



2014

SEASONAL RAINFALL PREDICTION (SRP)



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This edition of the SRP starts with the evaluation or review of the accuracy of the 2013 Predictions and then presents the predictions of 2014 temperatures and rainfall, as well as the associated socio-economic implications

Foreword

A

t the beginning of every year the Nigerian Meteorological Agency (NiMet), predicts the expected rainfall and temperature patterns over Nigeria. These are published as the *Seasonal Rainfall Prediction (SRP)* and presented to Nigerians early in the year to enable stakeholders in various sectors of the economy plan their activities ahead of time in a manner that reduces their vulnerability to weather related hazards.

As part of the implementation of our Aviation Master Plan, NiMet has made remarkable progress in developing their infrastructure for weather and climate monitoring. The Agency has also made significant investment in human capacity

development. As a result of these measures, the quality of NiMet's products and services has improved significantly in recent times. The Agency's forecasts are now more accurate and timely than ever before. It will be recalled for instance, that in the 2012 edition of the *Seasonal Rainfall Prediction*, NiMet issued early warnings about the flood that affected most parts of the country later that year. The successful completion of an independent Quality Management System (QMS) and ISO 9001:2008 Certification of the Agency's aeronautical services are eloquent testimonies that we have indeed developed NiMet into a World Class

weather service provider. This is in consonance with my Ministry's new Vision for its Agencies.

Various other weather-sensitive programs and projects in *aviation, agriculture, construction, health, hydroelectric power generation, oil and gas, shipping, manufacturing, distributive trade, sports planning, water resources management, environment, disaster management, etc.* will also benefit from the information in this publication. In particular, the effective implementation of the Dry Season Farming that was recently launched by the President, Dr. Goodluck Ebele Jonathan, GCFR, require accurate knowledge of the onset and cessation dates of the rainy season for various locations in Nigeria. These are contained in this publication. *NiMet's Drought* Monitoring activity will also be of immense value for the implementation of the Dry Season Farming program.

This edition of the SRP starts with the evaluation or review of the accuracy of the 2013 Predictions

and then presents the predictions of 2014 temperatures and rainfall, as well as the associated socio-economic implications for different sectors of the economy. The SRP covers forecasts for over 400 cities/towns in the country, and also includes the prediction of 'August Break' or 'Little Dry Season' which occurs mainly in parts of the southern States of Nigeria. NiMet has also included *Comfort Index* for the hot season (January to April) in this edition of SRP. Comfort Index is relevant to sporting activities, out-door events, human health and livestock production. The inclusion of information on 'August Break' and Comfort Index is an innovation introduced by NiMet in the Season Rainfall Prediction.

Operators in weather-sensitive sectors of the economy will certainly find the information in this publication useful for effective planning and efficient implementation of various programs and projects. I therefore recommend it to all stakeholders in government and private sectors; and indeed all Nigerians.



Dr. Samuel Ortom
Supervising Honourable Minister of Aviation

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The Prediction model, like in the previous years, is based on the strong tele-connection between El-Nino/Southern Oscillations (ENSO), Sea Surface Temperature (SST) anomalies and rain-bearing weather systems over Nigeria.

Executive Summary

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he Nigerian Meteorological Agency (NIMET) has prepared the 2014 edition of the Seasonal Rainfall Prediction (SRP) in fulfilment of its mandate of ensuring effective monitoring of the nation's weather and climate and provision of relevant meteorological information, advisories and early warnings to all Nigerians, planners, decision-makers and operators of the various rainfall-sensitive socioeconomic sectors. The prediction is done annually and usually presented to its stakeholders for their inputs on socio-economic implications of the predictions before its public presentation. The SRP is released early in the year so as to create good lead-time for policy makers to factor into their decision making processes. The agency therefore contributes to risk reduction associated with extreme weather and climate hazards as well as safety of lives and property. The product contributes significantly to the sustainable socioeconomic development of Nigeria.

In an ongoing quest to improve delivery of NIMET services, this year's SRP is unique as it contains significant improvement over the previous editions because of the following:

- Increase in total number of soil profiles from 6 to 42 which are better representatives of areas surrounding the weather stations in the different states.
- Increase in the total number of weather stations (Gombe, Lafia, Awka and Asaba), which increased the number of stations from 39 in previous years to 42 stations in 2014. Forecasts have also been made for more cities than previous years (from 112 cities to 372 cities).

- ? Improvement in temperature forecasts from presentation of the expected departures from normal (colder, normal, warmer) to presentation of specific values of temperature forecasts with highlights on likely areas where the expected day time temperature values may cause discomfort in the country based on comfort Index.
- ? Inclusion of skills (%) in the evaluation of the previous year's forecast in order to enhance understanding of, as well as increase users' confidence in the current year's forecast.

The Prediction model, like in the previous years, is based on the strong tele-connection between El Nino/Southern Oscillations (ENSO), Sea Surface Temperature (SST) anomalies and rain-bearing weather systems over Nigeria. (ENSO is a recurrent abnormal shift in winds and Ocean currents centred in the South Pacific Ocean region. It produces extreme weather and climate conditions in many parts of the world). The model also incorporates phenological and soil information. Historical daily weather data from 42-meteorological stations spatially distributed over Nigeria for 23 ENSO - Neutral years and 10 El Nino years is also used in the model for calculation of onset, cessation, length of rainy season and annual rainfall amount for the different areas in the country. The use of ENSO - Neutral and El Nino phases in 2014 SRP is done because of the predicted change of the ENSO phase from neutral to El Nino by second quarter of the year, (May-July).

The Neutral Phase is usually associated with normal weather and climate conditions while the El Nino (warm) phase expected later in the year is usually associated with decreasing rainfall in many parts of the country, particularly in the North (Sahel). NIMET will continue to monitor closely the evolutions of the ENSO phenomenon as the year progresses and will review the predictions if necessary.

There is approximately 90 percent probability that the neutral phase condition will persist through February - March 2014 period, decreasing to 60 percent through April - June 2014 season and further to 47 percent by the July-September 2014 season. Based on this scenario, the 2014 rainfall in Nigeria is likely to be dominantly under the influence of Neutral phase through January - July 2014.

The predictions presented in this publication include:

- (i) Day and Night Temperatures;
- (ii) Onset and cessation dates;
- (iii) Length of the rainy season;
- (iv) Annual amount of rainfall;
- (v) Expected deviations from the long term means, and
- (vi) Socio-economic implications of the predictions.

The 2014 SRP includes the evaluation of the 2013 predictions, i.e. the performance of each of the parameters itemized above which involves comparison of predicted with observed values in most parts of the country, with ratings in terms of skill (%) as either very good, good or low performance. Performance of temperatures generally had high scores particularly the night time temperatures. However, the performance of day time temperatures in March 2013 was low over the extreme North and Northeast. Rainfall performance was also generally good except in few places where delayed onset and cessation were experienced.

In 2014, most parts of the country are expected to experience a normal harmattan and hot season during January - April period. Daytime temperatures will be normal in most parts of the country with varying levels of discomfort particularly in the North. The greatest discomfort is expected in March and April over the extreme North. Warmer than normal day time temperatures are predicted for March, while colder than normal day temperatures are predicted for the western

flank in April. Night time temperatures are also predicted to be normal in most parts of the country, becoming warmest over the extreme North in March. April is expected to be colder than normal at night over the western and central parts of the country.

For rainfall, onset dates will vary between first week of March (in the southernmost part of the country) and late June in the far northern parts. Most Eastern and Western parts of the country are expected to have delayed onset by about one week, while onset will be normal in Sokoto, Kano, Nguru, Potiskum, Gombe, Bauchi, Jos, Lafia, Bida, Oshogbo, Ijebu-ode, Ilorin, Asaba, Enugu, Uyo, Port Harcourt and Calabar covering about 40% of the country.

The rainy season is predicted to end between first week of October in the North and fourth week of December in the South. Rainfall cessation is predicted to be earlier than normal over most parts of the North and Central States and much later over the southernmost areas.

In 2014, the length of rainy season is predicted to vary between 100 days over the extreme North and 300 days over the coastal areas. Most parts of the country are predicted to have a shorter length of season. However, longer than normal length of the season is likely over Iseyin and Calabar while normal length is predicted over Abuja, Yola, Port Harcourt, Akure and Owerri.

Annual rainfall amount is predicted to range from 3000 – 300mm; decreasing from south to the northernmost part of the country. Most parts of the country are predicted to have below normal rainfall. Areas such as Sokoto, Yola, Shaki, and Abeokuta are expected to have above normal rainfall while Gusau, Katsina, Zaria, Jos, Minna, Oshogbo, Akure, Iseyin, Ikeja, Benin, Ikom and Port Harcourt are predicted to have normal rainfall.

The 2014 predicted rainfall and temperature patterns over the country have some implications for various sectors of the economy which are highlighted below:

Socio-economic Implications



Agriculture: Livestock

In 2014, warmer-than-normal conditions are predicted for both day and night in March in the North. Below normal rainfall is also predicted in places in the North, Central and Southern states (figure 20b). It is therefore projected that:

- Livestock generally will be directly impacted through heat stress, changes in water availability, availability of good quality and quantity of feed; while vector-borne livestock diseases may increase during the period.
- For crops, the 2014 growing season is predicted to experience normal onset across the country except in and around Gusau and Yola in the North, Shaki and Abeokuta in the Southwest, which are predicted to experience delayed onset. The month of June 2014 will be characterized with dry spell in and around

- Zamfara, Katsina, Sokoto, Kano, Jigawa, Yobe, Borno and Adamawa States. Farmers in these areas are advised to plant drought-tolerant crops, and seek guidance from appropriate agricultural advisory experts to avoid economic loss.
- The predicted rainfall over the central and Southern parts of the country would support good yield of both cereals and tuber crops. Farmers in the Central and South of the country should take advantage of the predicted normal onset of rains to plant crops early enough for a good harvest.

Livestock production is therefore most likely to be affected by the 2014 forecast except if adequate preventive measures are taken. These include cultivated range land for improved pasture, rainfall harvesting by digging field ponds, etc.





Perishable Cargo Project

The development of perishable cargo terminals by the Federal Ministry of Aviation is expected to be completed in 2014 and it is part of the Transformation Agenda of the Federal Government. The objective of this project is to improve the export potentials of Nigeria's agricultural sector. The predicted temperatures in the North are warmer than normal and this may have negative impact on storage and

packaging of perishable goods. Therefore to prevent losses due to the predicted warmer than normal temperature, the perishable agricultural products should be stored in climate-controlled warehouses. The perishable cargo management is advised to collaborate with NIMET for hourly, daily or weekly weather information for the management of perishable goods.



Water Resources Management

The predicted below normal rainfall amount in the North will create water stress for agriculture, energy production, and navigation across the country. On the other hand, the normal-to-above normal rainfall predicted for Sokoto, Adamawa, Oyo and Ogun states will impact positively for all water-sensitive activities in the areas. This includes adequate water supply for agriculture, industrial

needs, groundwater water recharge, and Inland river flows. Hydrologists, water resources experts, as well as other relevant stakeholders are therefore advised to take full advantage of advisories contained herein and other advisories contained in NiMet's Monthly Drought and Flood Monitoring Bulletin in their operational activities.



Hydropower Generation

There may be challenge with hydro-power generation of electricity due to the less-than-normal rainfall predicted in many parts of the country this year. This may be aggravated by the prospects of early cessation of the rains, as well as the shorter length of the season expected in the North. These may affect Kainji and Jebba dams

resulting in low flows and reduced power generation. Government will need to harness other sources of power generation including renewable and gas-turbine sources in 2014. The 2014 SRP will be a good guide for decision makers in the hydro-power generating sector.



Dam Management

Dams in the far North may have difficulties getting enough flow of water as a result of less rain expected this year. The 2014 predictions also project early cessation of rainfall in the North. However, above normal rainfall is predicted in

and around Sokoto, Adamawa, Oyo and Ogun States, and thus dam managers in these areas should watch out for prospects of dam overflow, which may cause flooding if the water is not released timely.



Transportation: Aviation

This year, moderate harmattan conditions are predicted for the country in January, with increased prospects of reduced visibility in dust haze. Flight operations may also be affected as a result of early morning fog which can cause flight delays and cancellations.

The onset and cessation period are usually accompanied by strong winds, lightning and thunderstorms. These will be expected during the

onset and cessation period of the rainy season. Flight operators are advised to always avail themselves of the daily weather forecasts and alerts regularly issued by NIMET for all airports, aerodromes, air strips, and helipads located across the country. Pilots are also advised to take additional measures during take-off and landing to avoid weather hazards caused by wind shear, slippery runways and reduced visibility due to heavy rainfall.



Transportation: Road & Rail

The projected above normal rainfall in the northwest and inland of the South can pose threats on road transportation especially to motorists as reduced visibility in storms and lightning associated with rainfall can cause

accidents. Road signs, warnings on speed limits and advisories provided by the Road Safety Commission should be adhered to by motorists at all time.



Marine & Coastal

Marine and fishing operators are expected to enjoy hitch-free activities based on the predicted normal rainfall around the major port areas of Lagos, Port Harcourt and other coastal areas. Coastal marine transport activities will also be

enhanced. However, the gustiness and extreme winds which usually herald the onset and cessation of the rainy season may hamper fishing and in-shore recreational activities as well as activities of the oil and gas industries.



Health

The warmer conditions predicted in the North are expected to cause some levels of discomfort; particularly in areas such as Yola, Yelwa, Maiduguri, Nguru, Sokoto and Potiskum. Heat-related ailments are therefore expected to be prevalent in these areas during the hot season. Air-borne diseases usually triggered by harmattan dust haze, are likely to be prevalent in most part of the Northern states. Moreover, prospect of cold-weather related diseases such as pneumonia, catarrh, and cough are likely to occur in Yelwa, Jos, Abuja and Minna where minimum temperatures are predicted to be

colder than normal in April.

Above normal rainfall is predicted in areas like Sokoto, Yola, Shaki, Iseyin and Abeokuta, and it is expected that this may affect domestic water resources leading to their contamination, and bringing with it, health hazards such as cholera, diarrhoea and other water borne diseases. The health practitioners and Governments in these states should make contingency plans in the event of disease outbreak.

Disaster Management

This year's forecast is projecting a normal to below-normal rainfall across the country. Areas where above normal rainfall is expected are Sokoto, Yola, Shaki, and Abeokuta. The southernmost areas will be characterized with more violent thunderstorm during the onset and cessation periods. Areas vulnerable to dry spells in 2014 are Maiduguri, Potiskum,



Yelwa, Bida, Minna, Lafia, Ibi, and Makurdi. These places are expected to have below normal rainfall. Also there is strong possibility of wildfire affecting places in the North during the hot season (January – April). Emergency managers should use this information to help prepare communities in the areas most vulnerable.

Communication

Extreme weather and climate events like high temperatures, lightning, thunderstorms and strong winds have been found to significantly affect signal quality as well as communications infrastructure particularly during the onset and cessation periods in the season.

In 2014, the onset and cessation periods are



predicted to be very active particularly in the southern parts of the country. The Nigerian Communication Commission (NCC) and the telecommunications operators need to factor the forecast information contained in the SRP in their preparedness especially in areas that are prone to strong winds and heavy rainfall.

1.0 EVALUATION OF THE 2013 SEASONAL RAINFALL PREDICTIONS

In 2013, the Seasonal Rainfall Prediction (SRP) provided forecast for temperature and rainfall. The temperature forecast was for the period January – April for night and day temperatures, while the rainfall prediction comprised of two components, that is, the general trend of expected rainfall across the country, and also the departures of rainfall from the long term normal for the four parameters predicted – onset, cessation, length of season and annual. The evaluation therefore, presents the performance of each of these components, comparing predicted with observed values and their performance classified as either as very good or good or low performance.

