey available according to diforecast.

- Make dem find other ways to make water dey available, like to explore groundwater, and collect water for irrigation, but dem must treat di water well to prevent contamination, especially for house use.
- Make government provide boreholes for communities to stop dem from dey abstract wateranyhow.
- Make dem work well with people wey go support, both for Nigeria and outside Nigeria, like philanthropists, NGOs, government, and also make dem evaluate wetin each person go do and how dem go take work together through organizations like Niger Basin Authorities (NBA) so that we fit get strong water resources wey go fit take meet di needs of di environment, di people wey dey grow, and di economy for di region."



Figure 31: Dams and Locations in Nigeria

## 3.3 Transportation sector

Transport na di main gate to di economy of Nigeria. E dey important for trade and e dey very strategic for movement of people, goods, and services. Weather things like fog, heavy rain, long rain season, dust haze, and hot weather fit affect how people dey travel and how things dey move.

a) Road Transport: Di forecast for 2024 show say di rain season go short, with rain amount wey fit be normal or less pass normal and

temperature wey go hotter pass normal. Dis mean say some places fit get small rain. But changes fit happen for how often storm dey come, and how erosion dey speed up, wey fit cause problem for travel and movement for different places.

Hot temperature wey dey higher pass normal fit make road to expand and contract, wey fit make potholes for places wey plenty motor dey pass and e fit put stress on top bridge joints. Dis high temperature fit also stop work for road construction, especially for

places wey humidity dey high. And e fit make car engine overheat and tyres to burst.

#### **Advisory**

- Federal Ministry of Works/Federal Road Maintenance Agency (FERMA) and state ministries suppose make sure say dem dey follow di correct procedure and standard for road design, maintenance, and repair.
- Government agencies wey dey relevant make sure say all road traffic signs dey for their correct place and people dey use am well.
- Federal Road Safety Corps (FRSC) and car owners suppose make sure say dem dey check their tyres well and make sure say dem dey okay to avoid tyre burst especially for hot season.

### (b) Air Transportation

Air transport na one of di most common and better way to travel. E dey very safe and e dey quick. Weather conditions fit affect every part of airport operation like how dem dey fuel aeroplane, maintain am, handle luggage, move passengers, and arrange flight time. Weather wahala like thunderstorms, fog, dust haze, strong wind and rain fit happen during dis time wey we forecast, and e fit cause turbulence for air and poor visibility wey fit make flight to delay, divert or cancel. Also, di high temperature fit reduce how much di aeroplane go fit carry because di air no go dense reach, and di engine go need more energy wey go lead to more fuel use and cost



Figure 32. Nigeria Air Force

#### **Advisory**

Make airline operators try to dey follow Standard and Recommended Practices (SARPs) wey dem set for safety for aerodrome and flight operations, make dem also use technology and innovation to make safety better.

Make pilots and crew dey always go the flight weather briefing for all NiMet forecast offices for everywhere for the country to make sure say all of dem dey follow Civil Aviation Regulations as dem take relate to aero-meteorological information.

## (c) Rail Transport

To fit follow as people dey move more because population and economy dey grow, di railway wey dem don dey bring back to life dey important. Di development of railway fit help for di growth of the nation. Federal government dey try make sure say railway transport dey work well to bring more money, promote development and give people job. To support Federal Government for railway transport, e dey important make dem follow some measures wey include how dem dey use weather and climate information.

# The forecasted climate conditions for 2024 fit affect railway transportation for Nigeria like this:

- Hot temperatures fit make rail tracks expand and bend, and this fit cause train to comot for track.
- When rain fall, e fit cause flooding for rail tracks, erosion for track bed, and flood fit carry track embankment. E fit even lead to ground sinking.
- Strong wind fit spoil infrastructure wey dey near railway lines like signal poles, sensors, lights, and even electric poles and cables.



Figure 33. Nigeria Railway Corporation

### **Advisory**

- Make Nigerian Railway Corporation (NRC) try dey check and monitor rail tracks well well to see if e get any damage. Dem go need increase this check during hot weather and when heavy rain dey fall for floodprone areas.
- Dem fit reduce train speed especially on hot days or days wey pass 30°C to prevent accidents. Passengers fit need

prepare for extra time for travel sake of this speed reduction.

- Make dem dey always check rail tracks to see if debris or tree don fall ontop track, especially during rainstorms.
- Dem go need provide cooling equipment and shades for train terminals to protect from heat.
   NiMet forecasts go dey useful for planning and doing all these operations for railway sector.

## (d) Marine Transportation and Blue Economy.

The marine transportation industry for Nigeria na very important part of di economy. Nigeria get up to 10,000 km of inland waterways wey seasonally reach up to 38,000 km. Up to 28 out of 36 states for Nigeria fit reach via rivers and creeks. To manage these rivers well, e fit help well well for movement of goods and services, especially agricultural ones, among states for the country. The forecast say rain season go short and rainfall fit normal or below normal for most parts of the country and coastal states. This fit affect how water flow for inland waters. If rainfall normal, rivers and streams fit also flow normally. This good thing go ease how boats fit reach inland river ports for country and help movement of passengers and cargo vessels.

But we fit see some wahala like silt and garbage wey fit block waterways from river banks. These go make am hard for boats and other vessels to navigate the waterways well. The forecast say we fit see stormy weather and low visibility especially when rain season just start. These things dey cause plenty boat accidents for our waterways.

Another wahala wey fit happen because of hot weather na say water hyacinth fit plenty well well. This one go spoil fishing and transportation industries as e fit block waterways. E fit even damage bridges and block dams. E dey grow well between 25°C to 30°C and e go grow pass when temperature reach between 33°C to 35°C. Na so e go dey plenty for hot weather.



Figure 39: Nigerian marine and waterways

#### **Advisory**

- Make National Inland Waterways Authority (NIWA) and Nigerian Maritime Administration and Safety Agency (NIMASA) dey always collect marine weather forecast every day, including Inshore and Shipping Forecast, wey NiMet dey give. Dem go need to spread am well to everybody wey dey do business for inside marine sector and all the people wey dey use Nigeria rivers and inland waterways so dem fit avoid weather wahala during their sailing.
- NIWA and NIMASA, make una
  work hand in hand with NiMet,
  dey organize meetings with
  stakeholders regularly to hear
  how dem fit improve the marine
  services wey dem dey give. Dem
  go also need to dey educate
  operators and stakeholders well
  about weather wahala for inside
  marine sector.
- Make dem put more floating barriers for strategic places for our waterways so that water hyacinth no go fit block everywhere.
- Make Nigerian Railway Corporation dey check rail tracks well to see if dem dey

alright especially during hot weather.

- companies wey dey explore oil and gas offshore, make dem dey always relate with NiMet because weather dey affect how dem dey explore, produce, transport, and distribute oil and gas. Dem need to sabi the weather reports for where dem dey work.
- Illegal, Unreported, and Unregulated (IUU) fishing na big problem, so make dem stop illegal fishing with strong law and punishment so our marine resources go dey safe for better economy.
- Federal Ministry of Works/FERMA and state ministries, make dem make sure say dem follow the right procedures for road design, maintenance, and repair.
- Our waterways need to dey dredged well to make sure say transportation for inside land strong well.

#### 3.0 Power Sector



Figure 34. Power Generation and distribution

Meteorologists don yan say we go get El Niño event for 2024, wey go bring serioue hot weather, less rain, early rain start, late rain stop, and short rainy season for Naija. Dis kain weather fit affect plenty sectors, including power industry. Make we talk how dis go affect solar, wind, and hydroelectric power.

(a) Solar Power: Dis El Niño wey dem dey predict fit bring more sunshine wey go help solar energy, especially during dry season. Solar power dey shine well when cloud no too dey and sun dey out. Dis 2024 prediction na big chance for power sector to use solar energy well and produce more light for the country. Make stakeholders make sure say dem install and maintain solar

energy equipment well to use dis opportunity wey El Niño dey give us. Dis hot weather fit make solar power work well and fit help power sector during hot times. Make government and private companies put money for solar power and technology so we fit use solar power well for Naija.

(b) Wind Power: During dry season with El Niño, wind fit blow well and fit help wind power. Wind turbines fit catch the wind well and produce light. But we need to dey careful because strong wind fit damage wind turbines. Make we dey maintain and check wind energy equipment well to fit stand the weather. Power sector need to use the wind well during dis time and make sure say wind power equipment dey okay.

(c) Hydroelectric Power: Unlike solar and wind power, hydroelectric power fit get problem during El Niño. Dis one fit bring less rain and short rainy season, so water fit no full inside dam. Dis fit reduce light wey hydroelectric power fit produce.

People wey dey handle light for power sector need to save water well, dey watch dam water level, and find way to still produce light even if water no plenty. Hot weather and no plenty water fit make am hard for hydroelectric power to work, especially when electric cables dey hot. Make power sector find ways like water management and other light sources during dry times.

#### 3.1 Telecommunication Sector:

Telecom market for Naija don dey grow well and e go still grow reach 2025. E dey grow because people dey use more phones wey fit use 3G, 4G, and 5G. For telecom to still dev grow well, we need good weather. Seasonal weather forecast go help well to make telecom business better. For 2024, rain go start for south for March. Before rain start, big storms go dey south cities. World temperature don dey rise, and for Naija, our temperature don dey rise small. Dis fit bring more big storms. Dis big rain and wind fit damage telecom masts and make network no dey good.



Figure 40: Disasters inside Nigeria

#### **Advisory**

- Make telecom companies put air conditioning for their facilities to keep am cool during hot months like January, February, March, April, and May.
- Telecom companies need to service their equipment well, especially for north before hot weather start for south and February to May for north.
- Telecom dey bring new technology like IoT, mobile apps, cloud-based apps wey need good network. Make dem follow NiMet weather forecast to know how weather fit affect their business.

#### 3.2 Disaster Risk Reduction

For 2024, rain fit no too plenty for many places for Naija. But some areas like coastal cities and low areas for Niger, Benue, Kogi, Rivers, Bayelsa, and Anambra fit get plenty flood. Dis one fit cause serious wahala. During rain start and end, bad storm fit cause plenty wahala.

Flood fit happen for cities wey drainage no good. Hot weather fit make fire start, especially for north wey e dry for February, March, and April. Emergency people need to prepare communities wey fit get flood and teach dem how to dey safe from bad weather.

Dem don yan say the heat wey go pass normal fit make air dry well well, and e fit cause fire for north well well, especially for February, March, and April wey e dey hot, windy, and dry. Emergency people dey advise s a y m a k e d e m p r e p a r e communities wey fit get flood and teach dem how to dey careful to avoid bad weather wey fit cause plenty trouble."

#### **Advisory:**

- Make we begin give early education and awareness to communities wey fit get flood wahala.
- Clear all the gutters wey dey blocked to make water fit flow well during heavy rain.
- 3. State government need to gather food and other things just in case of any emergency.
- 4. We need to map out the risk areas wey fit get flood, like farms, towns wey get people, places wey drainage no good, and places wey get illegal buildings.
- 5. Make government bring better

- policies wey go help people and reduce how wahala fit happen, like how them plan land use, build houses, protect environment, and support people.
- Government, communities, and individuals need to get better plans for early warning, drills, and places wey fit keep people safe.
- 7. Make all the people wey get hand for disaster matters, like NEMA, SEMA, NOA, Ministry of Environment, Ministry of Land and Housing, traditional and community leaders, fire services, security agencies, and others, join hand together.
- 8. Federal, state, and local government need to make sure say dem get money wey dem go use do things wey go stop problem before e start.
- Make we support research and innovation wey go help us know and manage disaster risks, like mapping hazards, assessing risks, and forecasting models.

#### 3.3 Health

Climate change fit affect health for many ways, from heat sickness to how sickness wey dey spread and air pollution matter. El Niño wey start for October 2023 fit bring plenty heat wey fit break temperature record, and e go bring more serious heat for different parts of the world and ocean. As we talk am for this paper, we talk about how health sector fit use climate info and services take know, watch, predict, and manage health wahala wey dey come from climate.

As climate dey warm, e fit bring more dangerous weather like heatwaves, strong rain, flood, and no rain wey fit affect people health. Water fit rise because of ice wey dey melt and cause flood when rain fall. All these climate wahala fit bring serious risk to people health and well-being.

2024 Seasonal Climate Prediction show say El Niño go bring hot

weather, small rain, and short rainy season for most places for Naija. Even though rain fit fall well, heavy rain fit still bring flood, wey fit carry sickness like cholera, diarrhea, malaria, and even bring wahala for mental health. Flood fit spoil clean water, bring mold wey fit cause breathing problem, and fit damage road wey dey go hospital. Make we use public health plan, clean environment, and prepare well for disaster so we fit reduce health risk for places wey rain go plenty.