The margin of error for each predicted parameter comes at either the 65 percent confidence (most preferred) or 95 percent confidence. The

evaluation criteria note that when a predicted value of the predicted meteorological parameter falls within a:

- 65% confidence interval, it is scored very good category
- 95% confidence interval, is scored good, and
- Evaluation outside the above two limits is scored low performance

Thus the evaluations are all performance-based. The overall skill therefore is a combination of very good and good skill in each case. The results of the evaluation of the various predicted parameters in 2013 are presented below for temperatures and rainfall.

1.1 TEMPERATURE EVALUATION FOR JANUARY TO APRIL 2013

1.1.1 January Night & Day Temperature

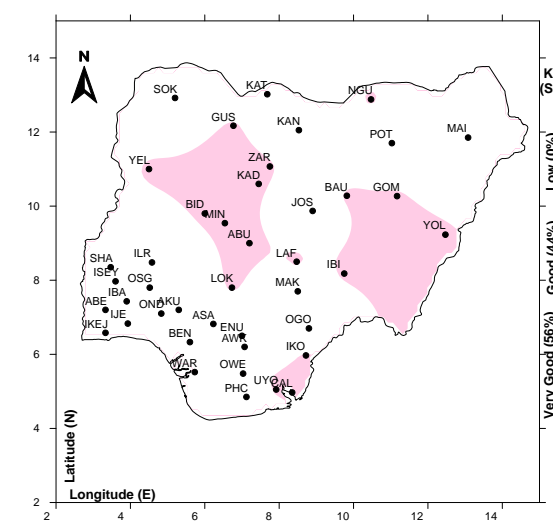


Fig. 1a: Performance of Jan night temp

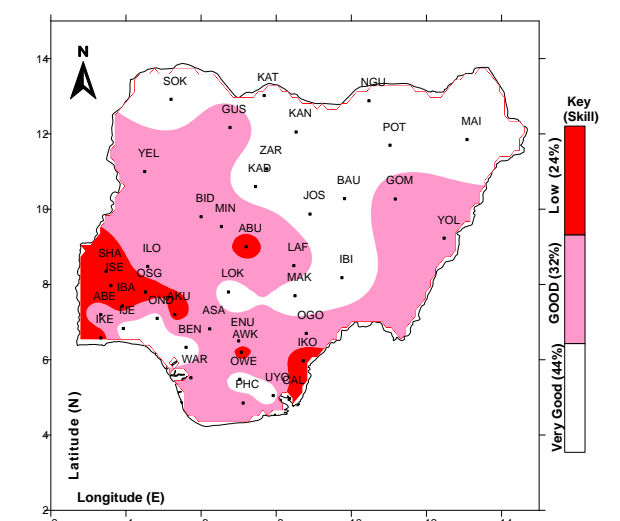


Fig. 1b: Performance of Jan day temp

From figure 1a, the skill of the 2013 January night temperature was 100%. The forecast was excellent. However, the performance of the day

temperature forecast for the same month is slightly lower than that of the night, though still good at 76% performance (fig. 1b).

1.1.2 February Night and Day Temperature

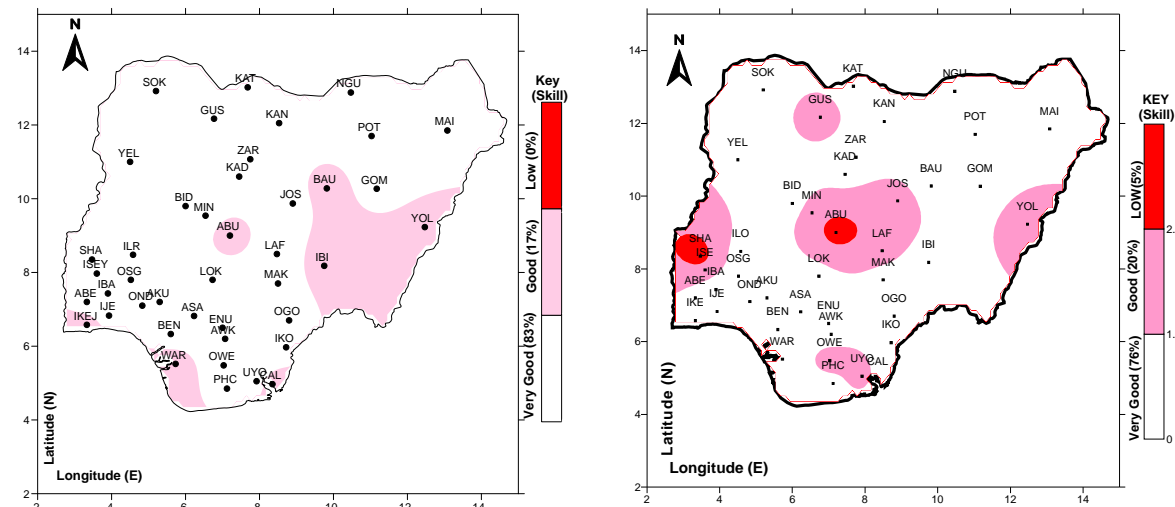


Fig. 2a: Performance of Feb night temp

Fig. 2b: Performance of Feb day temp

Figure 2a shows that the performance of the 2013 February night temperature forecast is excellent (100%), while figure 2b shows that the 2013 day temperature forecast for the same

month is very good at 95% with 5% low skill. The day-time predictions were poor in Abuja and Shaki (Oyo State) only.

1.1.3 March Night and Day Temperature

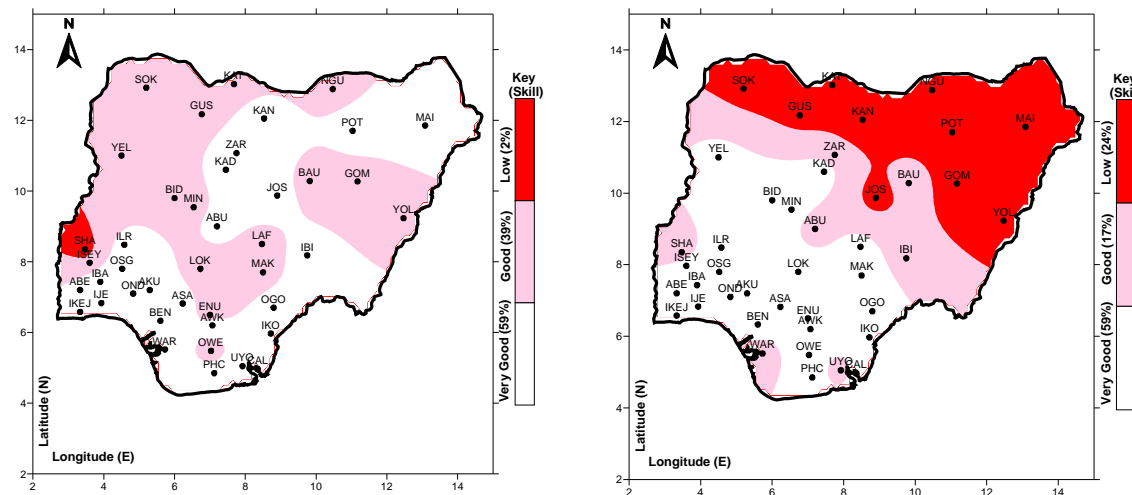


Fig. 3a: Performance of Mar night temp

Fig. 3b: Performance of Mar day temp

There was very good performance of the forecast night temperature in March 2013 (figure 3a). The observed temperatures during the day in March 2013 agreed with the prediction in parts of the central states (areas coloured white), representing 59% of the stations in the country

(Fig. 3b). Good skills were achieved in Zaria, Abuja, Ibi, Bauchi, Shaki, Warri and Uyo while the lowest skills were recorded over Yola, Gombe, Jos and the extreme North representing 24% of the meteorological station locations in the country.

1.1.4 April Night and Day Temperature

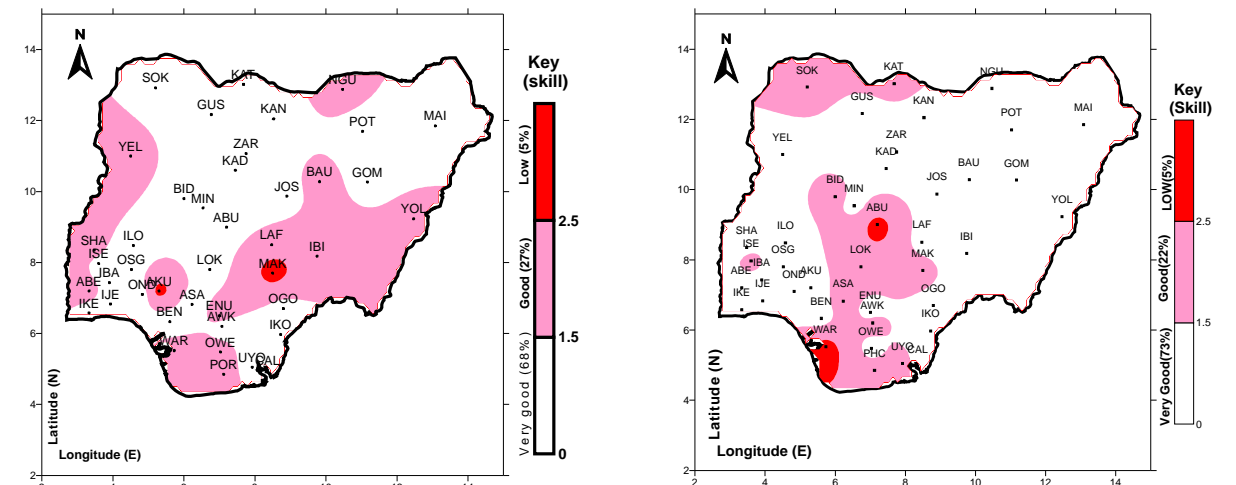


Fig. 4a: Performance of Apr night temp

Fig. 4b: Performance of Apr day temp

The April 2013 night temperature prediction achieved 95% performance when compared with the observed. The predictions were out in only 5%

of the country, that is, over parts of Ondo and Benue States. Similar results were obtained for the day temperature evaluation.

1.2 RAINFALL EVALUATION

1.2.1 Onset Dates Trend and Deviations of Rainfall in 2013

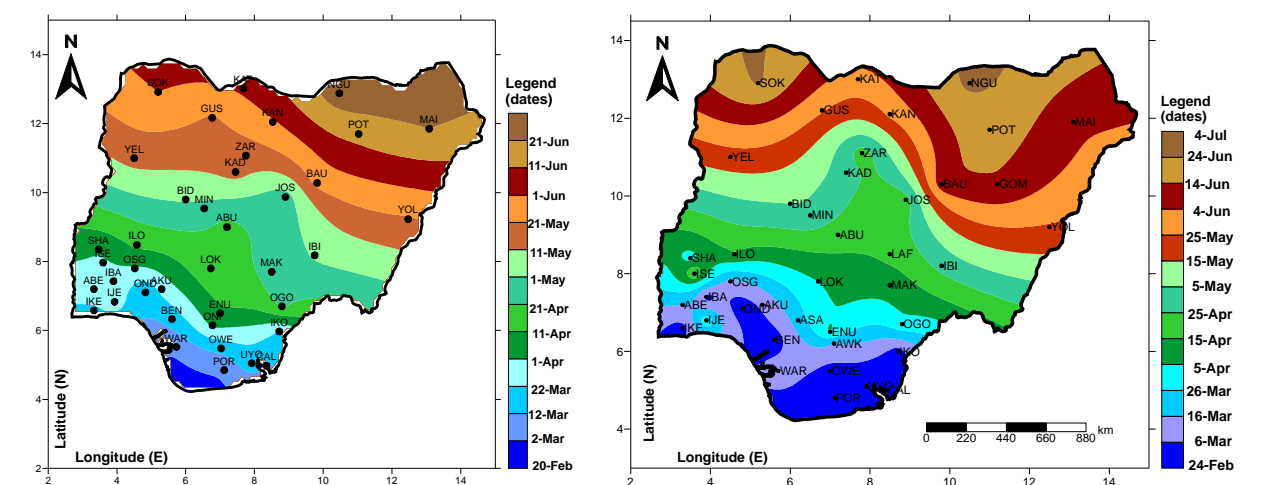


Fig. 5a: Predicted onset dates in 2013

Fig. 5b: Observed onset dates in 2013

Figures 5a and 5b above show the 2013 predicted and actual onset dates trend in the country. From the two figures, there was delayed onset of the rains in most northern states, becoming most pronounced in Sokoto and

Nguru. It was also delayed in parts of the southwest. On the other hand, early onset was observed in Ikom, Uyo, Port-Harcourt, Owerri, Ondo, Benin and Ikeja.

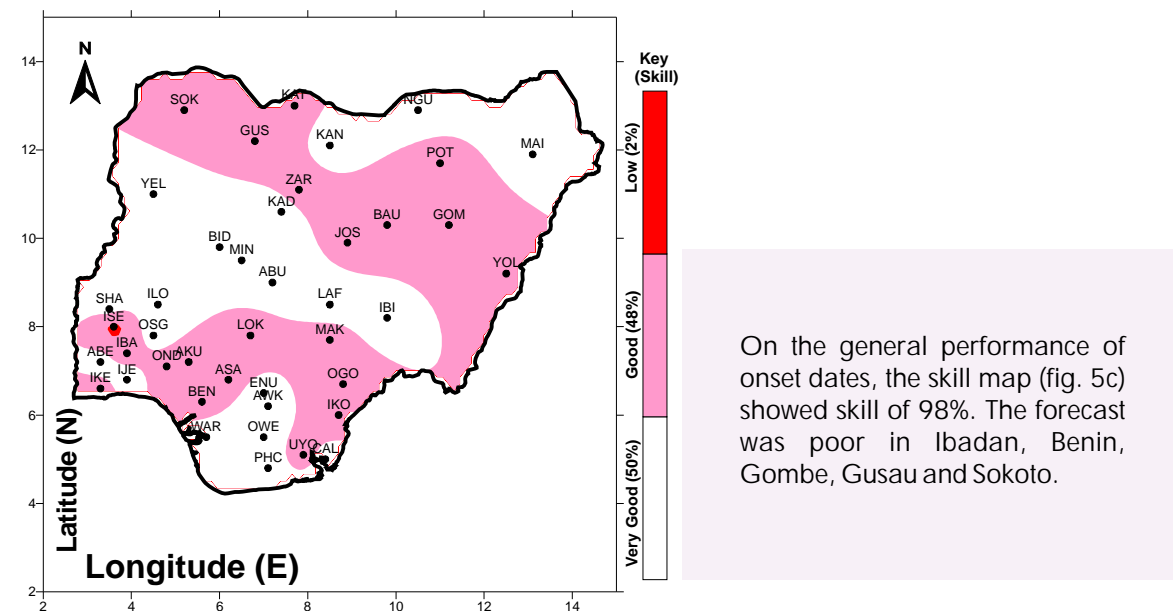


Fig. 5c: Performance of 2013 predicted onset dates

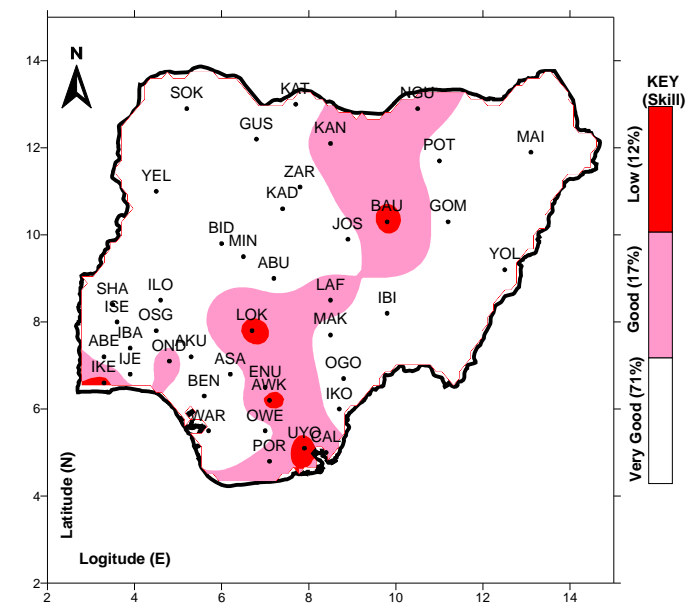


Fig. 6c: Performance of 2013 predicted end dates

Figure 6c shows that 88% of the predicted cessation dates in 2013 were similar to the observed, which is a measure of the performance or skill of the forecast. From the map, the prediction came out well in most parts of the

country. It was also good in and around Nguru, Kano, Lafia, Ondo, Enugu and Port Harcourt while NIMET will endeavour to improve the skill over Bauchi, Awka, Uyo and Ikeja