From January to May 2024, the weather fit dey hotter than normal. This one fit bring serious sickness like heat stress, heatstroke, and dehydration. Long time for hot weather fit spoil breathing and heart, and fit make air no clean, wey go affect people wey get sickness already. Hot weather fit also make sickness wey mosquito carry spread well well. Heat fit spoil how health system dey work, and fit even carry more wahala reach people wey no fit defend themselves. Night

temperature for January fit dey cold. Na harmattan season be this wey fit carry dust and fit cause breathing wahala like asthma. People fit get sickness like meningitis because of dust for harmattan. Number of people wey get measles fit increase during hot season. To solve heat wahala, we need to do things wey fit help public health, and we need to join hands to reduce how climate dey spoil.

#### **Advisory for Malaria risk:**

- Make you no let mosquito bite you, use insect repellent and coveryourbody well.
- Take antimalarial drug if you dey go place wey get malaria.
- If you think say you get malaria, go hospital quick.
- Put pikin for vaccine if dem dey live for place wey malaria plenty.

## Advisory for Meningitis risk:

 Wash your hand well well.. Na im go stop the spread of yama yamadisease  Make you dey clean well well. No share drink, food, straw, spoon, lip balm, or toothbrush with another person.

#### **Advisory for Heat Stress:**

- Know how hot and wet the weather go be today, this week, and this month to fit plan outside activities.
- Keep box for house wey get ORS, thermometer, water, towel, fan, and checklist to fit check and treat heat stress symptoms.
- Know how you fit get help. Make your house cool.
- Close curtain during hot time and open window for night to cool house.
- Use fan and cooler if you get.
- Avoid sun during hot time. Wear sunscreen, hat or umbrella for protection.
- Drink water well well and wear light clothes.
- Carry water bottle and small towel so you go fit drink water and cool ya body.



Figure 35: Mama dem/care givers dey wait for their babies to collect immunization during Measles campaign/routine immunization for children under 0 – 5 years inside Town Hall clinic Gwagwalada FCT-Abuja for Tuesday, 12th December 2023.



# Evaluation of 2023 Seasonal Climate Prediction

## 4.0 Evaluation of 2023 Seasonal Climate Prediction

For dis section, we go yarn about how di 2023 Temperature and Rainfall forecasts take work. We go check how well di predictions work for different places for Naija. You fit see di results for di performance of di predictions for di whole country for Figures 40 to 46. Any place wey dey marked with green mean say di predictions do well for dat area, but if e dey marked with red, e mean say di predictions no too perform well for there.

## 4.1 Rainfall Evaluation (Onset and Annual Rainfall Amount)

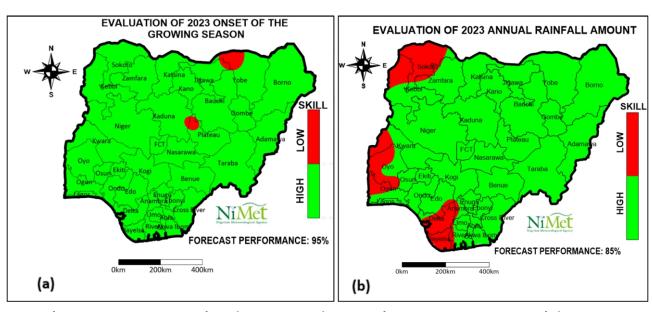


Figure 36a and b:: Evaluation of 2023 Onset of the Growing Season and Annual Rainfall Amount.

Di forecast for di start of di planting season for di whole kontri shine well wit 95% accuracy. But for some parts of northern Yobe and Plateau, e no too do well. Some places for northern Plateau record late start of di planting season wey dey differ like 3-4 days from di normal, while for northern Yobe, e start early and differ like 7-21

days from di normal. Apart from dis two areas, di forecast try small. Figure (40b) show how di 2023 annual rainfall for Naija dey be. Places wey green represent high performance, but places wey red like parts of Sokoto, Oyo, Delta, and Anambra, di model miss am. Generally, di forecast perform for like 85%

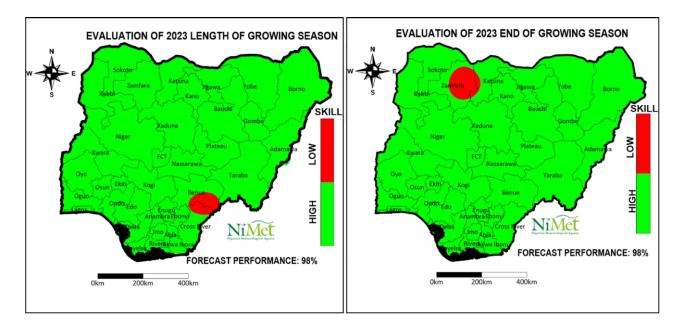
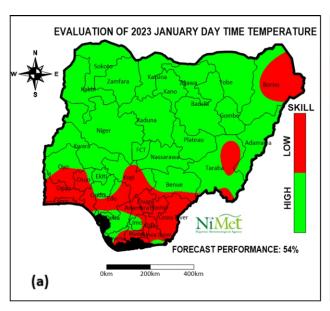
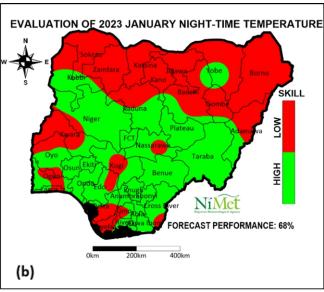


Figure 41a show how di 2023 end of di planting season be. Di forecast knack well with 98% accuracy. Places wey red show areas where di model no too try, but places wey green show where di model shine well well.

As for di 2023 length of di planting season as shown for Figure 41b, e show say di forecast knack well with 98% precision as shown for green colour. Places wey red show where di model fall hand.

### 4.2 Temperature Evaluation (Daytime and Night-time Temperatures)





temperatures be say e too hot pass wetin dem predict, e dey deviate by 1°C to 2.3°C.

But di February night temperature forecast perform beta with 67%. Di results show say di prediction agree with wetin dem observe for parts of Borno, Lagos, Ondo, parts of Ogun, Anambra, Ebonyi, Abia, Cross River and Rivers State. Dem areas wey di prediction match with wetin dem observe dey shaded green for di map. But where dem observe dey different from wetin dem predict dey shaded red. Dem areas include Jigawa, Bauchi, Gombe, Yobe, Kano, Katsina, Ekiti, Kogi, Benue, Enugu, parts of Osun, Delta, Bayelsa, Ogun, Oyo, Kwara, Niger and Kebbi.

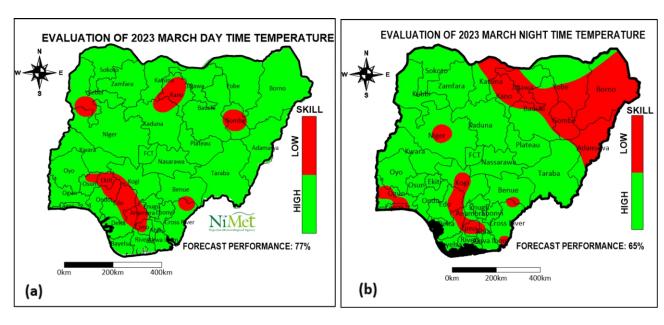
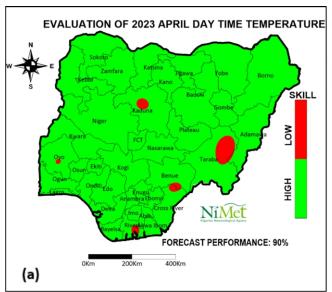


Figure 38a and b: Evaluation of March Day and Night Temperatures

For Fig. 44a, March 2023 daytime temperature forecast bin get 77% accuracy. Di forecast try wella for most parts of di country except for Kano, Yobe, Gombe States, and some areas for Benue, Cross River, Anambra, Edo, Ekiti, and Kebbi States where di temperature wey dem observe e different from wetin dem predict.

For di nighttime temperature evaluation for March (Fig. 44b), di north-eastern axis, Jigawa, Kano, and parts of Katsina, Niger, Ogun, Kogi, Edo, Anambra, Benue, most of Lagos and Imo no too do well. Di prediction bin dey 65% accurate for direst of di country.



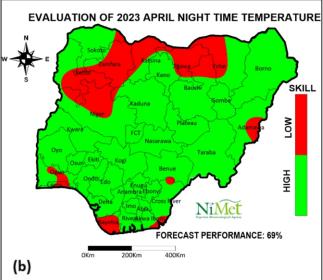
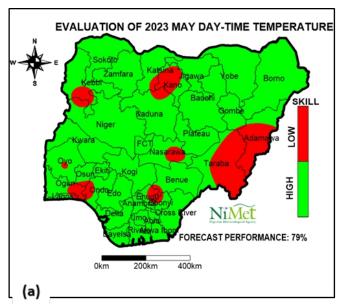
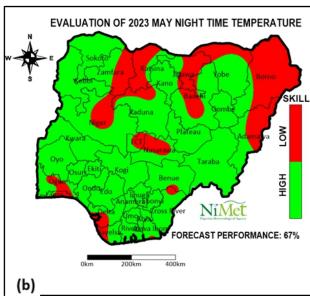


Figure 39a and b: Evaluation of March Day and Night Temperatures

Di daytime maximum temperature forecast for di month of April for 2023, show say di forecast model record 90% performance, wey mean say di model perform as dem predict for most places. But di level of accuracy for states like Kaduna, Taraba, Oyo, Rivers and Taraba dey low as di show for Fig. 45a.

Di April 2023 night-time temperature put di forecast performance for 69% with high skill wey dem record for most parts of di central and southern states. But di model performance bin low, especially for parts of Kebbi, Zamfara, Niger, Katsina, Jigawa, Yobe, Adamawa, Benue, Taraba, Cross River, Bayelsa, Lagos and Ogun states.





For Fig. 46a, e show di evaluation of May 2023 daytime temperature forecast, wey get forecast performance of 79% compared to di observed temperature, wey show say di accuracy level high well well.

But di night-time temperature prediction for May get accuracy of 67%. Di forecast model get high accuracy for di southern states (West, South, and East), but e miss for most of di northern and parts of central States.

Table 1 na summary of di 2023 daytime and night-time Temperature forecast performance.

S/N	Month	Performance for Day- time (%)	Performance for Night - time (%)
1	January	54	68
2	February	27	67
3	March	77	65
4	April	90	69
5	May	79	67



## 5.0 Daytime and Nighttime Temperature Predictions

Dis chapta dey shine light on di forecasted day and night temperatures from January reach May 2024 for some locations wey we select inside di 36 states of di kontri and di FCT.

Table 2 - Predicted 2024 Day time Temperatures

State	Location	January	February	March	April	May
Abia	Arochukwu	29.6	31.0	30.7	30.5	29.6
	Ukwa West	30.5	31.5	31.0	30.6	29.8
	Umuahia	33.6	35.2	34.3	33.6	32.3
	Umunneochi	29.9	31.5	31.1	30.8	29.8
Adamawa	Ganye	29.7	33.0	34.3	33.2	30.1
	Madagali	32.3	35.8	38.3	39.5	38.1
	Numan	33.8	37.0	38.1	36.8	34.0
	Yola	33.9	37.6	39.8	40.1	37.5
<b>Akwa-ibom</b>	Eket	31.0	32.4	31.8	31.6	30.7
	Oni	29.6	31.0	30.7	30.5	29.6
	Oron	29.0	29.4	29.1	28.8	28.2
	Oruk	30.5	31.5	31.0	30.6	29.8
	Uyo	33.2	34.8	33.9	33.1	32.1
Anambra	Anambara West	30.4	31.9	31.5	31.0	29.9
	Awka	34.3	35.8	35.3	34.6	32.9
	Idemi South	29.7	31.2	30.8	30.6	29.6
	Ogbaru	29.7	31.2	30.8	30.6	29.6