1.2.2 Cessation Dates Trend and Deviations of Rainfall in 2013

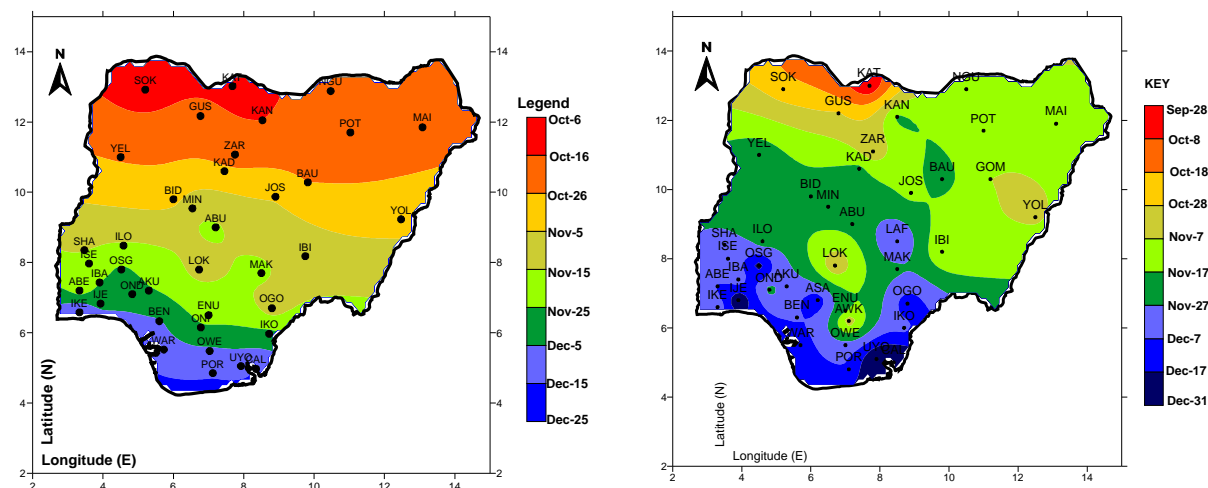


Fig. 6a: Predicted end dates in 2013

Fig. 6b: Observed end dates in 2013

Figures 6a and 6b show the trend of predicted and observed rainfall cessation dates in 2013. The predicted cessation dates for Oshogbo, Asaba and Ogoja were later than predicted

(extended rainfall). Most parts of the North also experienced later than predicted cessation dates. The cessation dates in Abuja, Ilorin, Makurdi, Lokoja and Ibi were observed to be as predicted.

1.2.3 Trend in the Length of Growing Season and its Deviations in 2013

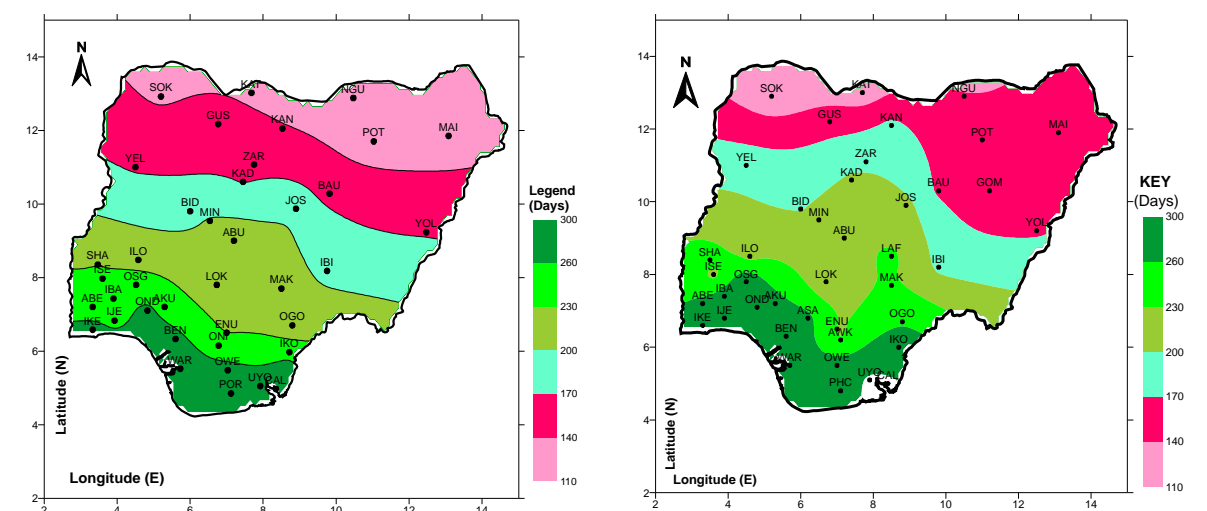


Fig. 7a: Predicted LGS in 2014

Fig. 7b: Observed LGS in 2014

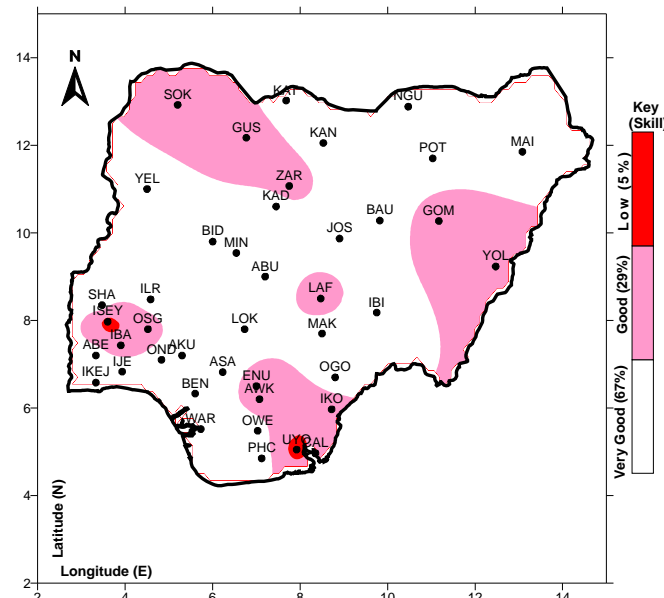


Fig. 7c: Performance of 2013 predicted length of growing season

Figures 7a and 7b above show the comparison between predicted and observed length of growing season in 2013. The observed length of growing season is longer than the predicted in

most parts of the country. As shown in fig. 7c, the performance of 2013 prediction for the length of growing season reached 96%. Low performance was observed in Ijebu-Ode and Uyo only.

1.2.4 Annual Rainfall Trend and Deviations in 2013

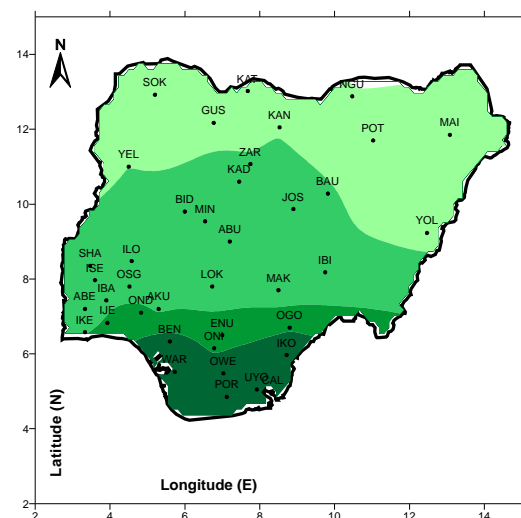


Fig. 8a: Predicted rainfall amount in 2013

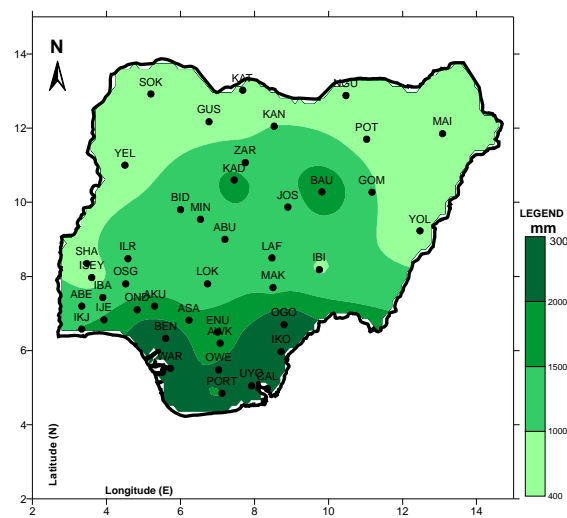


Fig. 8b: Observed rainfall amount in 2013

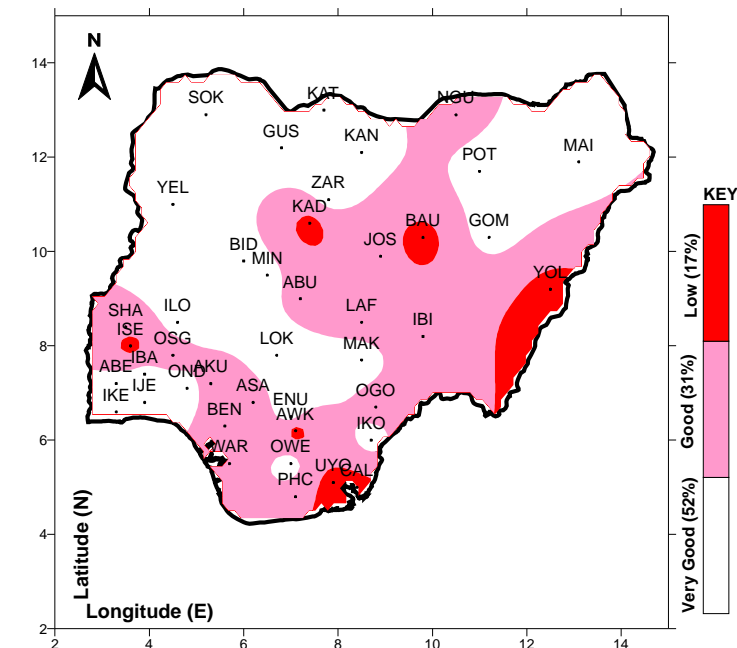


Fig. 8c: Performance of 2013 predicted annual amount of rainfall

Though figures 6a and 6b look alike, close observations show that some of the areas that recorded below predicted annual rainfall amounts include Ibi, Shaki, Iseyin (400mm-1000mm) and Port Harcourt (1500mm-2000mm) while Kaduna, Bauchi (1500mm-

2000mm) and Ogoja (2000mm-3000mm) recorded above predicted amounts of rainfall last year. From the deviation map (fig. 8c), the skill of the map reached 83% agreement between the prediction and the observed.

2.0 2014 SEASONAL RAINFALL PREDICTION

2.1 Temperature Predictions for January to April

In previous editions of the SRP, NIMET presented expected deviations from long-term averages for the night and day-time temperature from January – April. These are the four critical months during which the temperature effect in the country is profound; that is, the harmattan (cold) season prevailing during January and February while the hot season dominates during March and April.

In 2014, NIMET has introduced the concept of *comfort Index* in the predictions of night and day temperatures for the same period as in previous editions, and different categories are classified according to different degrees of *comfort*. This depicts how comfortable the environment will be at the predicted time and place. Thus the categories are “*comfort*”, “*discomfort*”, and “*high discomfort*” for areas with day-time

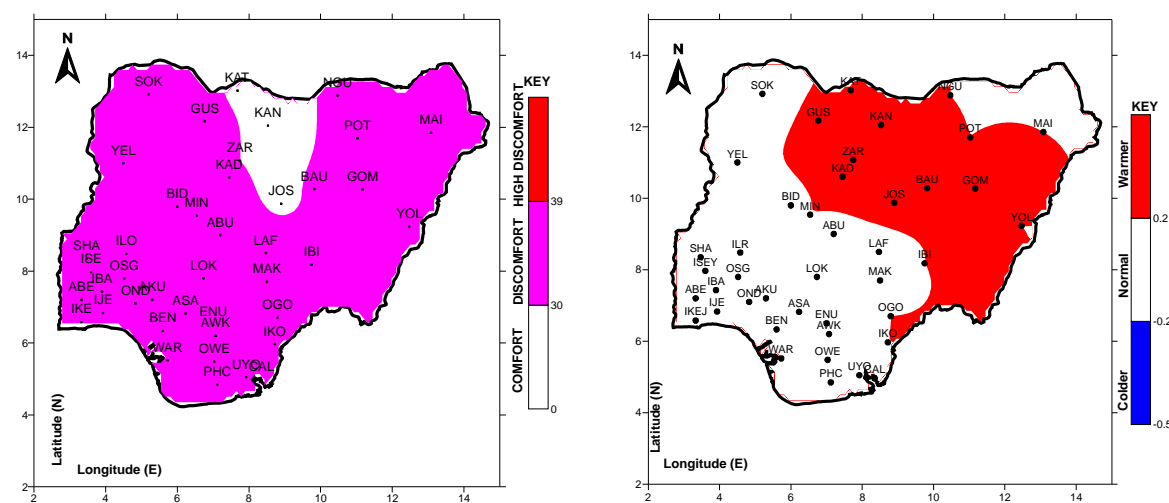
maximum temperature values “less than 30 DegC”, “30 – 39 DegC”, and “above 39 DegC”, respectively. This categorization suits our environment and it is in conformity with international scientific best practices.

The other newly introduced parameter is the predicted deviation from long-term means in the temperatures at night and day. Again, this is presented since it will better explain how normal or otherwise (cold and hot) a region or place is

expected to be at a particular period during January – April 2014. It is not only for human comfort that these indicators will serve but also it will help determine the choice of seed types for dry season planting. The expected temperature deviation from long-term means therefore guide the farmers adequately. The 2014 SRP presentation commences with the night and day temperature forecast, and followed by the rainfall predictions.

2.1.1 MAXIMUM TEMPERATURE TREND & DEVIATIONS FROM LONG-TERM MEANS

2.1.1.1 January Maximum Temperature and Deviations from Long-term Means



Figs. 9a & 9b: Predicted maximum temperature and the deviation from long-term means in January

The predicted maximum temperature in January 2014 will range from 30°C to 35°C, reducing slightly below 30°C in Katsina, Kano, Zaria and Jos. Most discomfort will be felt at Minna, Bida and Yelwa where the temperature is predicted to reach 38°C during the period. Warmer than

normal temperature conditions will be experienced in most areas in the North while the central and southern areas will be normal compared to January long-term average maximum temperature).