State	Location	Janu	ıary Febru	uary Mar	ch April	May
Bauchi	Bauchi	30.3	33.8	36.9	38.5	36.7
	Bogoro	31.1	33.8	35.0	34.7	32.4
	Darazo	31.7	35.4	37.8	39.1	37.8
	Zaki	31.2	35.1	38.0	40.5	40.2
Bayelsa	Brass	29.7	30.7	30.2	29.4	28.7
	Ekeremor	29.6	30.5	30.2	29.8	29.0
	Southern Ijaw	29.7	30.7	30.2	29.4	28.7
	Yenegoa	33.2	34.4	34.1	33.7	32.7
Benue	Katsina Ala	30.9	33.5	33.7	32.9	31.2
	Makurdi	34.8	37.5	37.5	36.2	33.7
	Oturkpo	31.7	34.1	34.4	33.6	31.6
	Vandeikya	30.4	32.5	32.3	31.8	30.4
Borno	Abadam	30.7	34.6	38.0	41.5	42.2
	Dikwa	33.7	37.1	40.0	42.1	41.6
	Maiduguri	30.9	34.8	38.2	41.2	40.9
	Nganzai	32.0	35.7	38.8	41.5	41.3
Cross-river	Abi	29.9	31.5	31.2	30.9	29.8
	Calabar	32.6	34.1	32.7	32.2	31.3
	Ikom	33.3	35.6	35.1	34.0	32.9
	Obudu	30.4	31.9	31.6	31.0	29.8
	Ogoja	35.0	37.0	36.6	35.4	33.3
Delta	Asaba	34.5	36.2	35.7	35.1	33.4
	Ndoka East	31.0	32.5	32.0	31.7	30.7
	Patani	30.0	31.1	30.7	30.1	29.4
	Warri	29.3	30.4	30.1	29.6	28.7
•	Warri North	33.2	34.4	34.1	33.7	32.7
Ebonyi	Abakaliki	30.4	32.2	31.9	31.3	30.1
	Afikposi South	29.9	31.5	31.1	30.8	29.8
<b>=</b> 4 .	Ishielu	30.4	32.2	31.9	31.3	30.1
Edo	Akoko Edo	32.2	34.1	33.9	33.1	31.0
	Benin	33.6	35.2	34.5	34.2	33.0
	Esan East	30.4	31.8	31.2	30.6	29.6
Eleit:	Ovia Southwest		31.1	30.5	29.9	28.8
Ekiti	Ado Ekiti	33.2	34.9	34.2	33.4	31.7
	Ide Orun	31.4	33.0	32.5	31.5	29.6
	ljero	32.1	34.0	33.5	32.2	30.2
	Ikole	33.0	35.0	34.8	34.0	31.5

State	Location	January	February	March	April	May
Enugu	Aninri	29.9	31.5	31.1	30.8	29.8
	Enugu	33.7	35.8	35.3	34.5	32.6
	Igboeze North	30.4	32.3	31.9	31.3	29.9
	Uzo Uwani	30.4	31.9	31.5	31.0	29.9
FCT	Abaji	33.0	34.5	34.7	33.8	31.5
	Abuja	34.8	37.0	37.0	36.3	33.6
	Bwari	32.7	34.6	35.1	33.7	31.0
	Kuje	32.9	34.8	35.1	34.1	31.5
Gombe	Balanga	34.7	37.8	39.1	37.8	34.8
	Dukku	31.7	35.4	37.8	39.1	37.8
	Gombe	30.5	34.4	37.1	38.6	36.5
	Shomgom	32.9	36.4	37.6	36.3	33.3
lmo	Ideato North	29.7	31.2	30.8	30.6	29.6
	Ngorokpala	29.9	31.3	31.0	30.7	29.8
	Obowo	29.6	31.0	30.7	30.5	29.6
	Owerri	33.7	35.2	34.5	33.9	32.4
Jigawa	Dutse	31.0	32.4	31.8	31.6	30.7
	Gwaram	29.7	33.8	36.6	39.0	38.8
	Gwiwa	31.5	35.1	37.5	39.0	38.0
	Suletankarkar	30.5	34.5	37.5	40.2	40.0
Kaduna	Birnin Gwari	30.0	33.8	35.5	35.6	33.0
	Kachia	32.7	35.4	36.2	35.0	31.9
	Kaduna	30.6	34.4	35.6	36.2	33.8
	Lere	31.2	34.1	35.6	35.8	33.9
	Zaria	29.2	33.1	35.5	37.0	34.8
Kano	Dambatta	30.1	34.2	37.1	39.8	39.8
	Gwarzo	29.6	33.7	36.3	38.2	37.6
	Kano	28.6	33.4	36.4	39.4	38.8
	Sumaila	30.0	33.9	36.4	38.1	37.2
Katsina	Danmusa	29.5	33.5	35.9	37.6	36.5
	Katsina	29.1	33.0	36.2	39.3	38.9
	Sabuwa	29.8	33.7	35.7	36.5	34.4
Melala!	Zango	29.7	33.9	36.9	39.9	40.1
Kebbi	Arewa	33.1	36.9	39.2	40.7	39.1
	Dokonwasagu	32.4	36.0	37.7	37.8	35.1
	Suru	33.5	37.0	38.9	39.3	37.0
	Yelwa	34.9	37.9	39.4	39.2	36.4

State	Location	January	February	March	April	May
Kogi	Ibaji	31.4	32.9	32.5	31.8	30.4
	Lokoja	34.8	37.3	37.6	36.5	34.1
	Yagba West	33.0	35.0	34.8	34.0	31.5
Kwara	Baruten	34.1	36.2	35.7	34.2	32.0
	Ekiti	32.1	34.0	33.5	32.2	30.2
	Ilorin	33.8	35.9	35.9	34.8	32.7
	Pategi	34.0	36.2	36.3	35.9	33.4
Lagos	Badagry	29.8	30.7	30.3	29.8	29.1
	Ikeja	33.0	34.1	33.9	33.5	32.2
	Ikorodu	29.4	30.4	30.1	29.6	28.9
	Lagos Island	31.0	31.5	31.7	31.4	30.6
Nasaraw	<b>a</b> Akwanga	34.1	36.2	36.6	34.9	31.6
	Awe	31.6	34.5	34.9	33.7	31.8
	Doma	32.4	34.8	35.4	34.5	32.2
	Lafia	35.1	37.8	37.9	36.5	33.7
Niger	Bida	34.9	37.8	38.3	37.8	35.0
	Borgu	32.1	35.4	37.0	37.1	35.1
	Lapai	33.0	34.5	34.7	33.8	31.5
	Magama	32.5	35.8	37.2	36.7	34.2
	Mashigi	34.0	36.5	37.0	36.5	34.1
	Minna	34.7	37.5	38.1	37.6	34.5
	Rijaw	26.5	26.5	27.2	28.4	29.3
Ogun	Abeokuta	35.1	36.9	35.9	35.0	33.3
	Ijebu Ode	33.5	35.1	34.4	33.7	32.3
	Imeko Afon	31.4	33.0	32.5	31.3	30.2
	Ipokia	30.8	31.6	31.0	30.1	29.3
	Ogun Waterside	29.2	30.4	30.1	29.5	28.7
Ondo	Akoko Northwest		33.0	32.5	31.5	29.6
	Akure	33.3	34.9	34.1	33.4	31.7
	Ilaje Eseodo	29.3	30.4	30.1	29.6	28.7
	Ondo	33.5	35.0	34.5	33.0	31.5
	Ose	30.9	32.1	31.3	30.4	29.3
Osun	Atakumosa East	30.7	32.3	31.8	30.6	29.0
	Ifedayo	32.1	34.0	33.5	32.2	30.2
	Ife North	30.3	31.9	31.3	30.2	29.1
	Oshogbo	34.0	35.7	35.1	33.8	32.1

State	Location .	January	February	March	April	May
Oyo	Ibadan	33.7	35.7	35.2	34.1	32.4
	Iseyin	34.2	35.6	35.0	33.6	31.8
	Iwajowa	32.0	33.8	33.5	32.0	30.6
	Oluyole	30.5	31.7	31.1	30.3	29.4
	Shaki	33.8	35.8	35.4	33.6	31.7
Plateau	Bokkos	33.8	35.9	36.2	34.4	31.1
	Jos	27.7	30.2	31.5	31.3	28.8
	Langtang South	33.6	36.6	37.1	35.0	32.4
	Wase	34.9	37.5	38.1	36.1	33.0
Rivers	Akukutor	29.8	30.7	30.1	29.4	28.6
	Ogba Egbe	29.9	31.3	31.0	30.7	29.8
	Opobo Nkoro	29.6	30.2	29.7	29.1	28.4
	Port Harcourt	33.3	34.5	33.5	33.1	32.1
Sokoto	Gudu North	31.8	35.9	38.5	41.0	40.4

Table 3: Predicted 2024 Nighttime Temperatures

State	Location	January	February	March	April	May
Abia	Arochukwu	19.3	22.2	23.4	24.0	23.7
	Ukwa West	20.1	22.9	23.9	24.2	23.9
	Umuahia	21.9	24.1	24.4	24.2	23.7
	Umunneochi	18.6	21.8	23.3	24.0	23.7
Adamawa	Ganye	14.4	17.6	20.3	21.8	21.6
	Madagali	13.6	17.3	21.4	24.2	25.3
	Numan	15.9	19.8	23.5	25.4	25.2
	Yola	17.6	20.9	25.0	27.3	26.4
Akwa						
Ibom	Eket	22.6	24.0	24.3	24.1	23.5
	Oni	19.3	22.2	23.4	24.0	23.7
	Oron	25.2	26.8	27.2	27.3	26.9
	Oruk	20.1	22.9	23.9	24.2	23.9
	Uyo	21.8	23.9	24.2	24.2	23.7
	Anambara					
Anambra	West	18.5	22.0	23.4	24.1	23.9
	Awka	21.2	24.5	25.0	24.7	24.0
	Idemi South	19.0	22.2	23.5	24.1	23.9
	Ogbaru	19.0	22.2	23.5	24.1	23.9
Bauchi	Bauchi	13.9	16.8	21.4	24.0	24.6
	Bogoro	14.7	18.0	20.6	21.7	21.7
	Darazo	13.5	17.2	21.5	24.3	25.2
	Zaki	13.1	16.6	20.8	23.8	25.5
Bayelsa	Brass	22.2	24.6	25.1	25.3	24.9
	Ekeremor	21.9	24.7	25.3	25.5	25.1
	Southern Ijaw	22.2	24.6	25.1	25.3	24.9
	Yenegoa	20.9	23.7	24.4	24.6	24.3
Benue	Katsina Ala	17.2	20.8	23.0	24.2	23.9
	Makurdi	18.5	22.7	25.4	25.7	24.5
	Oturkpo	17.3	21.2	23.3	24.4	24.0
	Vandeikya	17.4	20.8	22.9	24.0	23.8
Borno	Abadam	13.1	16.7	21.2	25.1	27.5
	Dikwa	14.8	18.4	22.5	25.7	27.4
	Maiduguri	12.5	16.0	20.6	24.7	26.8
	Nganzai	13.9	17.6	21.9	25.3	27.1
Cross- river	Abi	18.8	21.9	23.5	24.3	24.0

	Calabar	22.6	24.3	24.1	24.0	23.7
	Ikom	20.2	22.7	23.8	24.0	23.2
	Obudu	18.4	21.3	23.0	23.9	23.7
	Ogoja	20.4	22.5	23.8	24.0	23.4
Delta	Asaba	21.5	24.3	24.8	24.7	24.0
	Ndoka East	19.9	23.0	24.0	24.4	24.1
	Patani	20.9	23.7	24.4	24.6	24.3
	Warri	23.2	24.9	25.2	25.0	24.2
	Warri North	21.9	24.8	25.6	25.8	25.4
Ebonyi	Abakaliki	18.0	21.3	23.1	24.1	23.9
	Afikpo South	18.6	21.8	23.3	24.0	23.7
	Ishielu	18.0	21.3	23.1	24.1	23.9
Edo	Akoko Edo	18.3	21.6	23.2	23.8	23.3
	Benin	22.7	24.9	24.8	24.7	24.3
	Esan East	18.6	21.9	23.2	23.7	23.5
	OviaSouthwest	19.8	23.1	24.1	24.5	24.1
Ekiti	Ado Ekiti	19.0	22.3	23.1	23.2	22.6
	lde Orun	18.1	21.2	22.5	23.1	22.7
	ljero	17.6	21.1	22.6	23.0	22.6
	Ikole	18.0	21.4	23.0	23.7	23.1
Enugu	Aninri	18.6	21.8	23.3	24.0	23.7
	Enugu	21.0	23.9	25.1	25.0	23.9
	Igboeze North	17.5	20.9	22.6	23.7	23.4
	Uzo Uwani	18.5	22.0	23.4	24.1	23.9
FCT	Abaji	16.8	20.2	22.6	24.2	23.9
	Abuja	17.9	21.4	23.4	24.5	23.7
	Bwari	16.5	19.7	22.1	23.3	23.0
	Kuje	17.5	20.9	23.2	24.4	23.9
Gombe	Balanga	16.1	20.0	23.5	24.8	24.6
	Dukku	13.5	17.2	21.5	24.3	25.2
	Gombe	15.2	18.4	22.3	24.7	24.4
	Shomgom	15.2	19.2	22.9	24.6	24.4
Imo	Ideato North	19.0	22.2	23.5	24.1	23.9
	Ngorokpala	19.7	22.6	23.7	24.2	23.9
	Obowo	19.3	22.2	23.4	24.0	23.7
	Owerri	21.7	23.8	24.3	24.2	23.6
Jigawa	Dutse	13.0	16.5	20.8	24.3	25.8
	Gwaram	13.3	16.9	21.1	24.1	25.1

	Gwiwa	12.3	15.6	19.7	22.7	24.5
	Suletankarkar	12.7	16.1	20.5	23.8	25.8
Kaduna	Birnin Gwari	13.2	16.6	20.0	22.0	22.6
	Kachia	14.9	18.3	20.8	21.7	21.8
	Kaduna	13.2	16.6	20.9	24.4	25.7
	Lere	13.1	16.4	19.6	21.3	21.7
	Zaria	14.1	17.3	21.2	23.3	23.0
Kano	Dambatta	12.3	15.6	20.0	23.2	25.3
	Gwarzo	11.9	15.2	19.4	22.3	24.0
	Kano	13.2	16.6	20.9	24.4	25.7
	Sumaila	11.9	15.3	19.5	22.5	24.1
Katsina	Danmusa	12.4	15.7	19.7	22.2	23.5
	Katsina	13.3	16.4	20.6	24.6	26.0
	Sabuwa	13.1	16.5	20.1	22.2	22.9
	Zango	12.6	16.1	20.4	23.9	26.0
Kebbi	Arewa	15.7	18.9	22.7	26.3	27.1
	Dokonwasagu	14.6	18.1	21.8	24.0	24.2
	Suru	15.5	19.0	22.9	26.0	26.2
	Yelwa	16.0	19.6	24.1	26.7	25.9
Kogi	Ibaji	18.4	21.8	23.3	24.1	23.8
	Lokoja	19.4	24.0	26.1	26.3	25.1
	Yagba West	18.0	21.4	23.0	23.7	23.1
Kwara	Baruten	17.7	20.9	22.8	23.4	23.1
	Ekiti	17.6	21.1	22.6	23.0	22.6
	Ilorin	19.5	22.6	23.8	24.0	23.0
	Pategi 	18.1	21.9	24.0	24.9	24.3
Lagos	Badagry	23.0	25.3	26.0	26.1	25.7
	Ikeja	23.1	25.1	25.5	25.4	24.6
	Ikorodu	22.9	25.4	26.1	26.3	25.9
Noncommunication	Lagos Island	24.4	26.3	26.5	26.2	25.4
Nasarawa	0	17.4	20.7	22.9	23.7	23.3
	Awe	17.1	20.9	23.4	24.7	24.4
	Doma	17.5	21.3	23.7	24.8	24.4
Nicor	Lafia	18.6	22.7	25.6	26.0	24.8
Niger	Bida	20.9	24.2	26.2	26.3	24.9
	Borgu	16.2	20.0	23.9	26.0	25.8
	Lapai	16.8	20.2	22.6	24.2	23.9

	<b>N</b> 4	15.0	10.0	00.5	0.4.7	040
	Magama	15.0	18.6	22.5	24.7	24.8
	Mashigi	16.7	20.6	23.7	25.1	24.8
	Minna	20.7	23.3	25.6	25.7	24.3
	Rijaw	25.9	25.9	26.6	27.8	28.7
Ogun	Abeokuta	21.6	24.6	25.3	25.2	24.4
	ljebu Ode	21.9	24.3	24.9	24.8	23.9
	Imeko Afon	19.0	22.3	23.5	23.7	23.4
	Ipokia	23.1	25.4	25.9	26.0	25.6
	Ogun Waterside	21.8	24.6	05.4	25.7	25.3
		21.0	24.0	25.4	25.7	20.3
Ondo	Akoko	10 1	21.2	22.5	22.1	22.7
Ondo	Northwest	18.1	21.2	22.5	23.1	22.7
	Akure	18.9	22.4	23.2	23.3	22.7
	Ilaje Eseodo	21.9	24.8	25.6	25.8	25.4
	Ondo	21.6	23.5	24.0	23.8	23.3
	Ose	18.8	21.8	23.0	23.6	23.2
00000	Atakumosa	10.1	01.0	00 E	00.0	00.6
Osun	East	18.1	21.2	22.5	23.0	22.6
	Ifedayo	17.6	21.1	22.6	23.0	22.6
	Ife North	19.5	22.6	23.6	24.0	23.6
0)/0	Oshogbo	17.9	22.0	23.1	23.3	22.6
Oyo	Ibadan	22.2	24.3	24.6	24.3	23.6
	Iseyin	20.7	22.5	23.6	23.5	22.8
	lwajowa	18.4	21.7	23.2	23.5	23.2
	Oluyole	20.0	23.1	24.0	24.3	23.9
Distract	Shaki	19.6	22.2	23.2	23.2	22.4
Plateau	Bokkos	17.6	20.5	22.3	22.8	22.4
	Jos	11.5	14.3	17.0	18.6	18.6
	Langtang South		21.2	24.2	25.1	24.7
Divers	Wase	18.3	21.7	24.2	24.9	24.5
Rivers	Akukutor	22.2	24.6	25.2	25.4	25.0
	Ogba Egbe	19.7	22.6	23.7	24.2	23.9
	Opobo Nkoro	23.6	25.9	26.4	26.5	26.1
Colordo	Port Harcourt	21.1	23.3	23.9	24.0	23.6
Sokoto	Gudu North	14.8	18.0	21.7	25.6	27.6
	Illela	14.3	17.6	21.6	25.2	27.2
	Isa	14.0	17.3	21.4	24.6	26.2
	Kebbe	15.2	18.6	22.4	25.3	25.8

	Sokoto	17.0	19.9	23.8	27.0	27.8
Taraba	Bali	17.7	21.2	23.6	24.3	23.4
	Jalingo	19.1	22.4	25.0	26.0	24.3
	Sardauna	15.3	17.8	19.4	19.8	19.4
Yobe	Gulani	14.9	18.4	22.2	24.4	24.7
	Nguru	13.7	16.3	20.8	24.5	26.1
	Potiskum	12.8	16.3	21.0	24.5	26.0
	Tarmuwa	13.3	16.9	21.2	24.9	26.7
	Yunusari	12.9	16.4	20.8	24.6	26.7
Zamfara	Gummi	15.2	18.6	22.4	25.3	25.8
	Gusau	15.5	18.4	22.5	25.1	25.2
	Maru	14.1	17.6	21.1	23.2	23.7
	Shinkafi	14.0	17.3	21.4	24.6	26.2



## Detailed 774 Local Government Area Seasonal Rainfall Prediction

## 6.1 Detailed 774 Local Government Area Seasonal Rainfall Prediction

Nigeria na big kontri wey get plenti land, with different climate and agroecological zones. Most states get like 2 or 3 agroecological zones and dis one get serious effect for di way rainfall dey distribute, like wen e go start, wen e go stop, how long e go last and how much rain go fall for each state. Below na detailed

breakdown of di forecast for di 774 local government areas for inside di kontri.

Table 4: Summary of Wetin Dem Predict for Onset Date, Cessation Date, Length of Season and How Much Rain Go Fall for States and Local Government Areas for Nigeria

State	City	Onset date	Season end	Season Length Days	Annual Rainfall mm
Abia	Aba North	15 -Mar	16 -Dec	277	2556
	Aba South	14 -Mar	16 -Dec	277	2569
	Arochukw	20-Mar	12 -Dec	268	2354
	Bende	22-Mar	12 -Dec	266	2309
	Ikwuano	18 -Mar	14 -Dec	271	2427
	Isiala Ngwa North	18 -Mar	14 -Dec	272	2439
	Isiala Ngwa South	17 -Mar	14 -Dec	273	2475
	Isuikwua	24-Mar	10 -Dec	263	2247
	Oboma Ngwa	15 -Mar	16 -Dec	276	2544
	Ohafia Abia	22-Mar	11 -Dec	265	2301
	Osisioma Ngwa	16 -Mar	15 -Dec	275	2519
	Ugwunagbo	14 -Mar	17 -Dec	279	2596
	Ukwa East	13 -Mar	17 -Dec	280	2632
	Ukwa West	13 -Mar	17 -Dec	280	2619
	Umuahia North	21 -Mar	12 -Dec	267	2343
	Umuahia South	20-Mar	13 -Dec	269	2388
	Umu-Nneochi	26-Mar	9-Dec	259	2173
Adamawa	Demsa	23-May	11 <b>-</b> Nov	186	1097
	Fufore	8-May	13 <b>-</b> Nov	190	1143
	Ganye	28-Apr	19 <b>-</b> Nov	206	1320
	Girie	21 <b>-</b> May	5-Nov	169	965
	Gombi	11 -May	11 -Nov	185	1095
	Guyuk	16 -May	8-Nov	177	1020
	Hong	22-May	4-Nov	167	951
	Jada	1 -May	17 <b>-</b> Nov	201	1258
	Jimeta	9-May	12 <b>-</b> Nov	189	1127
	Lamurde	13 -May	10 <b>-</b> Nov	182	1068
	Madagali	30-May	31 -Oct	155	881
	Maiha	16 -May	8-Nov	176	1016
	Mayo-Bel	3-May	16 -Nov	198	1220
	Michika	26-May	2-Nov	160	909
	Mubi North	23-May	4-Nov	166	943
	Mubi South	21 <b>-</b> May	5-Nov	169	961
	Numan	11 -May	11 -Nov	184	1084

	Shelleng	18 -May	7-Nov	174	1001
	Song	16 -May	8-Nov	177	1021
	Toungo	5-May	15 - Nov	195	1188
	Yola North	23 -May	21 - Oct	188	1124
	Yola South	22 -May	22 - Oct	190	1138
Akwa Ibom	Abak	13 <b>-</b> Mar	17 - Dec	279	2605
	Eastern Obolo	7-Mar	21 - Dec	289	2853
	Eket	9-Mar	20 - Dec	287	2792
	Esit -Eket	9-Mar	20 - Dec	287	2783
	Essien Udim	15 -Mar	16 - Dec	277	2558
	Etim Ekpo	13 <b>-</b> Mar	17 - Dec	280	2620
	Etinan	11 -Mar	18 - Dec	283	2695
	Ibeno	8-Mar	20 - Dec	288	2831
	Ibesikpo Asutan	12 -Mar	17 - Dec	281	2648
	Ibiono Ibom	16 -Mar	15 - Dec	275	2507
	Ika	14 -Mar	17 - Dec	279	2597
	Ikono	16 <b>-</b> Mar	15 - Dec	275	2507
	Ikot Abasi	8-Mar	20 - Dec	288	2830
	Ikot Ekpene	16 <b>-</b> Mar	15 - Dec	275	2511
	Ini	18 -Mar	14 - Dec	271	2431

	Itu	15 -Mar	16 - Dec	276	2544
	Mbo	8-Mar	20- Dec	287	2795
	Mkpat Enin	8-Mar	20- Dec	288	2809
	Nsit Atai	11 -Mar	18 - Dec	283	2689
	Nsit Ibom	12 -Mar	18 - Dec	281	2658
	Nsit Ubium	10 -Mar	19 - Dec	284	2726
	Obot Akara	17 -Mar	15 - Dec	274	2488
	Okobo	11 -Mar	18 - Dec	283	2702
	Onna	9-Mar	20- Dec	287	2792
	Oron	10 -Mar	19 - Dec	285	2738
	Oruk Anam	11 -Mar	18 - Dec	283	2691
	Udung Uko	10 -Mar	19 - Dec	284	2729
	Ukanafun	12 -Mar	17 - Dec	281	2649
	Uruan	13 -Mar	17 - Dec	279	2612
	Urue - Offong/Oruko	10 -Mar	19 - Dec	285	2750
	Uyo	13 -Mar	17 - Dec	279	2604
Anambra	Aguata	26-Mar	9-Dec	258	2158
	Anambra East	31 -Mar	6-Dec	251	2028
	Anambra West	2-Apr	5-Dec	247	1947
	Anaocha	28-Mar	8-Dec	256	2115
	Awka North	31 -Mar	6-Dec	251	2016
	Awka South	29-Mar	7-Dec	254	2074

	Ayamelum	3-Apr	4-Dec	246	1933
	Njikoka	30-Mar	7-Dec	253	2059
	Ekwusigo	26-Mar	9-Dec	258	2155
	Idemili North	28-Mar	8-Dec	255	2101
	Idemili South	27-Mar	8-Dec	256	2124
	Ihiala	25-Mar	10 - Dec	261	2214
	Dunukofia	29-Mar	7-Dec	254	2074
	Nnewi North	27-Mar	9-Dec	258	2154
	Nnewi South	26-Mar	9-Dec	259	2177
	Ogbaru	25-Mar	10 - Dec	260	2202
	Onitsha North	28-Mar	8-Dec	255	2102
	Onitsha South	28-Mar	8-Dec	256	2114
	Orumba North	28-Mar	8-Dec	256	2111
	Orumba South	27-Mar	9-Dec	258	2153
	Oyi	29-Mar	7-Dec	253	2062
Bauchi	Alkaleri	17 -May	7-Nov	164	904
	Bauchi	22-May	4-Nov	156	851
	Bogoro	14 -May	9-Nov	169	950
	Damban	8-Jun	25- Oct	128	674
	Darazo	2-Jun	28- Oct	138	705
	Dass	19 -May	6-Nov	162	890
	Gamawa	14 -Jun	21 - Oct	119	657
	Ganjuwa	29-May	31 - Oct	145	786
	Giade	7-Jun	26- Oct	131	681
	Itas/Gadau	12 -Jun	22- Oct	123	662
	Jama'are	10 -Jun	24- Oct	126	669
	Katagum	9-Jun	24- Oct	128	672
	Kirfi	24-May	3-Nov	153	780