2.1.1.2 February Maximum Temperature and Deviations from Long-term Means

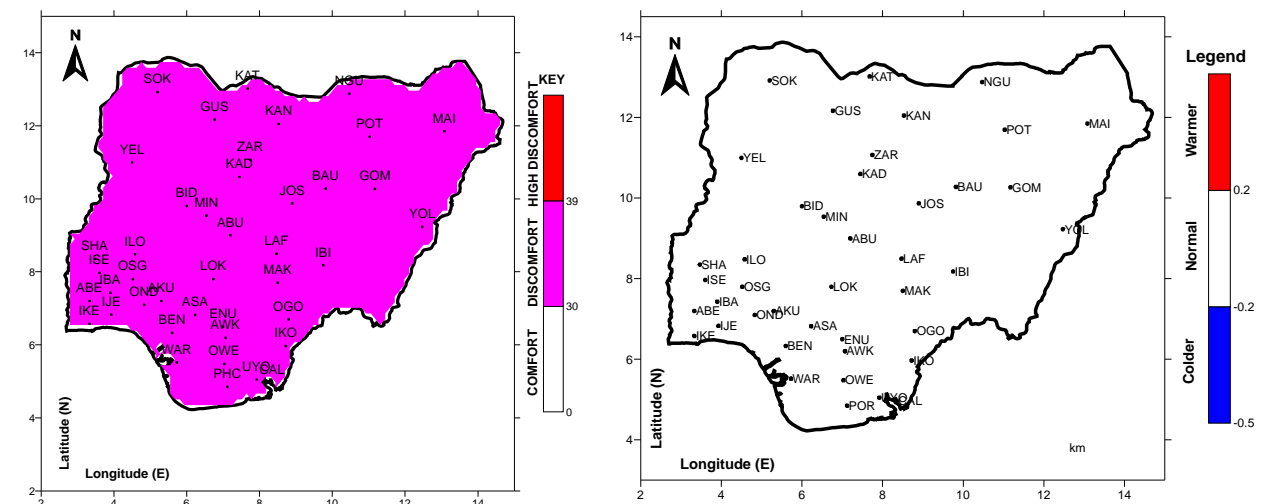
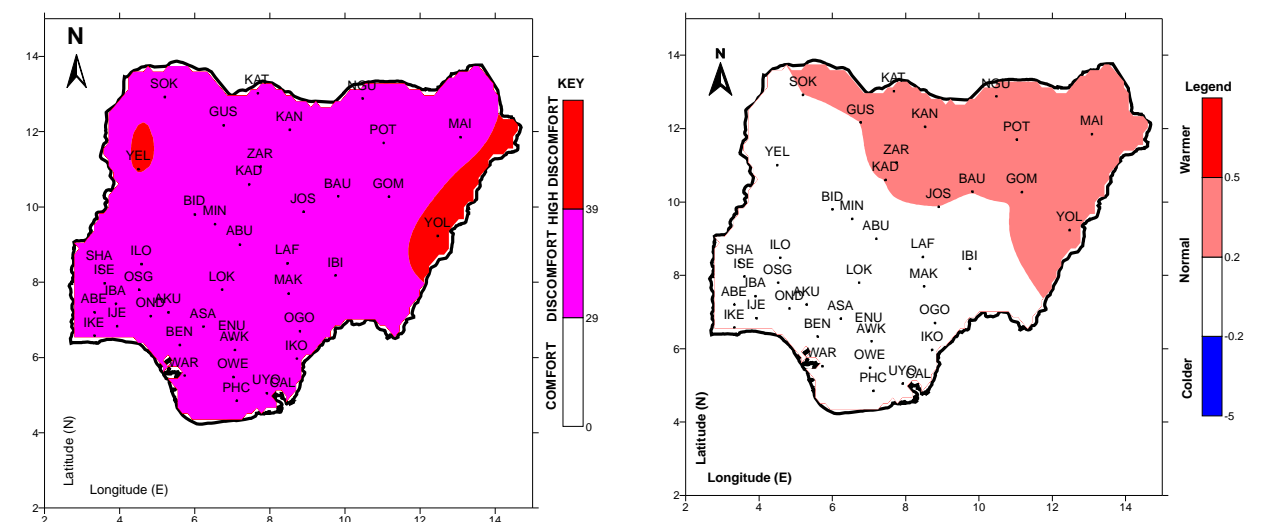


Fig. 10a & 10b: Predicted maximum temperature and deviations from long-term means in February

The predicted maximum temperature in February 2014 will range from 30°C to 37°C all over the country, with values in the range 36 – 37°C expected in and around Ogoja, Abeokuta, Makurdi, Ibi, Lafia, Yola, Minna and Bida. This

will lead to some level of discomfort. On the deviation from long-term means map, normal February maximum temperature condition is predicted for the entire country.

2.1.1.3 March Maximum Temperature and Deviations from Long-term Means



Figs. 11a & 11b: Predicted maximum temperature and deviations from long-term means in March

The predicted maximum temperature in March 2014 will range from 32°C to 40°C, with peak of about 40°C expected around Yola and Yelwa. People living in these areas will therefore

experience high discomfort during March. Warmer than normal conditions are therefore predicted for most areas in the north, especially in the northeast axis.

2.1.1.4 April Maximum Temperature and Deviations from Long-term Means

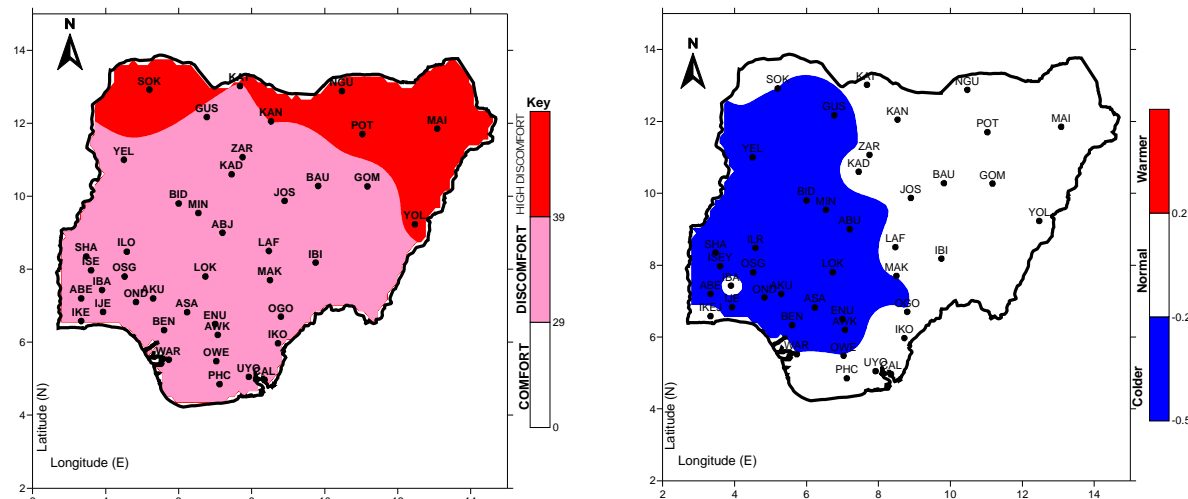


Fig. 12a & 12b: Predicted maximum temperature and deviations from long-term means in April

Maximum temperature in April 2014 is expected to range from 29°C to 39°C in most parts of the country. Maximum temperature is predicted to reach 41°C in and around Maiduguri, Nguru, Sokoto, Potiskum, and Yola during the month,

and this is expected to bring with it, high discomfort to the citizens. On the deviations from long-term means map, most places in the western half of the country is predicted to experience colder than normal temperatures.

2.1.2 MINIMUM TEMPERATURE TREND & DEVIATIONS FROM LONG-TERM MEANS

2.1.2.1 January Minimum Temperature and Deviations from Long-term Means

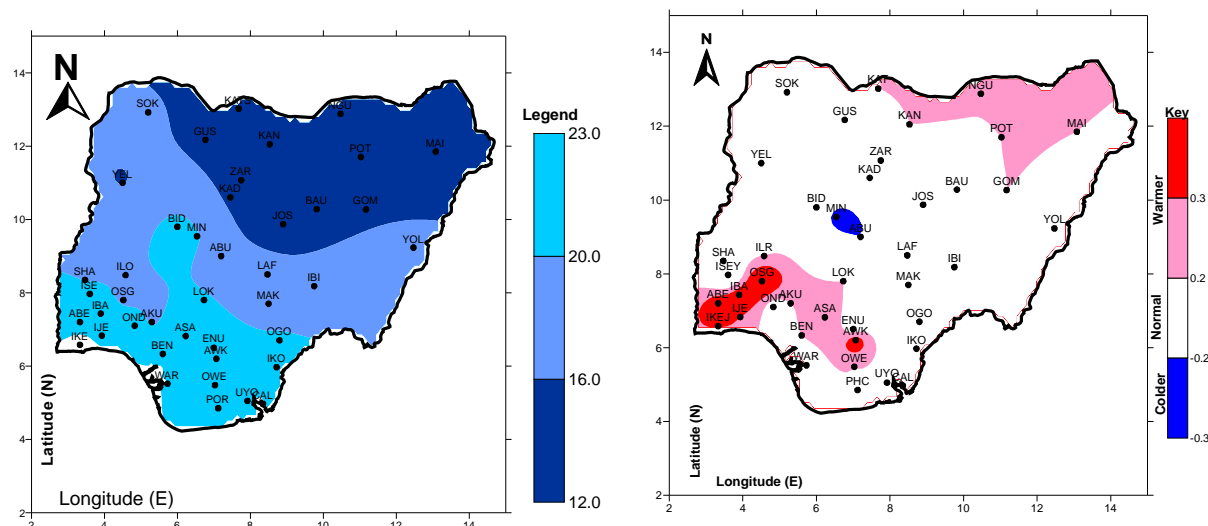
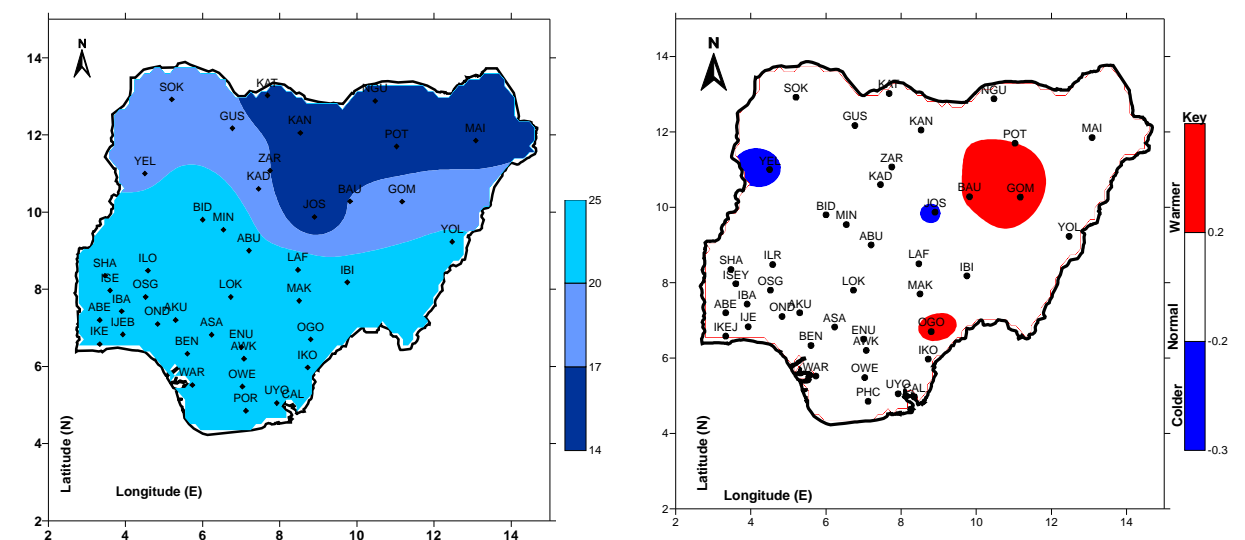


Fig. 13a & 13b: Predicted minimum temperature and deviations from long-term means in January

The predicted January 2014 minimum temperature and deviations from long term averages are presented in figures 13a and 13b respectively. The deviations from long-term means map (figure 13b) shows that most parts of the country are predicted to experience normal

night temperature. However, Minna and Abuja are expected to be colder at night than normal, and parts of the northeast, northwest, southwest and southeast are more likely to be warmer at night (places in red).

2.1.2.2 February Minimum Temperature and Deviations from Long-term Means

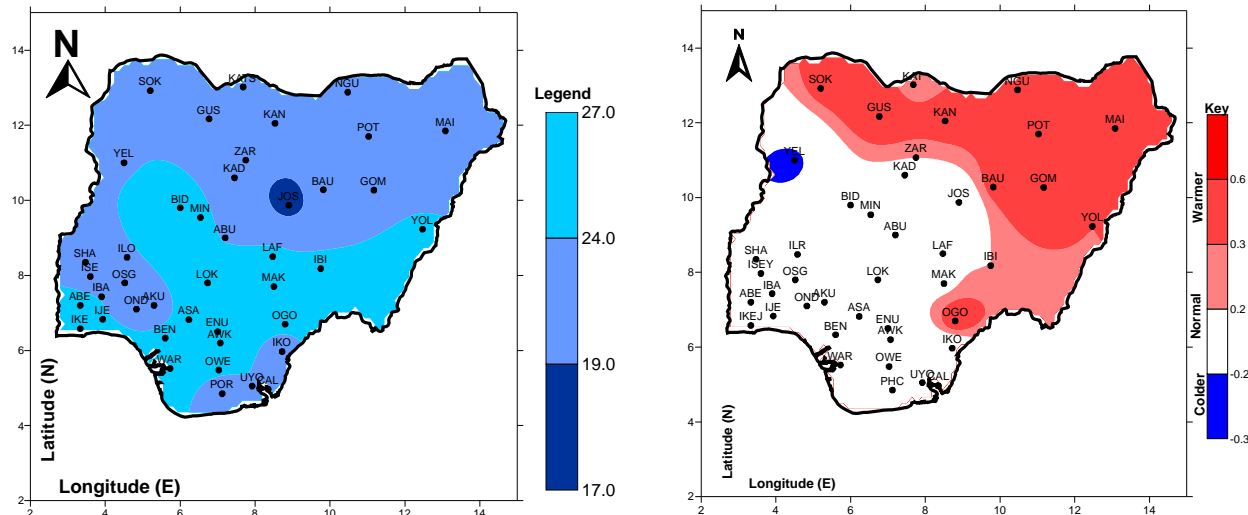


Figs. 14a & 14b: Predicted minimum temperature and deviations from long-term means in February

Figure 14 above shows the predicted February 2014 night temperature and the deviations from long term averages. Night temperatures are predicted to range from 14 to 23 degree Centigrade and will be normal in most parts of

the country. On the deviations from long-term means map (figure 14b), Yelwa and Jos are expected to be colder at night than normal while Bauchi, Gombe and Ogoja axis are predicted to be warmer at night.

2.1.2.3 March Minimum Temperature and Deviations from Long-term Means



Figs. 15a & 15b: Predicted minimum temperature and deviations from long-term in March

Figure 15a and 15b above are the predicted March 2014 minimum temperature and the deviations from long term averages respectively (figs. 15a & 15b). Night temperatures for March 2014 are predicted to range from 17 to 26°C. On the deviations from long-term means map,

Yelwa is expected to be colder than normal at night while most parts of the north (in red) are predicted to be warmer than normal at night. The rest of the country will be normal during the period.