	Misau	6-Jun	26- Oct	132	683
	Ningi	1 -Jun	29- Oct	140	713
	Shira	7-Jun	25- Oct	131	680
	TafawaBalewa	17 -May	7-Nov	164	903
	Toro	23-May	4-Nov	154	839
	Warji	2-Jun	28- Oct	138	704
	Zaki	17 -Jun	19 - Oct	114	603
Bayelsa	Brass	6-Mar	21 - Dec	291	2890
	Ekeremor	12 -Mar	18 - Dec	282	2668
	Kolokuma/Opokuma	14 -Mar	16 - Dec	278	2575
	Nembe	7-Mar	21 - Dec	290	2860
	Ogbia	10 -Mar	19 - Dec	285	2740
	Sagbama	15 <b>-</b> Mar	15 - Dec	276	2535
	Southern Ijaw	8-Mar	20- Dec	288	2818
	Yenegoa	15 -Mar	16 - Dec	277	2562
Benue	Ado	27-Apr	2-Dec	189	1824
	Agatu	10 -May	24- Nov	168	1487
	Apa	7-May	25- Nov	172	1549
	Buruku	4-May	27- Nov	178	1630
	Gboko	3-May	28- Nov	179	1646

	Guma	10 -May	24-	168	1482
	0	4.14	Nov	170	1000
	Gwer East	4-May	27 - Nov	178	1629
	Gwer West	7-May	25 - Nov	172	1546
	Katsina-Ala	4-May	28- Nov	178	1639
	Konshisha	29-Apr	30- Nov	185	1752
	Kwande	27 -Apr	2-Dec	189	1822
	Logo	8-May	25 - Nov	170	1521
	Makurdi	20-May	27 - Nov	161	1168
	Obi	29 <i>-</i> Apr	1 -Dec	186	1764
	Ogbadibo	29-Apr	1-Dec	186	1760
	Ohimini	2-May	29 - Nov	181	1684
	Oju	27 -Apr	2-Dec	188	1806
	Okpokwu	29-Apr	1-Dec	186	1760
	Oturkpo	2-May	28- Nov	180	1669
	Tarka	7-May	26- Nov	173	1559
	Ukum	7-May	26- Nov	172	1551
	Ushongo	29-Apr	30- Nov	185	1748
	Vandeikya	27 -Apr	2-Dec	189	1817
Borno	Abadam	4-Jul	9-Oct	85	495
	Askira/Uba	28-May	1 -Nov	145	848
	Bama	8-Jun	25 - Oct	127	477
	Bayo	25-May	3-Nov	150	873
	Biu	28-May	31 - Oct	144	842

Chibok	29-May	31-	142	733
Damboa	3-Jun	<b>Oct</b> 28-	136	703
Dikwa	13-Jun	Oct 22-	118	459
Gubio	23-Jun	Oct 16-	103	456
	Í	Oct		
Guzamala	25-Jun	14- Oct	99	461
Gwoza	3-Jun	28- Oct	135	702
Hawul	25-May	2-Nov	150	771
Jere	12-Jun	22- Oct	120	462
Kaga	9-Jun	24- Oct	126	473
Kala/Balge	16-Jun	20- Oct	114	455
Konduga	10-Jun	24- Oct	124	469
Kukawa	27-Jun	13- Oct	96	466
Kwaya Kusar	24-May	3-Nov	151	779
Mafa	14-Jun	21- Oct	116	457
Magumeri	16-Jun	20- Oct	113	454
Maiduguri	12-Jun	22- Oct	120	461
Marte	19-Jun	18- Oct	109	453
Mobbar	30-Jun	12- Oct	92	475
Monguno	21-Jun	17- Oct	106	454
Ngala	18-Jun	19- Oct	111	453

	Nganzai	20-Jun	17- Oct	107	453
	Shani	21-May	5-Nov	155	806
Cross River	Abi	25-Mar	9-Dec	260	2191
	Akamkpa	18-Mar	14- Dec	272	2439
	Akpabuyo	11-Mar	18- Dec	283	2705
	Bakassi	10-Mar	19- Dec	285	2737
	Bekwarra	5-Apr	3-Dec	243	1881
	Biase	21-Mar	12- Dec	267	2347
	Boki	30-Mar	6-Dec	252	2035
	Calabar Municipal	13-Mar	17- Dec	279	2611
	Calabar South	11-Mar	18- Dec	283	2702
	Etung	25-Mar	10- Dec	261	2219
	Ikom	27-Mar	8-Dec	256	2123
	Obanliku	2-Apr	5-Dec	247	1953
	Obubra	27-Mar	9-Dec	258	2151
	Obudu	3-Apr	4-Dec	245	1916
	Odukpani	16-Mar	15- Dec	275	2521
	Ogoja	2-Apr	5-Dec	247	1944
	Yakurr	24-Mar	10- Dec	261	2225
	Yala	3-Apr	4-Dec	246	1928
Delta	Aniocha North	31-Mar	6-Dec	251	2015
	Aniocha South	28-Mar	8-Dec	255	2094
	Bomadi	16-Mar	15- Dec	274	2499
	Burutu	18-Mar	14- Dec	272	2457
	Ethiope East	25-Mar	9-Dec	260	2187

	Ethiope West	23-Mar	11-	264	2284
	71 N .1 D .	00.14	Dec	050	0.055
	Ika North East	30-Mar	7-Dec	253	2057
	Ika South	29-Mar	7-Dec	254	2074
	Isoko North	20-Mar	13- Dec	268	2367
	Isoko South	19-Mar	13- Dec	270	2412
	Ndokwa East	22-Mar	12- Dec	266	2311
	Ndokwa West	24-Mar	10- Dec	262	2231
	Okpe	22-Mar	11- Dec	265	2295
	Oshimili North	31-Mar	6-Dec	251	2028
	Oshimili South	28-Mar	8-Dec	256	2113
	Patani	16-Mar	15- Dec	275	2506
	Sapele	25-Mar	10- Dec	261	2213
	Udu	20-Mar	13- Dec	269	2377
	Ughelli North	20-Mar	12- Dec	268	2360
	Ughelli South	18-Mar	14- Dec	271	2426
	Ukwuani	24-Mar	10- Dec	262	2228
	Uvwie	21-Mar	12- Dec	267	2339
	Warri North	24-Mar	10- Dec	262	2232
	Warri South	22-Mar	12- Dec	266	2317
	Warri South West	21-Mar	12- Dec	267	2343
Ebonyi	Abakaliki	30-Mar	7-Dec	252	2044

	Afikpo North	25-Mar	10-	260	2201
	A C:1 C +1	25.14	Dec	264	2200
	Afikpo South	25-Mar	10-	261	2209
	י	2.4	Dec	240	4050
	Ebonyi	2-Apr	5-Dec	248	1959
	Ezza North	30-Mar	7-Dec	253	2049
	Ezza South	28-Mar	8-Dec	255	2099
	Ikwo	28-Mar	8-Dec	256	2118
	Ishielu	1-Apr	5-Dec	249	1989
	Ivo	25-Mar	9-Dec	260	2191
	Izzi	2-Apr	5-Dec	247	1952
	Ohaozara	26-Mar	9-Dec	258	2161
	Ohaukwu	2-Apr	5-Dec	248	1966
	Onicha	28-Mar	8-Dec	256	2117
Edo	Akoko-Edo	14-Apr	28-	229	1633
			Nov		
	Egor	31-Mar	6-Dec	250	2007
	Esan Central	5-Apr	3-Dec	243	1866
	Esan North East	6-Apr	2-Dec	242	1847
	Esan South East	3-Apr	4-Dec	245	1916
	Esan West	4-Apr	3-Dec	244	1885
	Etsako Central	8-Apr	1-Dec	237	1775
	Etsako East	12-Apr	29-	232	1684
		*	Nov		
	Etsako West	9-Apr	1-Dec	237	1767
	Igueben	2-Apr	5-Dec	247	1950
	Ikpoba-Okha	29-Mar	7-Dec	254	2071
	Oredo	30-Mar	7-Dec	253	2051
	Orhionmwon	29-Mar	7-Dec	255	2090
	Ovia North East	1-Apr	5-Dec	248	1971
	Ovia South West	1-Apr	5-Dec	248	1972
	Owan East	10-Apr	30-	235	1738
	5 2000	1.p1	Nov	_55	2.00
	Owan West	8-Apr	1-Dec	239	1795
	Uhunmwonde	2-Apr	5-Dec	248	1954
Ekiti	Ado-Ekiti	17-Apr	26- Nov	224	1556

	Efon	18-Apr	25- Nov	222	1539
	Ekiti East	19-Apr	25- Nov	221	1513
	Ekiti South West	16-Apr	26- Nov	225	1579
	Ekiti West	18-Apr	25- Nov	222	1531
	Emure/Ise/Orun	15-Apr	27- Nov	227	1607
	Aiyekire (Gbonyin)	17-Apr	26- Nov	223	1553
	Ido/Osi	20-Apr	24- Nov	218	1476
	Ijero	20-Apr	24- Nov	219	1493
	Ikere	15-Apr	27- Nov	226	1593
	Ikole	20-Apr	23- Nov	218	1472
	Ilejemeji	21-Apr	23- Nov	217	1456
	Irepodun/Ifelodun	18-Apr	25- Nov	222	1528
	Ise/Orun	15-Apr	27- Nov	227	1607
	Moba	22-Apr	23- Nov	216	1445
	Oye	20-Apr	24- Nov	218	1477
Enugu	Aninri	27-Mar	8-Dec	257	2132
	Awgu	29-Mar	7-Dec	254	2083
	Enugu East	3-Apr	4-Dec	246	1922
	Enugu North	2-Apr	5-Dec	248	1965
	Enugu South	1-Apr	5-Dec	249	1983
	Ezeagu	1-Apr	5-Dec	249	1986
	Igbo-Etiti	5-Apr	3-Dec	243	1880

	Igbo-Eze North	9-Apr	30-	236	1751
			Nov		
	Igbo-Eze South	8-Apr	1-Dec	237	1776
	Isi-Uzo	5-Apr	3-Dec	242	1860
	Nkanu East	30-Mar	6-Dec	252	2034
	Nkanu West	31-Mar	6-Dec	251	2013
	Nsukka	7-Apr	2-Dec	240	1815
	Oji-River	29-Mar	7-Dec	254	2076
	Udenu	7-Apr	2-Dec	239	1811
	Udi	2-Apr	5-Dec	248	1966
	Uzo-Uwani	5-Apr	3-Dec	243	1868
FCT	Abaji	12-May	16- Nov	198	1220
	Abuja Municipal	14-May	15- Nov	194	1186
	Bwari	17-May	13- Nov	190	1141
	Gwagwalada	15-May	14- Nov	193	1169
	Kuje	10-May	17- Nov	201	1258
	Kwali	11-May	17- Nov	200	1242
Gombe	Akko	30-May	22- Oct	133	717
	Balanga	27-May	24- Oct	139	761
	Billiri	27-May	24- Oct	138	755
	Dukku	8-Jun	17- Oct	118	632
	Funakaye	8-Jun	17- Oct	118	633
	Gombe	2-Jun	21- Oct	129	693
	Kaltungo	27-May	24- Oct	138	755

	Kwami	5-Jun	19- Oct	124	663
	Nafada	12-Jun	14- Oct	112	606
	Shomgom	25-May	26- Oct	142	789
	Yamaltu/Deba	1-Jun	4-Nov	143	696
Imo	Aboh-Mbaise	19-Mar	13- Dec	270	2396
	Ahiazu-Mbaise	21-Mar	12- Dec	267	2348
	Ehime-Mbano	22-Mar	11- Dec	265	2289
	Ezinihitte	20-Mar	13- Dec	269	2380
	Ideato North	25-Mar	10- Dec	261	2212
	Ideato South	24-Mar	10- Dec	262	2238
	Ihitte/Uboma	22-Mar	11- Dec	265	2305
	Ikeduru	21-Mar	12- Dec	267	2347
	Isiala Mbano	22-Mar	11- Dec	265	2289
	Isu	22-Mar	11- Dec	264	2287
	Mbaitoli	21-Mar	12- Dec	266	2329
	Ngor-Okpala	18-Mar	14- Dec	272	2449
	Njaba	23-Mar	11- Dec	264	2273
	Nkwerre	23-Mar	11- Dec	263	2264
	Nwangele	23-Mar	11- Dec	264	2276