2.1.2.4 April Minimum Temperature and Deviations from Long-term Means

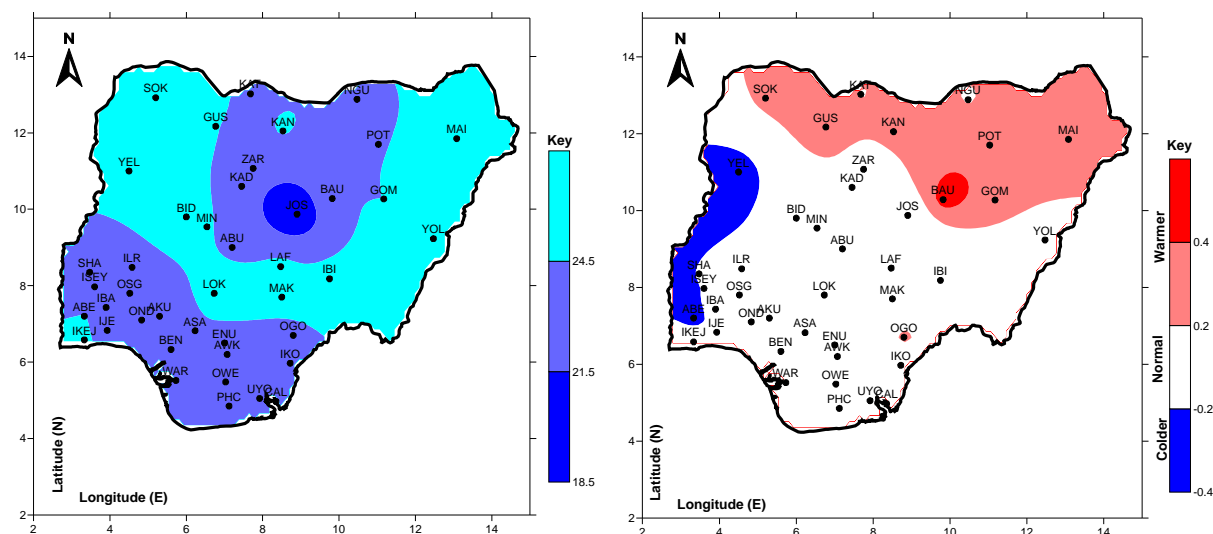


Fig. 16a & 16b: Predicted minimum temperature and deviations from long-term means in April

The above maps (Fig. 16a & 16b) show the predicted April 2014 minimum temperature and the deviations from long-term averages. Night temperatures are predicted to range from 18°C to 27°C, with Jos predicted to record the lowest

temperature. On the deviations from long-term means map, the north will be warmer becoming hotter in Bauchi. Colder conditions are however predicted for Yelwa and Abeokuta during the month.

2.2 2014 RAINFALL PREDICTION

2.2.1 ONSET OF RAINY SEASON

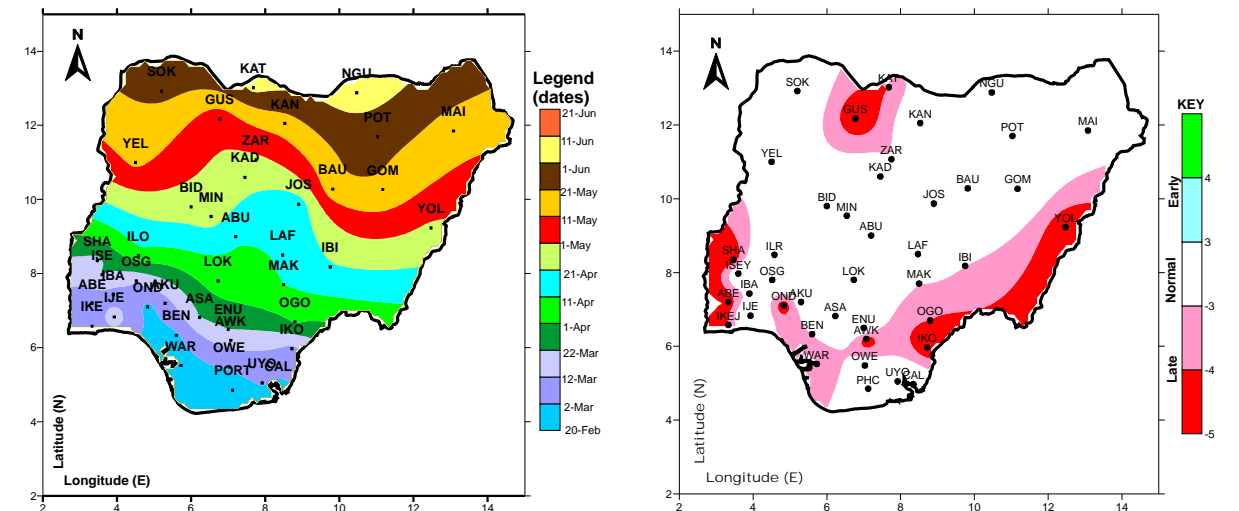
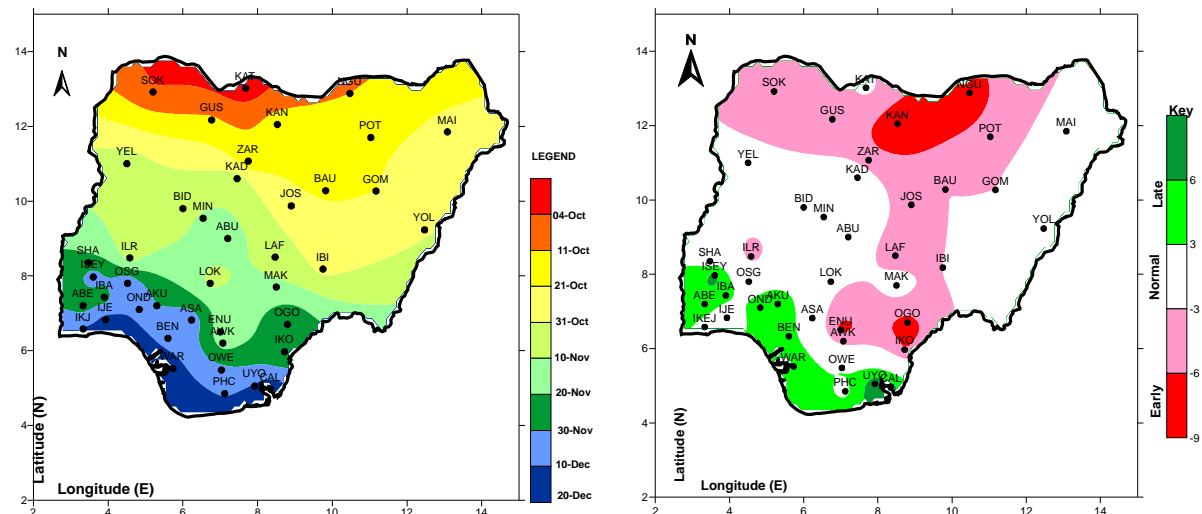


Fig. 17a & 17b: Predicted onset dates and deviations from long-term means

Fig. 17 above shows the 2014 Onset dates in the country. Prediction shows onset from February 20 in the southernmost part to June 21 in the northernmost part. On the deviations from long-

term means map, all places in pink and red colours are expected to have late onset of rainfall in 2014, while all other areas will be normal.

2.2.2 CESSATION OF RAINY SEASON



Figs. 18a & 18b: Predicted cessation dates and deviations from long-term means

Figure 18a shows the 2014 predicted cessation dates of rainy season across the country, while figure 18b show the deviations from long-term means in the predicted cessation dates. From the first map, the rains are predicted to cease from 4 October – 20 December 2014 progressively

from south to the north. It is predicted that rainfall will cease earlier in many parts of the North and central states (red colour). It will however end later than predicted in the southernmost areas (green colour).

the southernmost parts. From fig. 19b, most parts of the country are expected to experience shorter length of rainy season with greater severity in reduction over areas around Gusau, Potiskum and Zaria in the North, Lafia, Ibi and

Makurdi in the central states, Ikeja, Enugu, Ogoja and Awka in the south. Iseyin, Uyo and Calabar

2.2.4 ANNUAL AMOUNTS OF RAINFALL

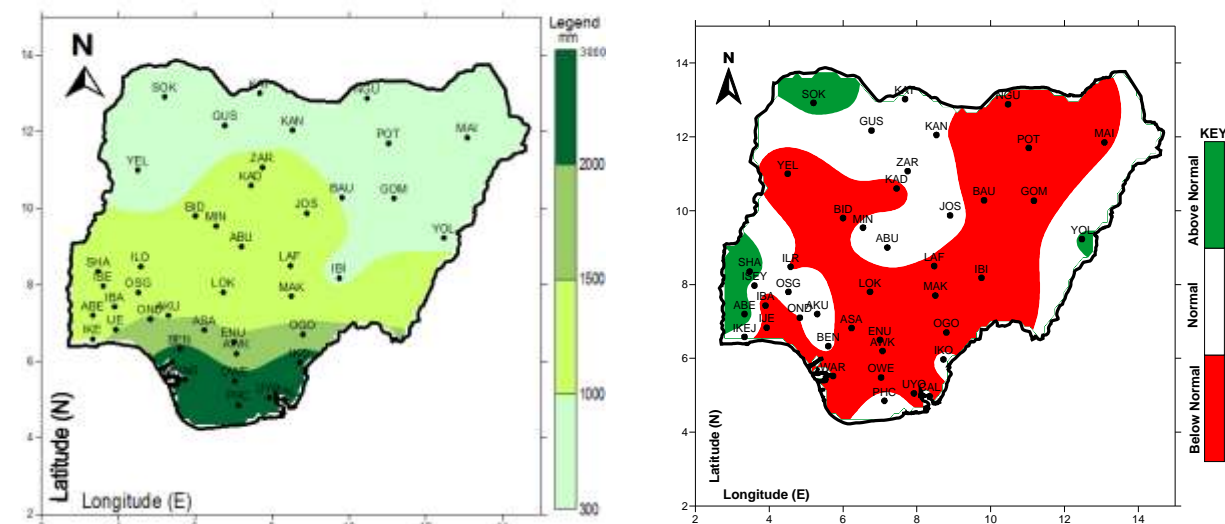


Fig. 20a & 20b: Predicted annual amount and deviations from long-term means

The predicted 2014 annual rainfall is shown in fig. 20a while fig.20b shows the percentage deviations from the long-term averages. In 2014, the annual amount of rainfall is expected to have a range of 300mm – 3000mm increasing from the north to the southernmost part of the country.

From the departure map, areas in red colour are expected to have below normal rainfall amount. However, areas such as Sokoto, Yola, Shaki, Iseyin, and Abeokuta are expected to have above normal rainfall. The rest of the country is predicted to have normal rainfall.

2.2.3 LENGTH OF RAINY SEASON

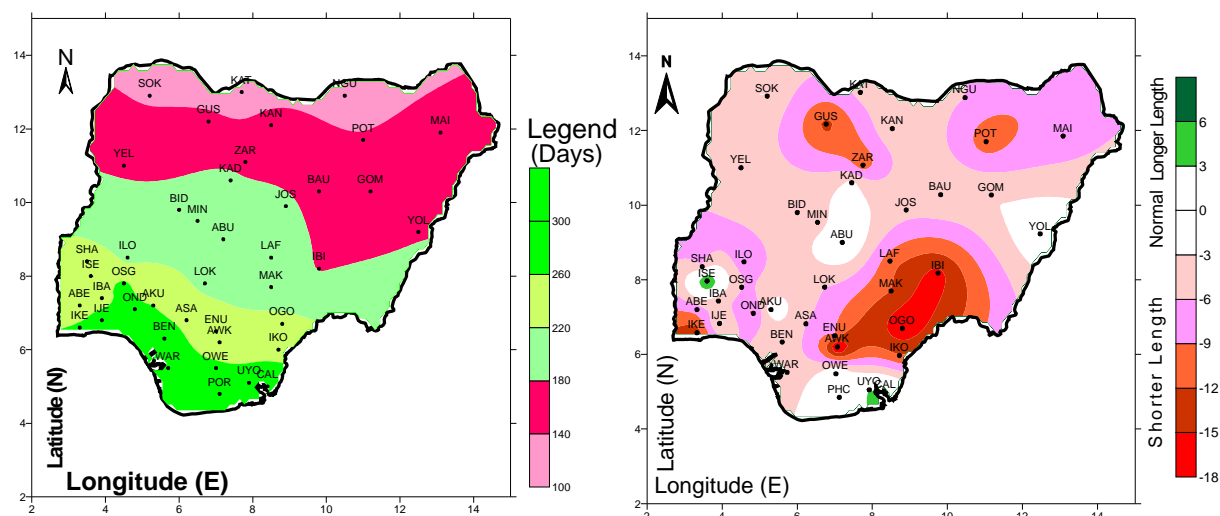


Fig. 19a & 19b: Predicted length of season and deviations from long-term means

In figure 19a, the predicted 2014 length of rainy season is presented, while fig. 19b shows the deviations from the long-term averages of length

of rainy season. In 2014, the length of rainy season is expected to range from 100 days in the northernmost parts of the country to 300 days in

2.2.5 2014 LITTLE DRY SEASON

The map below shows areas likely to experience the little dry season (short period of drought or dry spell) between July 15 and 31 August, 2014. The areas coloured in red have very high prospects of experiencing the Little Dry Season (LDS) in 2014. Areas in orange colour have medium probability while areas in peach colour have the lowest probability of experiencing LDS in the country. The rest of the places in white are not expected to be affected by the 2014 LDS.

region (areas in the south) of the country. As El Nino develops in the second half of the year, these regions are likely to receive less rain in August than the averages.

Also, in 2014, the month of August is expected to be drier than August 2013 in the Bi-modal rainfall

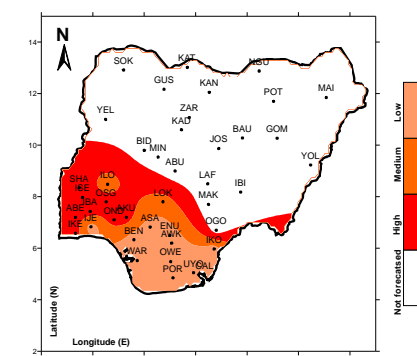


Fig.21: Chances of Little Dry Season in 2014

SOCIO-ECONOMIC IMPLICATIONS

3.1 Agriculture: Crops

It is necessary for the concerned farmers to take note of the temperature forecast for both night and day and employ all necessary measures that will assist crop germination including choosing drought resistant varieties.

On the other hand, the 2014 growing season is predicted to experience normal onset across the country except in and around Gusau and Yola in the North, Shaki and Abeokuta in the Southwest, which are predicted to experience delayed onset. The prediction also shows the prospects of early cessation in the North. Farmers in the affected areas are advised to choose the best practice to make good use of the prediction and ensure food security and increased production.

The month of June 2014 will be characterized

with dry spell in and around Zamfara, Katsina, Sokoto, Kano, Jigawa, Yobe, Borno and Adamawa States. Farmers in these areas are advised to plant drought-tolerant crops, and seek guidance from appropriate agricultural advisory experts to avoid economic loss.

The predicted rainfall over the central and Southern parts of the country would support good yield of both cereals and tuber crops. Farmers in the Central and South of the country should take advantage of the predicted normal onset of rains to plant crops early enough for a good harvest. Government also need to assist farmers with all necessary input including irrigation facilities and soft loans to boost agriculture production in 2014.



3.2 Agriculture: Livestock

In 2014, warmer-than-normal conditions are predicted for both day and night in March in the North. Below normal rainfall is also predicted in places in the North, Central and Southern states (figure 20b). It is therefore projected that:

- ? • Livestock generally will be directly impacted through heat stress, changes in water availability due to high evaporative losses from water bodies, and availability of good quality and quantity of feed, etc.
- ? • Livestock also need more water as temperatures rise. Thus, coupled with predicted less rainfall in 2014, this could pose serious constraint on livestock production in these areas. Long dry periods usually associated with El Nino phase in the North may pose further challenge with availability of feeds. There

may be communal clashes arising from the migratory tendencies of cattle rearers in search of better pasture and rangeland.

- ? • These predicted weather and climate conditions may trigger shifts in the distribution of vector-borne livestock diseases, carried by ticks, mosquitoes, flies, etc. Diseases carried by these vectors such as East Coast fever and babesiosis may increase in these areas during the period.

Livestock production is therefore most likely to be affected by the 2014 forecast except if adequate preventive measures are taken. These include cultivated range land for improved pasture, rainfall harvesting by digging field ponds, etc.



3.3 Perishable Cargo Project

The construction of perishable cargo terminals by the Federal Ministry of Aviation is expected to be completed in 2014 and it is part of the Transformation Agenda of the Federal Government. The objective of this project is to improve the export potentials of Nigeria's agricultural sector.

The warmer than normal temperatures predicted in March, in most of North western and North eastern parts of the country, will therefore have negative impact on storage and packaging of perishable goods. Therefore to prevent losses due to the predicted warmer than normal temperature, the perishable agricultural products

should be required to be stored in climate-controlled warehouses. Above normal rainfall amount predicted in Sokoto, Yola and part of the South west will also enhance conveyance of products through the inland waterways to the designated export terminals.

The perishable cargo management authority is advised to collaborate with NIMET for daily and weekly weather information which will help tremendously in the management of perishable goods. These include crops and livestock such as processed meat, fish, vegetables, exotic flowers and fruits.



3.4 Water Resources Management

The predicted below normal rainfall amount in the North will create water stress for agriculture, energy production, and navigation across the country. These key economic activities which depend on rainfall need to be supported with relevant alternative measures such as irrigation, good dam management practice and drenching of the waterways.

On the other hand, the normal-to-above normal rainfall predicted for Sokoto, Adamawa, Oyo

and Ogun states will impact positively for all water-sensitive activities in the areas. This includes adequate water supply for agriculture, industrial needs, groundwater water recharge, and Inland river flows. Hydrologists, water resources experts, as well as other relevant stakeholders are therefore, advised to take full advantage of advisories contained herein and other advisories contained in the Monthly Drought and Flood Monitoring Bulletin in their operational activities.



3.5 Hydropower Generation

This year, there may be challenge with hydro-power generation of electricity due to the less-than-normal rainfall predicted in many parts of the country this year. This may be aggravated by the prospects of early cessation of the rains, as well as the shorter length of the season expected in the North. These may affect Kainji and Jebba

dams resulting in low flows and reduced power generation. Government will need to harness other sources of power generation including renewable and gas-turbine sources in 2014. The 2014 SRP will be a good guide for decision makers in the hydro-power generating sector.



3.6 Dam Management

Dams in the far North may have difficulties getting enough flow of water into dams as a result of less rain expected this year. The 2014 predictions also project early cessation of rainfall in the North. However, above normal rainfall is predicted in and around Sokoto, Adamawa, Oyo and Ogun States, and thus dam managers in

these areas should watch out for prospects of dam overflow, which may cause flooding if the water is not released timely. Standard and precautionary measures including use of NIMET's SRP is therefore recommended for application by Dam operators to forestall hazards.



3.7 Transportation: Aviation

In 2014, moderate harmattan conditions are predicted for the country in January, with increased prospects of reduced visibility in dust haze. Flight operations may also be affected as a result of early morning fog which can cause flight delays and cancellations.

The onset and cessation period are usually accompanied by strong winds, lightning and thunderstorms. These will be expected during February/March in the southernmost areas, reaching May/June in the far North for the onset of the rains; and September – December for the cessation period. NIMET provides adequate

forecasts of the occurrence of these hazardous weather events and also issues alerts on their occurrence with good lead-time using advanced satellite-based equipment such as the weather radar. Flight operators are therefore advised to always avail themselves of the daily weather forecasts and alerts regularly issued by NIMET for all airports, aerodromes, air strips, and helipads located across the country. Pilots are also advised to take additional measures during take-off and landing to avoid weather hazards caused by wind shear, slippery runways and reduced visibility due to heavy rainfall.



3.8 Transportation: Road & Rail

Rainfall, sun reflection, wind storm, dust haze, fog, thunderstorm, flood and some other weather conditions that reduce horizontal visibility, are of importance to the road and rail transport. The road and rail sectors provide critical services, transporting an array of goods and services, and enhancing economic growth of the nation.

The projected above normal rainfall in the northwest and inland of the South can pose threats on road transportation especially to motorists as reduced visibility in storms and lightning associated with rainfall can cause accidents. Road signs, warnings on speed limits and advisories provided by the Road Safety Commission should be adhered to by motorists at all time.



3.9 Marine & Coastal

In 2014, marine and fishing operators are expected to enjoy hitch-free activities based on the predicted normal rainfall around the major port areas of Lagos, Port Harcourt and other coastal areas. Coastal marine transport activities

will also be enhanced. However, the gustiness and extreme winds which usually herald the onset and cessation of the rainy season may hamper fishing and in-shore recreational activities as well as activities of the oil and gas industries.



3.10 Health

The warmer conditions predicted in the North are expected to cause some levels of discomfort; particularly in areas such as Yola, Yelwa, Maiduguri, Nguru, Sokoto and Potiskum. Heat-related ailments are therefore expected to be prevalent in these areas during the hot season.

Air-borne diseases usually triggered by harmattan dust haze, are likely to be prevalent in most part of the Northern states. Moreover, prospect of cold-weather related diseases such as pneumonia, catarrh, and cough are likely to occur in Yelwa, Jos, Abuja and Minna where

minimum temperatures are predicted to be colder than normal in April.

Above normal rainfall is predicted in areas like Sokoto, Yola, Shaki, Iseyin and Abeokuta, and it is expected that this may affect domestic water resources leading to their contamination. Thus, people living in these places may experience health hazards such as cholera, diarrhoea and other water borne diseases. The health practitioners and government in these states should make contingency plans in the event of disease outbreak.



3.11 Disaster Management

This year's forecast is projecting a normal to below-normal rainfall across the country. Areas where above normal rainfall is expected are Sokoto, Yola, Shaki, and Abeokuta. Emergency managers should use this information to help prepare communities in these areas for the usual aftermath of excessive rainfall like flooding. Also, wet spells and flash flood can occur in areas with likelihood of normal to below-normal rainfall.

Other disasters may arise from possible strong and gusty winds and lightening especially at the onset and cessation periods of the rains. The

southernmost areas (fig 18b) will be characterized with more violent thunderstorm during these two periods. Areas vulnerable to dry spells in 2014 are Maiduguri, Potiskum, Yelwa, Bida, Minna, Lafia, Ibi, and Makurdi. These places are expected to have below normal rainfall.

There is strong possibility of wildfire affecting places in the North during the hot season (January – April); adequate sensitization measures should be given to the public to avoid practices that can fire trigger outbreaks.



3.12 Communication

Extreme weather and climate events like high temperatures, lightning, thunderstorms and strong winds have been found to significantly affect signal quality as well as communications infrastructure particularly during the onset and cessation periods in the season.

Telecommunication infrastructures were among the worst hit following the first rainfall in 2012 in Lagos which resulted in loss of lives.

In 2014, the cessation period is predicted to be very active particularly in the southern parts of the country. The Nigerian Communication Commission (NCC) and the telecommunications operators need to factor the forecast information contained in the 2014 SRP in their preparedness especially in areas that are prone to strong winds and heavy rainfall.



4.0 2014 RAINFALL PREDICTION TABLES

TABLE 1: A DETAILED STATION-BY-STATION RESULTS OF LIKELY RAINFALL ONSET DATE, CESSATION DATE, LENGTH OF RAINY SEASON AND SEASONAL AMOUNT OF RAINFALL

Station	Onset		End Of Season		Length of Season		Seasonal Rainfall	
	Likely	ME Days	Likely	ME Days	Likely	ME Days	Likely	ME mm
POR	6-Mar	1	19-Dec	3	283	4	2212	88
CAL	9-Mar	2	28-Dec	1	290	4	2761	91
UYO	12-Mar	3	21-Dec	4	278	4	2232	54
OWE	12-Mar	2	13-Dec	3	273	5	2117	105
WAR	6-Mar	1	24-Dec	3	280	4	2473	71
IKO	18-Mar	3	29-Nov	2	247	5	2211	35
AWK	25-Mar	3	26-Nov	4	226	7	1790	75
BEN	9-Mar	2	17-Dec	5	272	10	2096	111
ENU	31-Mar	3	25-Nov	3	237	6	1610	50
IKE	14-Mar	3	21-Dec	3	263	9	1401	105
OGO	11-Apr	2	12-Dec	6	232	7	1779	120
ASA	31-Mar	2	17-Dec	2	253	6	1681	61
IJE	27-Mar	2	24-Dec	2	271	3	1494	82
OND	9-Mar	2	17-Dec	4	263	4	1551	42
ABE	14-Mar	3	5-Dec	6	249	6	1353	93
AKU	17-Mar	2	10-Dec	4	260	6	1430	23
IBA	17-Mar	3	5-Dec	6	250	6	1190	65
MAK	20-Apr	2	22-Nov	5	203	7	1046	71
LOK	15-Apr	2	18-Nov	5	210	5	1053	53
OSG	22-Mar	2	20-Dec	2	266	4	1336	46
ISE	1-Apr	2	15-Dec	2	260	6	1193	63
IBI	29-Apr	3	7-Nov	2	178	6	921	28
SHA	28-Mar	3	4-Dec	3	240	8	1283	30
ILO	17-Apr	2	15-Nov	4	208	3	1128	66
LAF	21-Apr	1	17-Nov	3	204	5	1179	96
ABU	21-Apr	1	24-Nov	2	219	3	1464	47
YOL	8-May	2	9-Nov	2	177	5	930	40
MIN	5-May	1	21-Nov	1	195	5	1157	50
BID	4-May	1	17-Nov	1	193	3	1058	43
JOS	24-Apr	1	3-Nov	3	192	4	1270	26
GOM	28-May	2	31-Oct	1	156	2	879	47
BAU	27-May	2	30-Oct	1	156	2	965	63
KAD	4-May	1	16-Nov	3	193	5	1118	45
YEL	22-May	1	16-Nov	3	174	5	875	38
ZAR	8-May	3	23-Oct	2	160	5	1065	53
POT	2-Jun	3	29-Oct	2	142	6	585	45
MAI	25-May	4	3-Nov	3	153	4	540	47
KAN	25-May	3	27-Oct	3	159	7	931	114
GUS	13-May	2	23-Oct	3	152	6	921	74
NGU	15-Jun	3	21-Oct	3	129	7	393	36
SOK	2-Jun	3	12-Oct	3	134	2	669	55
KAT	12-Jun	3	4-Oct	2	107	6	562	65

4.1 TABLE2: A DETAILED PREDICTION OF THE ONSET DATES, CESSATION DATES, LENGTH OF RAINY SEASON AND SEASONAL RAINFALL AMOUNT IN 2014 FOR 372 CITIES.

State	City	Long	Lat	Onset date	Season end	Season Length Days	Annual Rainfall mm
ABIA	Aba	07.35	05.10	5-Mar	22-Dec	282	2458
	Bende	07.63	05.55	10-Mar	18-Dec	273	2254
	Uzoakali	07.56	05.63	11-Mar	17-Dec	271	2220
	Ukwa West	07.23	04.97	3-Mar	23-Dec	285	2519
	Lekwesi	07.45	05.97	15-Mar	15-Dec	265	2076
	Igbere	07.65	05.71	12-Mar	17-Dec	270	2185
	Isiukwuato	07.46	05.76	13-Mar	16-Dec	269	2164
	Abiriba	07.73	05.70	12-Mar	17-Dec	270	2190
	Arochukwu	07.90	05.40	9-Mar	20-Dec	274	2300
	Umuahia	07.48	05.52	10-Mar	18-Dec	274	2268
ANAMBRA	Ihiala	05.30	06.30	19-Mar	12-Dec	258	1944
	Agulu	06.86	05.78	13-Mar	16-Dec	269	2155
	Nnewi	06.92	06.02	16-Mar	14-Dec	264	2056
	Ozubulu	06.85	05.95	15-Mar	15-Dec	265	2084
	Okija	06.84	05.91	15-Mar	15-Dec	266	2101
	Aguleri	06.88	06.33	20-Mar	12-Dec	258	1932
	Otuocha	06.85	06.34	20-Mar	11-Dec	257	1928
	Ogbaru	06.70	05.90	15-Mar	14-Dec	265	2125
	Agidi	06.89	06.14	17-Mar	13-Dec	261	2007
	Onitsha	06.78	06.15	31-Mar	17-Dec	253	1681
EBONYI	Awka	06.20	07.07	25-Mar	26-Nov	226	1790
	Abakaliki	06.33	08.08	10-Apr	27-Nov	223	1349
	Ezzagu	08.13	06.34	20-Mar	11-Dec	257	1928
	Odum Effium	08.03	06.74	25-Mar	8-Dec	250	1778
	Ngbo	08.00	06.45	21-Mar	10-Dec	255	1886
	Amagu	07.58	05.87	14-Mar	15-Dec	267	2118
	Echialike	08.22	06.20	18-Mar	13-Dec	260	1983
	Onueke	08.02	06.13	17-Mar	13-Dec	262	2011
	Afikpo	05.88	07.91	8-Apr	28-Nov	226	1398
	Enugu	07.00	06.50	31-Mar	25-Nov	237	1610

IMO	Udi	07.41	06.32	20-Mar	12-Dec	258	1936
	Igbo Eze	07.40	06.86	26-Mar	7-Dec	247	1735
	Agbani	07.55	06.32	20-Mar	12-Dec	258	1936
	Ohali	07.30	06.20	18-Mar	13-Dec	260	1983
	Ikem	07.72	06.78	25-Mar	8-Dec	249	1764
	Aniri Enugu	07.10	06.40	20-Mar	12-Dec	258	1950
	Ukehe	07.41	06.55	22-Mar	10-Dec	253	1848
	Ezeagu	07.73	06.27	19-Mar	12-Dec	259	1956
	Ozalla	07.47	06.30	19-Mar	12-Dec	258	1944
	Emene	07.58	06.47	21-Mar	10-Dec	255	1879
EKITI	Oji River	07.27	06.25	19-Mar	12-Dec	259	1964
	Nsukka	06.85	07.38	2-Apr	3-Dec	237	1559
	Awgu	06.07	07.47	3-Apr	2-Dec	235	1531
	Okigwe	05.83	07.35	1-Apr	3-Dec	238	1569
	Ehime	07.31	05.67	12-Mar	17-Dec	271	2202
	Oguta	06.81	05.71	12-Mar	17-Dec	270	2185
	Arondizuogu	07.10	05.85	14-Mar	16-Dec	267	2126
	Orlu	07.04	05.80	13-Mar	16-Dec	268	2147
	Aboh Mbaise	07.23	05.46	9-Mar	19-Dec	275	2294
	Umuduru	07.25	05.68	12-Mar	17-Dec	271	2198
LAGOS	Mbaise	07.30	05.50	9-Mar	20-Dec	274	2305
	Etiti	07.35	05.62	11-Mar	18-Dec	272	2224
	Uruala	07.10	05.85	14-Mar	16-Dec	267	2126
	Mgbirichi	06.95	05.36	8-Mar	20-Dec	277	2339
	Owerri	07.03	05.48	12-Mar	13-Dec	273	2117
	Mbieri	07.10	05.60	13-Mar	15-Dec	260	2100
	Ado Ekiti	05.20	07.60	4-Apr	1-Dec	233	1490
	Oye	05.33	07.80	7-Apr	29-Nov	229	1430
	Efon	05.23	07.63	5-Apr	30-Nov	232	1481
	Ekiti East	05.55	07.65	5-Apr	30-Nov	232	1475
LAGOS	Irepodun	04.79	07.95	9-Apr	28-Nov	226	1386
	Usi Ekiti	05.18	07.84	7-Apr	29-Nov	228	1418
	Ifelodun	05.04	07.50	3-Apr	2-Dec	235	1521
	Ise/orun	05.43	07.46	3-Apr	2-Dec	235	1534
	Ikere Ekiti	05.22	07.50	3-Apr	2-Dec	235	1521
	Ilawe Ekiti	05.05	07.37	1-Apr	3-Dec	237	1563
	Ikeja	03.33	06.58	14-Mar	21-Dec	263	1401