	Obowo	21-Mar	12- Dec	267	2350
	Oguta	22-Mar	11-	265	2305
			Dec		
	Ohaji/Egbema	19-Mar	13-	270	2407
	Okigwe	24-Mar	Dec 10-	262	2233
	1 8		Dec		
	Orlu	24-Mar	10-	262	2234
	Owari	25 Mars	Dec	261	2200
	Orsu	25-Mar	10- Dec	261	2208
	Oru East	23-Mar	11-	263	2264
			Dec		
	Oru West	23-Mar	11-	263	2254
	Owerri-	20-Mar	Dec 13-	269	2377
	Municipal	20-Mai	Dec	207	2377
	Owerri North	19-Mar	13-	269	2393
		10.75	Dec		
	Owerri West	19-Mar	13- Dec	270	2403
	Unuimo	24-Mar	10-	263	2247
			Dec		
Jigawa	Auyo	18-Jun	19-	104	603
	Dalassea	22 1	Oct	0.7	(05
	Babura	23-Jun	16- Oct	97	605
	Biriniwa	24-Jun	15-	95	608
			Oct		
	Birni Kudu	7-Jun	25-	122	828
	Buji	8-Jun	Oct 25-	121	827
	Daji	Juli	Oct	121	027
	Dutse	11-Jun	23-	116	814
		200	Oct	40:	
	Gagarawa	20-Jun	17-	101	603
			Oct		

Garki	19-Jun	18- 0ct	103	603
Gumel	22-Jun	16- Oct	99	605
Guri	22-Jun	16- Oct	98	605
Gwaram	4-Jun	27- Oct	127	745
Gwiwa	23-Jun	16- Oct	96	606
Hadejia	20-Jun	18- 0ct	102	603
Jahun	15-Jun	21- Oct	110	606
Kafin Hausa	16-Jun	20- Oct	108	604
Kaugama	20-Jun	17- Oct	101	603
Kazaure	22-Jun	16- 0ct	98	605
Kiri Kasamma	21-Jun	17- Oct	100	604
Kiyawa	12-Jun	22- Oct	115	712
Maigatari	23-Jun	15- Oct	96	607
Malam Madori	21-Jun	17- Oct	100	604
Miga	17-Jun	20- Oct	107	604
Ringim	16-Jun	20- Oct	108	605
Roni	22-Jun	16- 0ct	98	605
Sule-Tankarkar	23-Jun	16- 0ct	97	606
Taura	17-Jun	19- Oct	106	604

	Yankwashi	23-Jun	15-	96	607
** 1	Di i c	00.17	Oct	400	0.70
Kaduna	Birnin-Gwari	30-May	16- Oct	132	879
	Chikun	24-May	20- Oct	164	931
	Giwa	2-Jun	14- 0ct	149	856
	Igabi	27-May	18- Oct	159	901
	Ikara	4-Jun	13- 0ct	146	844
	Jaba	11-May	28- Oct	184	1086
	Jema'a	9-May	29- Oct	188	1116
	Kachia	16-May	25- Oct	177	1022
	Kaduna North	26-May	19- Oct	161	912
	Kaduna South	25-May	19- Oct	162	919
	Kagarko	11-May	28- Oct	186	1097
	Kajuru	22-May	21- Oct	167	947
	Kaura	13-May	26- Oct	181	1055
	Kauru	21-May	22- Oct	169	964
	Kubau	30-May	16- 0ct	154	875
	Kudan	4-Jun	13- Oct	146	846
	Lere	23-May	21- Oct	166	945
	Markafi	5-Jun	13- Oct	145	841

	Sabon-Gari	3-Jun	14- Oct	148	852
	Sanga	8-May	30-	190	1143
	Janga	U-Iviay	Oct	170	1173
	Soba	1-Jun	15- Oct	152	867
	Zango-Kataf	16-May	25- Oct	177	1024
	Zaria	2-Jun	15- Oct	150	860
Kano	Ajingi	13-Jun	22- Oct	118	709
	Albasu	9-Jun	24- Oct	125	720
	Bagwai	15-Jun	21- Oct	115	506
	Bebeji	8-Jun	25- Oct	127	726
	Bichi	17-Jun	19- Oct	112	503
	Bunkure	9-Jun	24- Oct	125	720
	Dala	14-Jun	21- Oct	117	607
	Dambatta	19-Jun	18- Oct	109	503
	Dawakin Kudu	11-Jun	23- Oct	122	714
	Dawakin Tofa	16-Jun	20- Oct	115	505
	Doguwa	31-May	30- Oct	140	840
	Fagge	14-Jun	21- Oct	117	708
	Gabasawa	15-Jun	20- Oct	115	505
	Garko	8-Jun	25- Oct	126	624

Garum Mallam	9-Jun	24- Oct	125	620
Cava	11 Jun	<b>Oct</b> 23-	122	614
Gaya	11-Jun	0ct	122	014
Gezawa	14-Jun	21-	116	507
dezawa	I I Juli	Oct	110	307
Gwale	14-Jun	21-	118	608
aware	II juii	Oct	110	
Gwarzo	13-Jun	22-	119	610
	,	Oct		
Kabo	12-Jun	22-	120	611
		Oct		
Kano Municipal	13-Jun	22-	118	609
_		Oct		
Karaye	11-Jun	23-	122	615
		Oct		
Kibiya	7-Jun	25-	128	628
		Oct		
Kiru	9-Jun	24-	126	622
_		Oct		
Kumbotso	13-Jun	22-	119	610
1.	40.7	Oct	100	<b>-</b> 00
Kunchi	19-Jun	18-	108	503
T7	44.1	Oct	400	
Kura	11-Jun	23-	122	615
Madala:	10 1	Oct	121	(12
Madobi	12-Jun	23-	121	613
Makoda	10 Jun	0ct 18-	109	503
MIANUUA	19-Jun	Oct	109	303
Minjibir	17-Jun	20-	113	504
Willijibii	17-juii	Oct	113	304
Nasarawa	14-Jun	21-	117	507
1145414114		Oct	**/	307
Rano	7-Jun	25-	128	628
	, , , , , ,	Oct		
Rimin Gado	13-Jun	22-	119	610
		Oct		

	Rogo	8-Jun	25- Oct	127	626
	Shanono	15-Jun	21- Oct	116	506
	Sumaila	6-Jun	26- Oct	130	635
	Takai	7-Jun	26- Oct	129	631
	Tarauni	14-Jun	21- Oct	118	608
	Tofa	14-Jun	21- Oct	117	607
	Tsanyawa	17-Jun	19- Oct	112	503
	Tudun Wada	4-Jun	27- Oct	133	642
	Ungogo	14-Jun	21- Oct	116	507
	Warawa	13-Jun	22- Oct	119	610
	Wudil	11-Jun	23- Oct	123	616
Katsina	Bakori	9-Jun	24- Oct	123	722
	Batagarawa	26-Jun	14- Oct	96	512
	Batsari	24-Jun	15- Oct	98	509
	Baure	25-Jun	15- Oct	98	509
	Bindawa	23-Jun	16- Oct	100	507
	Charanchi	22-Jun	16- Oct	102	505
	Dandume	6-Jun	26- Oct	128	733
	Danja	6-Jun	26- Oct	128	734

Dan Musa	17-Jun	19- Oct	111	554
Daura	27-Jun	13- 0ct	94	466
Dutsi	26-Jun	14- Oct	96	463
Dutsin-Ma	20-Jun	18- Oct	106	553
Faskari	9-Jun	24- Oct	123	670
Funtua	7-Jun	26- Oct	127	820
Ingawa	22-Jun	16- Oct	102	455
Jibia	27-Jun	13- Oct	94	466
Kafur	9-Jun	24- Oct	123	721
Kaita	29-Jun	12- Oct	91	474
Kankara	13-Jun	21- Oct	116	558
Kankia	20-Jun	17- Oct	105	453
Katsina	27-Jun	13- Oct	94	466
Kurfi	23-Jun	15- Oct	100	457
Kusada	20-Jun	17- Oct	105	553
Mai'adua	29-Jun	12- Oct	91	473
Malumfashi	12-Jun	22- Oct	119	562
Mani	26-Jun	14- Oct	96	462
Mashi	29-Jun	12- Oct	91	473

	Matazu	17-Jun	19- 0ct	110	453
	Musawa	15-Jun	21- Oct	114	456
	Rimi	25-Jun	14- Oct	97	460
	Sabuwa	5-Jun	27- Oct	129	588
	Safana	21-Jun	17- Oct	104	454
	Sandamu	26-Jun	14- Oct	96	463
	Zango	27-Jun	13- Oct	95	465
Kebbi	Aleiro	25-Jun	19- Oct	96	603
	Arewa-Dandi	30-Jun	16- Oct	88	605
	Argungu	30-Jun	16- Oct	88	605
	Augie	4-Jul	14- Oct	82	613
	Bagudo	6-Jun	26- Oct	123	636
	Birnin Kebbi	28-Jun	18- Oct	92	603
	Bunza	23-Jun	20- Oct	99	605
	Dandi	12-Jun	23- Oct	113	613
	Danko Wasagu	7-Jun	26- Oct	121	630
	Fakai	7-Jun	25- Oct	120	628
	Gwandu	28-Jun	18- Oct	92	603
	Jega	23-Jun	20- Oct	99	605

	Kalgo	17-Jun	19- Oct	104	603
	Koko/Besse	6-Jun	26- Oct	121	633
	Maiyama	13-Jun	22- Oct	110	609
	Ngaski	27-May	1-Nov	139	706
	Sakaba	3-Jun	28- Oct	127	650
	Shanga	4-Jun	27- Oct	125	645
	Suru	10-Jun	24- Oct	115	617
	Yauri	31-May	30- Oct	131	669
	Zuru	8-Jun	25- Oct	119	627
Kogi	Adavi	25-Apr	25- Nov	189	1547
	Ajaokuta	23-Apr	27- Nov	193	1607
	Ankpa	22-Apr	27- Nov	194	1618
	Bassa	27-Apr	25- Nov	187	1516
	Dekina	24-Apr	26- Nov	191	1582
	Ibaji	14-Apr	2-Dec	207	1834
	Idah	18-Apr	30- Nov	201	1739
	Igalamela-Odolu	18-Apr	30- Nov	202	1741
	Ijumu	28-Apr	24- Nov	185	1491
	Kabba/Bunu	30-Apr	22- Nov	181	1429
	Kogi	3-May	21- Nov	177	1380

	Lokoja	3-May	21- Nov	177	1382
	Mopa-Muro	2-May	21- Nov	179	1402
	Ofu	21-Apr	28- Nov	196	1647
	Ogori/Magongo	23-Apr	27- Nov	193	1600
	Okehi	26-Apr	25- Nov	188	1529
	Okene	23-Apr	27- Nov	193	1605
	Olamabolo	19-Apr	29- Nov	199	1700
	Omala	27-Apr	24- Nov	186	1509
	Yagba East	2-May	21- Nov	179	1399
	Yagba West	3-May	20- Nov	176	1368
Kwara	Asa	6-May	19- Nov	172	1317
	Baruten	16-May	13- Nov	156	1136
	Edu	12-May	15- Nov	162	1202
	Ekiti	1-May	22- Nov	180	1416
	Ifelodun	8-May	18- Nov	169	1276
	Ilorin East	8-May	18- Nov	169	1285
	Ilorin South	6-May	19- Nov	172	1314
	Ilorin West	6-May	19- Nov	171	1307
	Irepodun	2-May	21- Nov	178	1388

	Isin	3-May	21- Nov	176	1368
	Kaiama	18-May	11-	152	1102
	Moro	12-May	Nov 15- Nov	163	1211
	Offa	2-May	21- Nov	178	1394
	Oke-Ero	2-May	21- Nov	178	1397
	Oyun	2-May	21- Nov	178	1392
	Pategi	9-May	17- Nov	167	1260
Lagos	Agege	4-Apr	3-Dec	244	1891
	Ajeromi- Ifelodun	2-Apr	5-Dec	248	1959
	Alimosho	4-Apr	4-Dec	245	1905
	Amuwo-Odofin	1-Apr	5-Dec	249	1975
	Арара	1-Apr	5-Dec	249	1977
	Badagry	1-Apr	5-Dec	249	1978
	Epe	2-Apr	5-Dec	247	1952
	Eti-Osa	1-Apr	5-Dec	248	1970
	Ibeju/Lekki	1-Apr	5-Dec	249	1973
	Ifako-Ijaye	5-Apr	3-Dec	243	1876
	Ikeja	4-Apr	4-Dec	245	1900
	Ikorodu	4-Apr	4-Dec	245	1903
	Kosofe	4-Apr	4-Dec	245	1906
	Lagos Island	3-Apr	4-Dec	247	1936
	Lagos Mainland	2-Apr	4-Dec	247	1942
	Mushin	3-Apr	4-Dec	246	1925
	Ojo	2-Apr	5-Dec	248	1967
	Oshodi-Isolo	3-Apr	4-Dec	246	1920
	Shomolu	3-Apr	4-Dec	246	1924
	Surulere	2-Apr	5-Dec	247	1944
Nasarawa	Akwanga	14-May	14- Nov	184	1171

	Awe	3-May	20-	201	1368
	1 _		Nov		
	Doma	2-May	21- Nov	203	1392
	Karu	15-May	13- Nov	182	1152
	Keana	3-May	21- Nov	202	1382
	Keffi	11-May	16- Nov	189	1218
	Kokona	13-May	15- Nov	186	1193
	Lafia	9-May	17- Nov	192	1251
	Nasarawa	5-May	20- Nov	199	1338
	Nassarawa Egon	10-May	17- Nov	191	1241
	Obi	5-May	20- Nov	199	1340
	Toto	4-May	20- Nov	200	1354
	Wamba	14-May	14- Nov	185	1174
Niger	Agaie	12-May	10- Nov	182	1200
	Agwara	6-Jun	26- Oct	143	889
	Bida	14-May	9-Nov	178	1161
	Borgu	1-Jun	29- Oct	151	934
	Bosso	21-May	5-Nov	168	1060
	Chanchaga	21-May	4-Nov	167	1055
	Edati	13-May	9-Nov	180	1177
	Gbako	17-May	7-Nov	174	1122
	Gurara	17-May	7-Nov	174	1115
	Katcha	14-May	9-Nov	178	1161

	Kontagora	1-Jun	29- Oct	150	929
	Lapai	12-May	10- Nov	183	1208
	Lavun	15-May	8-Nov	177	1146
	Magama	31-May	29- Oct	151	937
	Mariga	4-Jun	27- Oct	144	899
	Mashegu	24-May	3-Nov	164	1026
	Mokwa	15-May	8-Nov	177	1147
	Muya	24-May	3-Nov	163	1025
	Paikoro	20-May	6-Nov	170	1081
	Rafi	29-May	31- Oct	155	965
	Rijau	9-Jun	24- Oct	137	863
	Shiroro	26-May	1-Nov	159	992
	Suleja	16-May	8-Nov	176	1139
	Tafa	17-May	7-Nov	175	1124
	Wushishi	22-May	4-Nov	166	1049
Ogun	Abeokuta North	12-Apr	29- Nov	231	1675
	Abeokuta South	11-Apr	29- Nov	233	1699
	Ado-Odo/Ota	4-Apr	4-Dec	245	1901
	Egbado North	11-Apr	29- Nov	234	1713
	Egbado South	6-Apr	2-Dec	241	1829
	Ewekoro	8-Apr	1-Dec	237	1774
	Ifo	6-Apr	2-Dec	241	1845
	Ijebu East	7-Apr	1-Dec	239	1802
	Ijebu North	6-Apr	2-Dec	241	1843
	Ijebu North East	9-Apr	30- Nov	236	1755
	Ijebu Ode	6-Apr	2-Dec	241	1837
	Ikenne	8-Apr	1-Dec	238	1786

	Imeko-Afon	18-Apr	25-	223	1541
	In alsi a	4 4	Nov	245	1001
	Ipokia	4-Apr	4-Dec	245	1901
	Obafemi-Owode	8-Apr	1-Dec	237	1775
	Odeda	13-Apr	28- Nov	230	1658
	Odogbolu	7-Apr	2-Dec	240	1824
	Ogun waterside	1-Apr	5-Dec	249	1988
	Remo North	9-Apr	30- Nov	236	1759
	Shagamu	6-Apr	2-Dec	240	1825
Ondo	Akoko North- East	16-Apr	26- Nov	225	1571
	Akoko South- East	15-Apr	27- Nov	227	1605
	Akoko South- West	14-Apr	27- Nov	228	1621
	Akoko North- West	18-Apr	25- Nov	222	1534
	Akure North	12-Apr	29- Nov	231	1678
	Akure South	12-Apr	29- Nov	232	1687
	Ese-Odo	30-Mar	6-Dec	252	2035
	Idanre	9-Apr	1-Dec	237	1768
	Ifedore	14-Apr	28- Nov	229	1639
	Ilaje	28-Mar	8-Dec	256	2113
	Ile-Oluji- Okeigbo	13-Apr	28- Nov	230	1662
	Irele	3-Apr	4-Dec	246	1931
	Odigbo	5-Apr	3-Dec	242	1862
	Okitipupa	3-Apr	4-Dec	246	1921
	Ondo East	10-Apr	30- Nov	235	1736
	Ondo West	9-Apr	30- Nov	236	1756

	Ose	10-Apr	30- Nov	235	1735
	Owo	11-Apr	29- Nov	234	1714
Osun	Atakumosa East	13-Apr	28- Nov	229	1642
	Atakumosa West	16-Apr	26- Nov	225	1577
	Aiyedade	13-Apr	28- Nov	229	1644
	Aiyedire	16-Apr	26- Nov	225	1571
	Boluwaduro	21-Apr	23- Nov	217	1458
	Boripe	20-Apr	24- Nov	218	1481
	Ede North	18-Apr	25- Nov	221	1522
	Ede South	17-Apr	25- Nov	223	1542
	Egbedore	19-Apr	24- Nov	220	1503
	Ejigbo	19-Apr	24- Nov	220	1500
	Ife East	13-Apr	28- Nov	229	1641
	Ife North	12-Apr	29- Nov	231	1675
	Ife South	12-Apr	29- Nov	231	1676
	IfeCentral	15-Apr	27- Nov	227	1601
	Ifedayo	22-Apr	23- Nov	216	1450
	Ifelodun	21-Apr	23- Nov	217	1462
	Ila	21-Apr	23- Nov	216	1451

	Ilesha East	17-Apr	26- Nov	224	1560
	Ilesha West	17-Apr	25- Nov	223	1545
	Irepodun	20-Apr	24- Nov	218	1478
	Irewole	14-Apr	27- Nov	228	1625
	Isokan	13-Apr	28- Nov	231	1663
	Iwo	17-Apr	25- Nov	223	1545
	Obokun	19-Apr	24- Nov	220	1505
	Odo-Otin	22-Apr	23- Nov	216	1442
	Ola-Oluwa	19-Apr	25- Nov	221	1515
	Olorunda	20-Apr	24- Nov	219	1483
	Oriade	16-Apr	26- Nov	225	1580
	Orolu	21-Apr	23- Nov	218	1470
	Osogbo	19-Apr	24- Nov	220	1509
Oyo	Afijio	19-Apr	24- Nov	219	1508
	Akinyele	16-Apr	26- Nov	224	1578
	Atiba	25-Apr	20- Nov	209	1365
	Atigbo	27-Apr	20- Nov	207	1339
	Egbeda	14-Apr	27- Nov	227	1627
	Ibadan North	14-Apr	27- Nov	227	1617

Ibadan North East	14-Apr	27- Nov	228	1630
Ibadan North West	14-Apr	27- Nov	227	1620
Ibadan South East	13-Apr	28- Nov	228	1642
Ibadan South West	14-Apr	28- Nov	228	1635
Ibarapa Central	15-Apr	27- Nov	226	1607
Ibarapa East	17-Apr	26- Nov	222	1551
Ibarapa North	17-Apr	25- Nov	222	1543
Ido	16-Apr	26- Nov	225	1589
Irepo	5-May	14- Nov	193	1178
Iseyin	20-Apr	24- Nov	218	1484
Itesiwaju	25-Apr	21- Nov	210	1383
Iwajowa	22-Apr	23- Nov	215	1443
Kajola	23-Apr	22- Nov	213	1424
Lagelu	15-Apr	27- Nov	225	1595
Ogbomosho North	24-Apr	21- Nov	211	1392
Ogbomosho South	23-Apr	22- Nov	213	1412
Ogo Oluwa	21-Apr	23- Nov	215	1450
Olorunsogo	3-May	16- Nov	198	1228
Oluyole	12-Apr	29- Nov	231	1690

	Ona-Ara	12-Apr	28- Nov	230	1666
	Orelope	3-May	16- Nov	197	1221
	Ori Ire	26-Apr	20- Nov	207	1345
	Oyo East	21-Apr	23- Nov	217	1472
	Oyo West	21-Apr	23- Nov	216	1464
	Saki East	1-May	17- Nov	199	1248
	Saki West	30-Apr	18- Nov	202	1275
	Surulere	23-Apr	22- Nov	213	1414
Plateau	Barikin Ladi	18-May	2-Nov	168	861
	Bassa	24-May	29- Oct	159	788
	Bokkos	13-May	5-Nov	176	936
	Jos East	21-May	31- Oct	163	818
	Jos North	22-May	30- Oct	161	806
	Jos South	20-May	31- Oct	164	829
	Kanam	17-May	2-Nov	170	878
	Kanke	16-May	3-Nov	172	897
	Langtang North	11-May	6-Nov	179	969
	Langtang South	5-May	9-Nov	188	1070
	Mangu	16-May	3-Nov	172	896
	Mikang	11-May	6-Nov	179	973
	Pankshin	14-May	4-Nov	175	926
	Qua'an Pan	8-May	8-Nov	184	1018
	Riyom	18-May	2-Nov	168	866
	Shendam	8-May	8-Nov	184	1021
	Wase	11-May	6-Nov	179	965

River	Abua/Odual	11-Mar	18- Dec	281	2678
	Ahoada East	14-Mar	16- Dec	277	2585
	Ahoada West	14-Mar	17- Dec	278	2597
	Akuku Toru	7-Mar	20- Dec	288	2841
	Andoni	7-Mar	20- Dec	288	2840
	Asari-Toru	10-Mar	19- Dec	284	2735
	Bonny	7-Mar	20- Dec	288	2845
	Degema	8-Mar	20- Dec	287	2811
	Eleme	10-Mar	19- Dec	284	2740
	Emohua	11-Mar	18- Dec	282	2689
	Etche	14-Mar	16- Dec	277	2582
	Gokana	9-Mar	19- Dec	286	2778
	Ikwerre	14-Mar	16- Dec	277	2584
	Khana	9-Mar	20- Dec	286	2789
	Obia/Akpor	11-Mar	18- Dec	282	2704
	Ogba/Egbema/Ndoni	19-Mar	14- Dec	270	2422
	Ogu/Bolo	9-Mar	19- Dec	286	2778
	Okrika	9-Mar	19- Dec	286	2780
	Omumma	15-Mar	16- Dec	276	2564

	Opobo/Nkoro	7-Mar	21- Dec	288	2846
	Oyigbo	11-Mar	18- Dec	281	2681
	Port-Harcourt	10-Mar	19- Dec	284	2729
	Tai	10-Mar	19- Dec	284	2736
Sokoto	Binji	30-Jun	29- Sep	79	525
	Bodinga	25-Jun	1-0ct	86	510
	Dange-Shuni	25-Jun	1-0ct	86	511
	Gada	6-Jul	25- Sep	69	558
	Goronyo	2-Jul	27- Sep	75	535
	Gudu	3-Jul	26- Sep	73	543
	Gwadabawa	3-Jul	27- Sep	73	541
	Illela	6-Jul	25- Sep	69	557
	Isa	30-Jun	28- Sep	78	527
	Kebbe	13-Jun	9-0ct	106	509
	Kware	29-Jun	29- Sep	80	522
	Rabah	28-Jun	30- Sep	82	518
	Sabon Birni	4-Jul	26- Sep	72	546
	Shagari	21-Jun	4-0ct	93	504
	Silame	27-Jun	30- Sep	83	516
	Sokoto North	28-Jun	30- Sep	81	519
	Sokoto South	28-Jun	30- Sep	82	518

	Tambuwal	19-Jun	5-0ct	96	503
	Tangaza	4-Jul	26-	72	545
			Sep		
	Tureta	21-Jun	4-0ct	93	504
	Wamako	28-Jun	30- Sep	82	518
	Wurno	1-Jul	28- Sep	77	530
	Yabo	24-Jun	2-Oct	88	508
Taraba	Ardo-Kola	3-May	8-Nov	173	966
	Bali	23-Apr	14- Nov	190	1165
	Donga	18-Apr	17- Nov	199	1291
	Gashaka	15-Apr	19- Nov	203	1360
	Gassol	27-Apr	11- Nov	183	1083
	Ibi	26-Apr	12- Nov	185	1098
	Jalingo	4-May	7-Nov	172	950
	Karim-Lamido	8-May	5-Nov	166	891
	Kurmi	11-Apr	21- Nov	210	1459
	Lau	7-May	5-Nov	167	897
	Sardauna	7-Apr	24- Nov	216	1564
	Takum	15-Apr	19- Nov	203	1363
	Ussa	8-Apr	23- Nov	214	1540
	Wukari	22-Apr	14- Nov	191	1186
	Yorro	4-May	7-Nov	172	955
	Zing	4-May	7-Nov	172	952
Yobe	Bade	24-Jun	1-0ct	86	507
	Bursari	23-Jun	2-0ct	87	506
	Damaturu	12-Jun	9-0ct	105	512