OGUN	Ikorodu	03.50	06.60	23-Mar	9-Dec	252	1830
	Badagry	02.88	06.37	20-Mar	11-Dec	257	1917
	Oshodi	03.50	06.30	19-Mar	12-Dec	258	1944
	Marine	03.25	06.26	19-Mar	12-Dec	259	1960
	Roof	03.06	06.58	23-Mar	9-Dec	253	1837
	Epe	03.98	06.56	23-Mar	10-Dec	253	1845
	Ajah	03.57	06.47	21-Mar	10-Dec	255	1879
	Yaba	03.38	06.51	22-Mar	10-Dec	254	1863
	Egbeda	03.29	06.59	23-Mar	9-Dec	253	1834
	Agbara	03.09	06.51	22-Mar	10-Dec	254	1863
	Ikotun	03.30	06.51	22-Mar	10-Dec	254	1863
	Apapa	03.37	06.45	21-Mar	10-Dec	255	1886
	Agege	03.33	06.62	23-Mar	9-Dec	252	1822
	Ijebu-Ode	03.93	06.83	27-Mar	24-Dec	271	1494
	Ayetoro	03.03	07.23	31-Mar	4-Dec	240	1608
	Abigi	04.33	06.54	22-Mar	10-Dec	254	1852
	Ijebu-Igbo	04.00	06.95	27-Mar	6-Dec	245	1704
	Ilaro	03.02	06.89	27-Mar	7-Dec	247	1725
	Eruwa	03.50	07.40	2-Apr	2-Dec	237	1553
	Otta	03.30	06.68	24-Mar	9-Dec	251	1800
ONDO	Abeokuta	03.33	07.20	14-Mar	5-Dec	249	1353
	Sagamu	03.63	06.83	26-Mar	7-Dec	248	1746
	Akure	05.30	07.20	17-Mar	10-Dec	260	1430
	Ondo	04.83	07.10	9-Mar	17-Dec	263	1551
	Owo	05.58	07.18	30-Mar	4-Dec	241	1625
	Opuba	04.90	06.05	16-Mar	14-Dec	263	2044
	Okitipupa	04.70	06.50	22-Mar	10-Dec	254	1867
	Araromi	04.50	06.60	23-Mar	9-Dec	252	1830
	Ilawe	05.06	07.40	2-Apr	2-Dec	237	1553
	Ikare Akoko	05.80	07.50	3-Apr	2-Dec	235	1521
OSUN	Kajola Owena	05.00	07.20	30-Mar	4-Dec	240	1618
	Owo	05.58	07.18	30-Mar	4-Dec	241	1625
	Ila	04.90	08.00	9-Apr	27-Nov	225	1372
	Oshogbo	04.50	07.82	22-Mar	20-Dec	266	1336
	Ilesa	04.73	07.62	4-Apr	30-Nov	232	1484
	Ile Ife	04.55	07.47	3-Apr	2-Dec	235	1531

OYO	Ijebu Jesa	04.82	07.68	5-Apr	30-Nov	231	1466
	Okeigbo	04.70	07.16	30-Mar	4-Dec	241	1632
	Ikirun	04.70	07.90	8-Apr	28-Nov	227	1400
	Ede	04.43	07.73	6-Apr	30-Nov	230	1451
	Ejigbo	04.32	07.90	8-Apr	28-Nov	227	1400
	Ikirun	04.70	07.90	8-Apr	28-Nov	227	1400
	Iwo	04.18	07.63	5-Apr	30-Nov	232	1481
	Shaki	03.47	08.35	28-Mar	4-Dec	240	1283
	Iseyin	03.60	07.97	1-Apr	15-Dec	260	1193
	Ogbomoso	04.25	08.14	11-Apr	26-Nov	222	1333
AKWA IBOM	Oyo	03.93	07.84	7-Apr	29-Nov	228	1418
	Kishi	03.85	09.08	22-Apr	18-Nov	203	1103
	Oke- Ile	03.02	07.93	8-Apr	28-Nov	226	1392
	Igboho	03.75	08.83	19-Apr	20-Nov	208	1159
	Ibadan	03.90	07.43	17-Mar	5-Dec	250	1190
	Eket	07.95	04.40	25-Feb	28-Dec	296	2799
	Abak	07.78	04.99	3-Mar	23-Dec	284	2509
	Etinan	07.86	04.85	2-Mar	24-Dec	287	2576
	Ikot-Abasi	07.57	04.58	27-Feb	26-Dec	292	2709
	Mkpat-Enin	07.75	04.75	29-Feb	25-Dec	289	2625
BAYELSA	Oron	08.24	04.83	1-Mar	24-Dec	287	2586
	Ikot Ekpene	07.70	05.18	6-Mar	21-Dec	280	2421
	Uyo	07.92	05.05	12-Mar	21-Dec	278	2232
	Yenogoa	06.25	04.92	2-Mar	24-Dec	286	2543
	Amassoma	06.11	04.97	3-Mar	23-Dec	285	2519
	Oduobori	06.06	05.15	5-Mar	22-Dec	281	2435
	Ogbia	06.50	04.40	25-Feb	28-Dec	296	2799
	Sagbama	06.21	05.17	6-Mar	21-Dec	281	2425
	OGBOINBIRI	05.97	04.82	1-Mar	24-Dec	287	2591
	Nembe	06.37	04.48	26-Feb	27-Dec	294	2759
CROSS RIVER	Brass	06.25	04.30	24-Feb	29-Dec	298	2851
	Calabar	08.35	04.97	9-Mar	28-Dec	290	2761
	Ikom	08.72	05.97	18-Mar	29-Nov	247	2211
	Akamkpa	08.35	05.32	7-Mar	20-Dec	278	2357
	Obubra	08.33	06.10	17-Mar	13-Dec	262	2023
	Obudu	09.17	06.65	24-Mar	9-Dec	251	1811

DELTA	Otu	08.11	05.29	7-Mar	20-Dec	278	2370
	Ugep	08.07	05.82	13-Mar	16-Dec	268	2139
	Ogoja	08.80	06.70	11-Apr	12-Dec	232	1779
	Asaba	06.82	06.23	31-Mar	17-Dec	253	1681
	Abraka	06.10	05.79	13-Mar	16-Dec	268	2151
	Burutu	05.50	05.35	8-Mar	20-Dec	277	2343
	Kwale	06.44	05.72	12-Mar	17-Dec	270	2181
	Ozoro	06.22	05.54	10-Mar	18-Dec	273	2259
EDO	Ughelli	05.99	05.51	10-Mar	19-Dec	274	2272
	Sapele	05.88	05.67	12-Mar	17-Dec	271	2202
	Warri	05.73	05.52	6-Mar	24-Dec	280	2473
	Benin	05.60	06.33	9-Mar	17-Dec	272	2096
	Abudu	06.03	06.30	19-Mar	12-Dec	258	1944
	Agenebode	06.69	07.11	29-Mar	5-Dec	242	1649
	Ozalla	06.02	06.80	25-Mar	7-Dec	248	1757
	Siluko	05.16	06.53	22-Mar	10-Dec	254	1856
RIVERS	Uromi	06.33	06.71	24-Mar	8-Dec	250	1789
	Auchi	07.07	06.25	19-Mar	12-Dec	259	1964
	Port Harcourt	07.12	04.85	6-Mar	19-Dec	283	2212
	Ahoada	06.65	05.09	5-Mar	22-Dec	282	2462
	Bori	07.37	04.68	29-Feb	26-Dec	290	2659
	Buguma	06.86	04.74	29-Feb	25-Dec	289	2630
	Elele	06.82	05.10	5-Mar	22-Dec	282	2458
	Degema	06.77	04.77	1-Mar	25-Dec	288	2615
ADAMAWA	Omoku	06.65	05.34	8-Mar	20-Dec	277	2348
	Rumoudogo	06.79	04.92	2-Mar	24-Dec	286	2543
	Opobo	07.55	04.62	28-Feb	26-Dec	291	2689
	Bonny	07.15	04.42	25-Feb	28-Dec	295	2789
	Okrika	07.08	04.74	29-Feb	25-Dec	289	2630
	Mayo Belwa	12.03	09.03	22-Apr	18-Nov	204	1114
	Hong	12.55	10.14	5-May	9-Nov	182	911
	Girei	12.33	09.22	24-Apr	17-Nov	201	1074
	Yola	12.47	09.23	8-May	9-Nov	177	930
	Lamurde	11.47	09.60	29-Apr	14-Nov	193	1000
	Mubi	13.25	10.27	7-May	8-Nov	180	892
	Jada	12.10	08.72	18-Apr	21-Nov	210	1185
	Gombi	12.43	10.09	5-May	9-Nov	183	918
	Furfore	12.34	09.13	23-Apr	18-Nov	202	1092

BAUCHI	Michika	13.23	10.37	8-May	7-Nov	178	879
	Madagali	13.63	10.88	14-May	3-Nov	168	819
	Darazo	10.24	10.59	11-May	5-Nov	174	851
	Alkaleri	10.25	10.32	7-May	7-Nov	179	885
	Toro	09.04	10.03	4-May	10-Nov	185	928
	Bauchi	09.82	10.28	27-May	30-Oct	156	965
	Jama'are	09.56	11.39	21-May	29-Oct	158	775
	Misau	10.28	11.18	18-May	31-Oct	162	791
BORNO	Azare	11.67	10.17	6-May	9-Nov	182	907
	Katagum	10.21	12.17	30-May	23-Oct	142	741
	Ningi	09.34	11.04	16-May	1-Nov	165	803
	Warji	09.45	11.11	17-May	1-Nov	163	797
	Bama	11.31	13.41	14-Jun	12-Oct	118	765
	Askira/ Uba	10.38	12.58	4-Jun	19-Oct	134	738
	Gwoza	11.05	13.14	11-Jun	14-Oct	123	752
	Maiduguri	13.08	11.85	25-May	3-Nov	153	540
GOMBE	Kwaya Kusar	10.30	11.50	22-May	28-Oct	156	768
	Biu	10.58	12.18	30-May	23-Oct	142	741
	Kukawa	12.92	13.57	16-Jun	11-Oct	115	775
	Damboa	11.09	12.45	2-Jun	20-Oct	137	738
	Monguno	12.40	13.36	14-Jun	12-Oct	119	762
	Dikwa	12.10	13.54	16-Jun	11-Oct	115	773
	Billiri	11.09	09.50	27-Apr	14-Nov	195	1018
	Gombe	11.17	10.28	28-May	31-Oct	156	879
TARABA	Akko	10.57	10.17	6-May	9-Nov	182	907
	Dukku	10.46	10.49	10-May	6-Nov	175	863
	Nafada	11.10	11.32	20-May	30-Oct	159	780
	Funakaye	11.10	10.17	6-May	9-Nov	182	907
	Yamaltu	11.30	10.14	5-May	9-Nov	182	911
	Shomgom	11.13	09.39	26-Apr	15-Nov	197	1040
	Kwami	11.15	10.30	7-May	8-Nov	179	888
	Bali	10.57	07.51	3-Apr	1-Dec	234	1518
	Gashaka	11.29	07.21	30-Mar	4-Dec	240	1615
	Zing	11.45	08.59	16-Apr	22-Nov	213	1216
	Karim Lamido	11.11	09.19	24-Apr	17-Nov	201	1080
	Ibi	09.75	08.18	29-Apr	7-Nov	178	921
	Donga	10.02	07.43	2-Apr	2-Dec	236	1543

YOBE	Wukari	07.87	09.77	1-May	12-Nov	190	970
	Gembu	06.70	11.25	19-May	30-Oct	160	786
	Lau	11.16	09.12	23-Apr	18-Nov	203	1095
	Gassol	10.32	08.24	12-Apr	25-Nov	220	1306
	Gujba	11.56	11.30	19-May	30-Oct	159	782
	Yusufari	11.42	13.06	10-Jun	15-Oct	125	748
	Jakusko	10.14	12.22	31-May	22-Oct	141	740
	Nguru	10.46	12.88	15-Jun	21-Oct	129	393
	Potiskun	11.03	11.70	2-Jun	29-Oct	142	585
	Fika	11.18	11.17	18-May	31-Oct	162	792
KWARA	Damaturu	11.75	11.95	27-May	25-Oct	147	747
	Geidam	11.55	12.53	3-Jun	20-Oct	135	738
	Machina	09.59	13.03	10-Jun	15-Oct	125	747
	Yunusari	11.44	13.07	10-Jun	15-Oct	125	749
	Ilorin	04.54	08.89	17-Apr	15-Nov	208	1128
	Lafiagi	05.41	08.85	20-Apr	20-Nov	208	1154
	Offa	04.72	08.15	11-Apr	26-Nov	222	1330
	Ijara Isin	05.02	08.25	12-Apr	25-Nov	220	1303
	Omu Aran	05.09	08.14	11-Apr	26-Nov	222	1333
	Osi	05.23	08.08	10-Apr	27-Nov	223	1349
KOGI	Share	08.82	04.98	3-Mar	23-Dec	284	2514
	Pategi	05.76	08.72	18-Apr	21-Nov	210	1185
	Kaiama	03.95	09.61	29-Apr	13-Nov	193	998
	Oke Oyi	08.58	04.72	29-Feb	25-Dec	289	2639
	Lokoja	06.74	07.80	15-Apr	18-Nov	210	1053
	Okene	06.23	07.55	4-Apr	1-Dec	234	1506
	Idah	06.73	07.11	29-Mar	5-Dec	242	1649
	Ajaokuta	06.65	07.56	4-Apr	1-Dec	233	1502
	Ero	06.69	07.58	4-Apr	1-Dec	233	1496
	Imbaka	06.67	06.55	22-Mar	10-Dec	253	1848
PLATEAU	Amabo	06.72	06.63	23-Mar	9-Dec	252	1819
	Ogwo	06.65	06.75	25-Mar	8-Dec	249	1775
	Onyedega	06.67	06.88	26-Mar	7-Dec	247	1728
	Kabba	06.07	07.84	7-Apr	29-Nov	228	1418
	Jos	08.88	09.93	24-Apr	3-Nov	192	1270
	Bokkos	08.99	09.30	25-Apr	16-Nov	199	1057
	Pankshin	09.43	09.33	25-Apr	16-Nov	198	1051