	Fika	6-Jun	12- Oct	113	532
	Fune	12-Jun	8-0ct	105	512
	Geidam		2-0ct	87	506
	Gujba	23-Jun 6-Jun	12- Oct	115	537
	Gulani	31-May	15- Oct	123	568
	Jakusko	20-Jun	4-0ct	92	503
	Karasuwa	26-Jun	30- Sep	82	513
	Machina	28-Jun	29- Sep	78	519
	Nangere	12-Jun	9-0ct	105	513
	Nguru	26-Jun	30- Sep	81	514
	Potiskum	10-Jun	10- Oct	107	517
	Tarmua	18-Jun	5-0ct	96	503
	Yunusari	29-Jun	28- Sep	77	523
	Yusufari	30-Jun	27- Sep	75	527
Zamfara	Anka	14-Jun	7-0ct	101	607
	Bakura	21-Jun	3-0ct	90	604
	Birnin Magaji	21-Jun	3-0ct	91	603
	Bukkuyum	14-Jun	7-0ct	102	608
	Bungudu	16-Jun	6-0ct	98	604
	Gummi	13-Jun	8-0ct	102	708
	Gusau	13-Jun	8-0ct	103	710
	Kaura Namoda	21-Jun	3-0ct	90	604
	Maradun	24-Jun	1-0ct	85	608
	Maru	10-Jun	9-0ct	107	717
	Shinkafi	27-Jun	29-Sep	80	616
	Talata Mafara	19-Jun	4-0ct	93	603
	Tsafe	13-Jun	8-0ct	103	610
	Zurmi	26-Jun	30 <b>-</b> Sep	82	612

## **GLOSSARY**

Abeg make we check dis glossary wey dey explain some important words and concepts wey relate to weather, agriculture, health, and environment for better understanding:

- Anti-microbial resistance: Dis one na when bacteria or other small small organisms no gree gree to drugs wey before fit treat dem sickness.
- Antibiotic: Dis one na medicine wey fit kill bacteria or stop dem from growing.
- Aquaculture: Dis be like farming but na for water, where dem dey raise fish or grow water plants for food.
- 4. Agro-meteorological information: Dis na weather info wey farmers fit use to plan how dem go do dia farming and handle climate changes.

- Annual rainfall amount: Dis na di total amount of rain wey fall for one year.
- 6. **Cessation-date of rainy season:** E be like di day when rain go stop fall, based on how much water dey for ground.
- 7. **Cessation date:** Na di time when soil no get plenty water wey plants need again.
- 8. **Cooler than normal:** Dis mean say e dey cooler pass wetin e dey normally be.
- 9. **Climate change:** Na when di weather pattern dey change for long time, and e fit be because of natural or human activities.
- 10. Climate variability: Dis na di change wey dey happen for weather pattern over time.
- 11. Comfort Index: E be like measurement wey dem dey take to know if di weather dey comfortable for person.

- 12. Decision Support System for Agro Technology Transfer (DSSAT): Na like computer program wey fit help farmers make better farming decisions.
- 13. **Dehydration:** Dis na when person no get enough water for body.
- 14. **Departure:** Dis na difference from di usual average.
- 15. **Diarrhoea:** Na when person dey poo plenty, like three times more dan normal.
- 16. Dry season farming: Na farming wey fit happen during dry season with irrigation.
- 17. **Ecological zones:** Dis na different areas wey get different weather patterns based on how much rain dem dey receive.
- 18. Escherichia coli: Dis na bacteria wey dey inside person intestine.

- 19. El- Nino: Na warming wey dey happen for Pacific Ocean, and e fit change di weather for different places.
- 20. ENSO (El- Nino Southern Oscillation): Na di changing weather pattern for di Pacific Ocean.
- 21. **ENSO Neutral:** E be like normal temperature for di ocean.
- 22. **Extreme weather:** Dis na when weather dey behave wey no normal.
- 23. **Flash floods:** Dis na when heavy rain fit cause flood within few hours.
- 24. Global warming: Dis na di overall increase for world temperature.
- 25. **Green House Effect:** Na di warming wey dey happen for earth because of gases wey dey trap heat for atmosphere.

- 26. Harmattan: Dis na dry and dusty wind wey dey blow for West Africa during winter.
- 27. **Heat stress:** Na when body dey suffer because of too much heat.
- 28. **Heat stroke:** Dis na serious condition wey fit happen because of too much heat.
- 29. **Heat waves:** Dis na when weather dey very hot for long time.
- 30. **High-intensity rainfall:** Na heavy rain wey dey fall for long time.
- 31. **Hydroelectricity:** Dis na electricity wey dey come from water power.
- 32. **IPCC:** Na international group wey dey study climate change.
- 33. **Indian Ocean Dipole (IOD):** Na temperature difference for Indian Ocean.

- 34. Intra-seasonal rainfall patterns: Na how rain dey fall differently during rainy season.
- 35. **Klebsiella pneumonia**: Dis na bacteria wey fit cause pneumonia.
- 36. **La- Nina:** Na when di water for Pacific Ocean dey very cool.
- 37. **Length of rainy season:** Na how many days rain dey fall from start to finish.
- 38. Madden Julian Oscillation (MJO): Dis na weather pattern wey fit move from one place to another.
- 39. **Meningitis:** Na inflammation for di brain and spinal cord.
- 40. **Mid-Latitude Wave:** Dis na weather pattern wey dey move from East to West.
- 41. **Modulators:** Na things wey fit change how weather dey behave.

- 42. **SDG:** Dis na global goals to make world better.
- 43. **North-easterly winds:** Dis na winds wey blow from Sahara Desert.
- 44. **Normal:** E be like di usual average weather.
- 45. **Near Normal:** E be like di weather dey close to di usual.
- 46. **Neutral signal:** E be like normal signal for weather.
- 47. **Onset-date of rainy season:** Na when rain start fall for one place.
- 48. **Pathogens:** Dis na small small organisms wey fit cause disease.
- 49. Pre-season rainfall: Na rain wey fall before main rain season start.
- 50. Perishable goods: Dis na food wey go spoil quickly if dem no preserve am well.

- 51. **Ruminant animal:** Na animals wey get four stomachs.
- 52. Sea Surface Temperature (SST) anomalies: Na how hot or cold di ocean dey.
- 53. Seasonal Rainfall Prediction (SRP): Na forecast of weather for one season.
- 54. **Short-duration rainfall:** Na rain wey no last long.
- 55. **Staphylococcus aureus:** Dis na bacteria wey fit cause infection for skin and inside body.
- 56. **Tele-connection:** Na how weather for one place fit affect another place.
- 57. **Vision 20:20:20:** Na Nigeria plan to become one of di top 20 big economies by year 2020.
- 58. **Warmer than normal:** E mean say di weather dey hotter pass how e suppose be.

## NIMET CONTACTS NATIONWIDE.

s/N	NAMES	STATES	PHONE NUMBER	E-mail Address
1.	Mr. Owhorukowho Goodnews	Abia	08067346449	Golden.go19@gmail.com
2.	Mrs. Jumai Ameh	Abuja	08038390497	enesameh21@gmail.com
3.	Mr. G. K. Danye	Adamawa	08035512477	g.danyekwache@nimet.gov.ng
4.	Mr. William Timothy Okon	Akwa Ibom	08039095002	t.william@nimet.gov.ng
5.	Mr. Nnamdi Nweze	Anambra	08039133967	nwaezennamdic@gmail.com
6.	Mr. Usman Adamu	Bauchi	07087359605	Usmanadamu495@gmail.com
7.	Mr. Udoh Emmanuel Idiang	Bayelsa	08151972160 08020949743	e.udoh@nimet.gov.ng
8.	Mr. Kazachiang, T. V.	Benue	08124088883	t.kazachiang@nimet.gov.ng
9.	Mr. M. Bukar	Borno	08023307855 08036478388	bukarmaijir@gmail.com
10	Mr. J. Iyanam	Cross Rivers	08059740971	j.iyanam@nimet.gov.ng
11	Mr. OnyenobiO Kennedy	Delta	08035050810	o.kennedy@nimet.gov.ng
12	Mr. Ikwen E. P.	Ebonyi	08037363256	e.ikwen@nimet.gov.ng
13	Mr. Nwainokpor E	Edo	09052445108	e.nwainokpor@nimet.gov.ng
14	Mr. S. M. Okesola	Enugu	08038836624	m.okesola@nimet.gov.ng
15	Mr. Lawal Oludare	Ekiti	08068380251	o.lawal@nimet.gov.ng
16	Mr. Peter I. Uba	Gombe	08089713529	p.uba@nimet.gov.ng
17	Mr. Inya Akunna A.	lmo	07033839524	a.inya@nimet.gov.ng
18	Mr. Mohammed, K. A.	Jigawa	08067990231 08023921369	m.abdullahi@nimet.gov.ng

		i		
19	Mr Banky Ambore	Kano	08026963553	bankiambore@yahoo.com
			09034442692	
20	Mr. Stephen Bala	Kaduna	08029883300	s.bala@nimet.gov.ng
			08031540444	
21	Mr. Badun Akinsanya	Katsina	08033648831 09060635918	badun0031@gmail.com
22	Mr. Mohammed Garba	Kebbi	08061263508	mgribana775@gmail.com
23	Mr. Ahamad Tijjani A.	Kogi	08066676435	a.ahamadtijani@nimet.gov.ng
24	Mr. Bakare Olatayo	Kwara	08035759025	b.abdulrazaq@ nimet.gov.ng
25	Mr. Raheem Kayode	Osun	09083568698 08090814762	a.raheem@nimet.gov.ng
26	Mr. Pwajok, Gyang Tok.	Niger	08067731592	g.pwajok@nimet.gov.ng
27	Mr. Yakubu Samu	Nasarawa	08028981497	y.samu@nimet.gov.ng
28	Mr. Oyewole Abayomi	Ogun	09092387540 08065568386	aoyewole@nimet.gov.ng
29	Mr. Adejuwon Emmanuel O.	Ondo	08125883607 08034782527	a.olatunde@nimet.gov.ng
30	Mr. Muili T. Olasunkanmi	Lagos	07011340083	t.muili@ nimet.gov.ng
31	Mrs. Omoogun Christiana	Оуо	08056140542 08102811306	comoogun@nimet.gov.ng
32	Miss R. O. Umar	Plateau	08057334354	r.umar@nimet.gov.ng
33	Mr. Elujah Abraham	Rivers	07032307828	elujah1@hotmail.com
34	Mr. A. Dauda	Sokoto	08054427418	adauda@nimet.gov.ng
35.	Mr. Amos N. Gimba	Taraba	08037333143	a.gimba@nimet.gov.ng
36	Mr. Sadiq Haruna Anate	Yobe	08065079205	s.haruna@nimet.gov.ng
37	Mr. Umar Farouk	Zamfara	08032897645	f.umar@nimet.gov.ng

## **AIRPORT MANAGERS**

1.	Mr. Mr. Salami Tairu	PHC	08174004130	t.salami@nimet.gov.ng
2.	Mr Ribah Yusuf	Kano	08094122027	y.ribah@nimet.gov.ng
3.	Mr. Kenneth Ayadiani	Ikeja	08065801996	k.ayadiani@nimet.gov.ng
4.	Mr. Adenubi Rotimi	Abuja	08063227132	rotimiadenubi@gmail.com
5.	Mr. Bashir Aliyu	Kaduna	08034369919	abashkkd@gmail.com
6.	Mr. Adewara Hassan Olabanji	Yola	08034610077	adewara2003@gmail.com
7.	Mr. Haruna Malami	NCAT, Zaria	07037778709	harunamalamil@gmail.com
8.	Mr. Wakawa Daniel Thalma	Kebbi	08052733448	wakawadaniel@gmail.com
9.	Mr. Ejiofor Bobo Ikem	Owerri	08038343119	ikembobo@yahoo.com
10.	Mr. Umar Hamza	Katsina	08035965929	humar1933@gmail.com

## **ZONAL MANAGERS**

1	Mrs. Idumu, M.	Abuja	ZM, NC	08030513466	mosskayy@yahoo.co.uk
	A,				
2	Mr. Ajeyomi	Ibadan	ZM, SW	08023954230	a.ajeyomi@nimet.gov.ng
	Sunday		·		, , , ,
3	Mr. Tunji	Enugu	ZM, SE	08035797828	tunjiakinyemi@yahoo.co.uk
	Akinyemi				, , ,
4	Mr. Halilu Idris	Borno	ZM, NE	08027460762	haliluirorawa@gmail.com