NASARAWA	Langtang	09.80	09.15	23-Apr	17-Nov	202	1088
	Bukuru	08.86	09.77	1-May	12-Nov	190	970
	Mangu	09.14	09.49	27-Apr	15-Nov	195	1020
	Dengi	09.95	09.37	26-Apr	16-Nov	198	1043
	Ganjuwa	10.31	09.44	27-Apr	15-Nov	196	1030
	Kwabzak	09.50	09.13	23-Apr	18-Nov	202	1092
	Yelwa-Shendam	09.66	08.81	19-Apr	20-Nov	209	1163
	Lafia	08.51	08.49	21-Apr	17-Nov	204	1179
	Akwanga	08.41	08.91	20-Apr	19-Nov	207	1141
	Keffi	07.87	08.84	19-Apr	20-Nov	208	1156
BENUE	Wamba	08.60	08.93	20-Apr	19-Nov	206	1136
	Doma	08.36	08.40	14-Apr	24-Nov	217	1264
	Amaku	08.13	08.24	12-Apr	25-Nov	220	1306
	Gidan Rai	08.35	08.06	10-Apr	27-Nov	223	1355
	Bakara	07.49	08.35	13-Apr	24-Nov	218	1277
	Kainyehu	07.14	08.09	10-Apr	26-Nov	223	1347
	Toto	07.08	08.39	14-Apr	24-Nov	217	1266
	Gboko	09.00	07.32	1-Apr	3-Dec	238	1579
	Makurdi	08.54	07.73	20-Apr	22-Nov	203	1046
	Oturkpo	08.14	07.20	30-Mar	4-Dec	240	1618
NIGER	Aliade	08.48	07.30	1-Apr	3-Dec	239	1585
	Oju	07.91	07.38	2-Apr	3-Dec	237	1559
	Ugbopko	07.88	07.66	5-Apr	30-Nov	231	1472
	Wanunne	08.89	07.57	4-Apr	1-Dec	233	1499
	Anyiin	08.58	07.71	6-Apr	30-Nov	230	1457
	Kado	09.72	07.65	5-Apr	30-Nov	232	1475
	Zaki Biam	09.61	07.51	3-Apr	1-Dec	234	1518
	Katsina Ala	09.28	07.16	30-Mar	4-Dec	241	1632
	Kontagora	05.47	10.40	8-May	7-Nov	177	875
	Minna	06.55	09.61	5-May	21-Nov	195	1157
	Bida	06.01	09.07	4-May	17-Nov	193	1058
	Warari	05.32	10.92	15-May	2-Nov	167	815
	Rijau	05.25	11.10	17-May	1-Nov	163	798
	Wushishi	06.11	09.72	30-Apr	13-Nov	191	979
	Duku	04.88	11.20	18-May	31-Oct	161	790
	Kwamba	07.17	09.20	24-Apr	17-Nov	201	1078
	Lapai	06.57	09.05	22-Apr	18-Nov	204	1110
	Kutiwenji	05.68	09.52	28-Apr	14-Nov	195	1015

ABUJA	Baro	06.42	08.64	17-Apr	22-Nov	212	1204
	Abuja	07.48	09.07	21-Apr	24-Nov	219	1464
	Kwali	07.06	08.85	20-Apr	20-Nov	208	1154
	Karshi	07.55	08.82	19-Apr	20-Nov	208	1161
	Gwagwalada	07.09	08.94	21-Apr	19-Nov	206	1134
	Kuje	07.22	08.92	20-Apr	19-Nov	207	1138
	Gwaska	07.28	09.02	22-Apr	19-Nov	205	1116
	Madalla	07.22	09.11	23-Apr	18-Nov	203	1097
	Bwari	07.39	09.28	25-Apr	16-Nov	199	1061
	Abaji	06.94	08.47	15-Apr	23-Nov	215	1246
KEBBI	Tando	06.85	09.20	24-Apr	17-Nov	201	1078
	Sakaba	05.60	11.07	17-May	1-Nov	164	801
	Chinchinna	05.72	11.47	22-May	29-Oct	156	770
	Mahuta	04.97	11.55	22-May	28-Oct	155	765
	Yelwa	04.50	11.00	22-May	16-Nov	174	875
	Maraha	04.73	10.32	7-May	7-Nov	179	885
	Birnin Kebbi	04.20	12.43	2-Jun	20-Oct	137	738
	Argungu	04.52	12.72	6-Jun	18-Oct	131	740
	Jega	04.43	12.20	30-May	22-Oct	142	740
	Gwandu	04.64	12.50	3-Jun	20-Oct	136	738
SOKOTO	Bagizza	04.42	12.97	9-Jun	16-Oct	127	745
	Illo	03.70	11.55	22-May	28-Oct	155	765
	Sakwabe	04.22	13.16	11-Jun	14-Oct	123	752
	Garin Isa	04.58	11.63	23-May	27-Oct	153	761
	Sokoto	05.20	12.92	2-Jun	12-Oct	134	669
	Tungan Mogaji	04.95	12.07	29-May	23-Oct	144	743
	Domawa	04.70	12.35	1-Jun	21-Oct	139	738
	Kurawa	06.36	13.52	16-Jun	11-Oct	116	772
	Gwazange	04.26	13.42	14-Jun	12-Oct	118	766
	Danboka	05.37	13.73	18-Jun	9-Oct	111	787
ZAMFARA	Alikeru	05.99	12.93	8-Jun	16-Oct	127	744
	Iraba	06.28	10.97	15-May	2-Nov	166	810
	Doka Ayi	06.10	11.09	17-May	1-Nov	164	799
	Gusau	06.77	12.17	13-May	23-Oct	152	921
	Donko	05.20	11.75	25-May	26-Oct	151	755
	Galadi	06.43	13.06	10-Jun	15-Oct	125	748
	Zurmi	06.78	12.79	7-Jun	17-Oct	130	741
	Gummi	05.10	12.13	30-May	23-Oct	143	742

KATSINA	Talata Mafara	06.07	12.55	4-Jun	19-Oct	135	738
	Anka	05.93	12.11	29-May	23-Oct	143	742
	Kurua	05.64	12.47	3-Jun	20-Oct	136	738
	Faskari	07.02	11.72	25-May	26-Oct	151	756
	Baure	08.75	12.83	7-Jun	17-Oct	129	742
	Katsina	07.68	13.02	12-Jun	4-Oct	107	562
	Kusada	07.98	12.47	3-Jun	20-Oct	136	738
	Kuka	07.99	13.32	13-Jun	13-Oct	120	760
	Funtua	07.30	11.52	22-May	28-Oct	155	767
	Daura	08.30	13.00	9-Jun	16-Oct	126	746
Kano	Bakori	07.42	11.56	23-May	28-Oct	154	765
	Ruma	07.23	12.87	8-Jun	17-Oct	128	743
	Kurfi	07.48	12.66	5-Jun	18-Oct	133	739
	Runka	07.31	12.45	2-Jun	20-Oct	137	738
	Rogo	07.83	11.57	23-May	28-Oct	154	764
	Dadin Kowa	08.63	10.70	12-May	4-Nov	171	838
	Kachaku	09.26	11.54	22-May	28-Oct	155	766
	Kano	08.53	12.05	25-May	27-Oct	159	931
	Kunchi	08.27	12.50	3-Jun	20-Oct	136	738
	Gaya	09.00	11.83	26-May	26-Oct	149	751
Jigawa	Bagwai	08.14	12.15	30-May	23-Oct	143	741
	Rano	08.57	11.53	22-May	28-Oct	155	766
	Gabasawa	08.92	12.18	30-May	23-Oct	142	741
	Dambarta	08.52	12.43	2-Jun	20-Oct	137	738
	Gwiwa	08.33	12.78	7-Jun	17-Oct	130	741
	Basirka	10.24	11.15	18-May	31-Oct	162	794
	Kila	09.77	11.33	20-May	30-Oct	159	780
	Dutse	11.80	09.33	25-Apr	16-Nov	198	1051
	Amaryawa	08.35	12.56	4-Jun	19-Oct	135	738
	Malaganta	08.28	12.77	6-Jun	18-Oct	130	740
KADUNA	Kazaure	08.40	12.67	5-Jun	18-Oct	132	739
	Hadejia	10.03	12.40	2-Jun	21-Oct	138	738
	Filla	08.57	12.67	5-Jun	18-Oct	132	739
	Gumel	09.37	12.62	5-Jun	19-Oct	133	738
	Babura	09.02	12.77	6-Jun	18-Oct	130	740
	Aujara	09.43	12.05	29-May	24-Oct	145	744
	Makarfi	08.48	09.02	22-Apr	19-Nov	205	1116

Tayu	08.62	09.28	25-Apr	16-Nov	199	1061
Kaduna	07.45	10.60	4-May	16-Nov	193	1118
Zaria	07.75	11.07	17-May	1-Nov	164	801
Anji	08.17	09.20	24-Apr	17-Nov	201	1078
Ijinga	06.22	10.58	11-May	5-Nov	174	852
Kurmin Sauchi	06.98	11.28	19-May	30-Oct	160	783
Bugau	08.38	10.97	15-May	2-Nov	166	810
Kachia	07.95	09.87	2-May	11-Nov	188	953
Birnin Gwari	06.53	10.67	12-May	4-Nov	172	841
Kafanchan	08.28	09.57	28-Apr	14-Nov	194	1005
Saminaka	08.68	10.42	9-May	7-Nov	177	872
Jere	07.44	09.57	28-Apr	14-Nov	194	1005
Gwantu	08.46	09.23	24-Apr	17-Nov	200	1072
Kaura	08.15	10.57	11-May	5-Nov	174	853

5.0 NATIONWIDE CONTACTS FOR NiMeT INFORMATION

S/N	NAMES	STATES	PHONE NUMBER
1.	Mr. G. I. Anyagwa	Abia	08036817446
2.	Mr. C. Igbo	Abuja	08038775707
3.	Mr. A. M. Buba	Adamawa	08058368711
4.	Mr. I. J. Akpan	Akwa Ibom	08037609966
5.	Mr. O. Balogun	Anambra	08034095045
6.	Mr. Yakuribu Samu	Bauchi	08028981497
7.	Mr. W. N. Uriah	Bayelsa	08028693332, 08038822237
8.	Mr. Adaji Idriss	Benue	08164260101
9.	Mr. B. Sule	Borno	08057275915
10.	Mr. E. O. Effiong	Cross River	08023832965, 08064476782
11.	Mr. K. Osawaru	Delta	08023311111
12.	Mr. T. A. Nwaogu	Ebonyi	08130469187
13.	Mr. E. Mmumu	Edo	08077884077
14.	Mr. J. K. Eboh,	Enugu	08034959593
15.	Mrs. F. A. Jimoh,	Ekiti	08053456849
16.	Mr. C. E. Archibong	Gombe	08054415585
17.	Mr. P. N. Orisakwe	Imo	08037119685
18.	Mr. J. O. Noah	Jigawa	08036820716
19.	Mr. I. Shittu	Kaduna	07031651142, 08028720840
20.	Mrs. Olorunleke	Kano	07067220098, 08155627810
21.	Mr. G. M. Eya	Katsina	08032656396
22.	Mr. A. O. Salami	Kebbi	08036208810
23.	Mr. O. A. Osunlalu	Kogi	08036820685, 08024564382
24.	Mrs. A. Z. Ottan	Kwara	08034268943
25.	Mrs T. Eze	Lagos	08038982468,
26.	Mr. E. O. Udezor	Niger	08077185673
27.	Mr. J. I. Azi	Nasarawa	07034634544
28.	Mr. A. D. Ogunleye	Ogun	08080421881
29.	Mr. E. G. Okoghenu	Ondo	08077543106
30.	Mr. F. Olanipekun	Osun	08039732660
31.	Mr. M. A. Olayiwola	Oyo	08034825509
32.	Mr. C. C. Ihekandu	Plateau	08054415845
33.	Mr. I. S. Frank	Rivers	08037650208
34.	Mr. F. A. Umar	Sokoto	08032897645, 08093079412
35.	Mr. P. A. Edoh	Taraba	08066269581, 08054053599
36.	Mr. H. K. Peters	Yobe	07057573007, 08036851974
37.	Mr. W. Ageda	Zamfara	08050449784



Safe Air Space

Weather is a critical factor in Aviation Safety. NiMet therefore provides timely and accurate weather information to ensure that the skies are safe.

NIMET SERVICES

Agriculture is one of the most vulnerable sectors to range vegans of weather and climate. NiMet products and services guide farmer to reduce risk and achieve better yields.



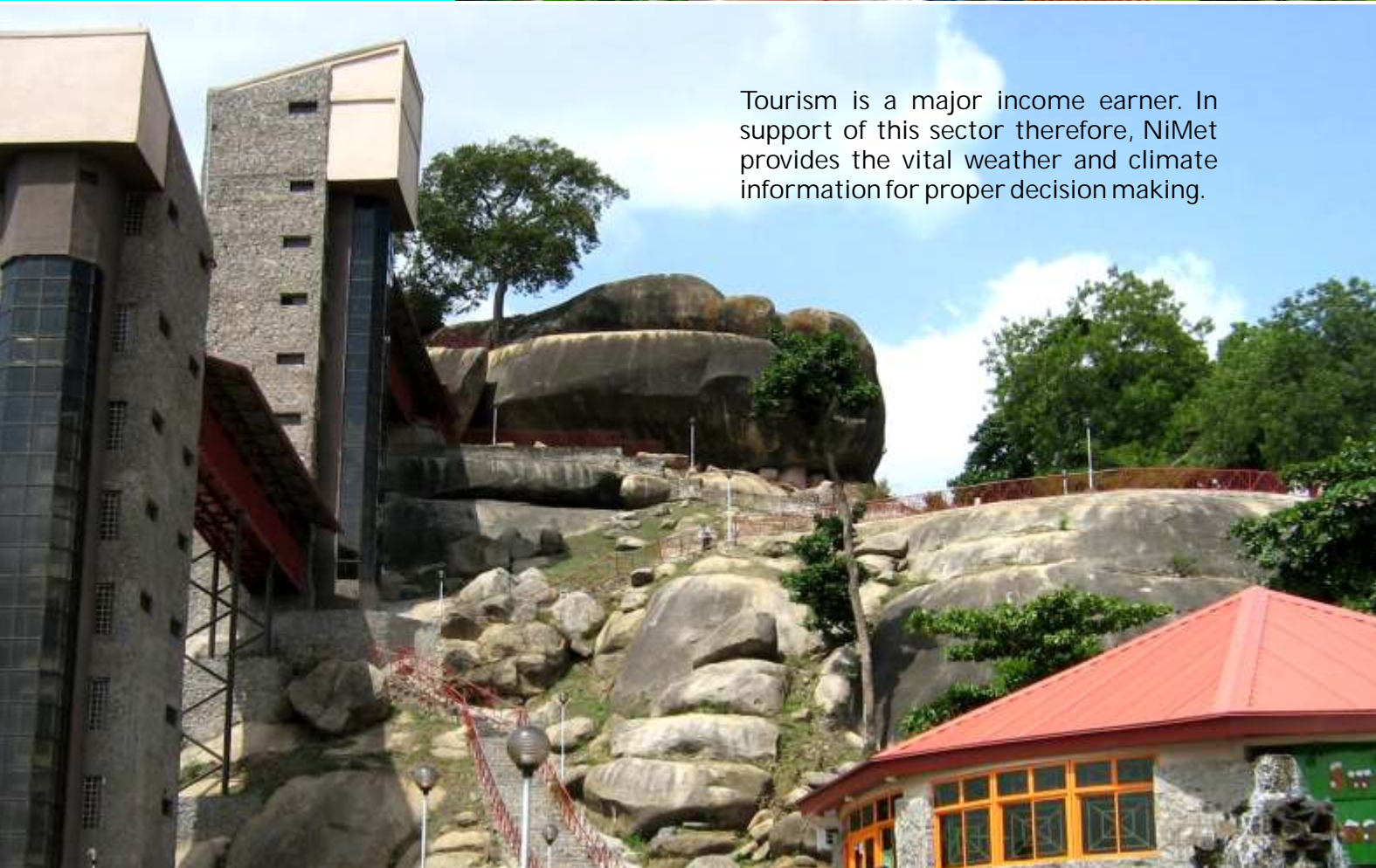
Agriculture

NIMET SERVICES

Tourism



Tourism is a major income earner. In support of this sector therefore, NiMet provides the vital weather and climate information for proper decision making.



NIMET SERVICES



Telecommunications

Weather affects the transmission of telecommunication signals and therefore NiMet's services are vital for design, installation and operation of Telecommunication Networks.



NIMET SERVICES



Construction

Extreme weather event is a high risk factor in the construction industry. Efficient and effective construction management requires timely and accurate weather information which NiMet provides. This will therefore enhance cost effectiveness.

NIMET SERVICES

Disaster Management

Extreme weather and climate events are responsible for about 90% of natural disaster. Most parts of the country are vulnerable to these weather induced phenomena. NiMet provides early warning information for disaster risk reduction and emergency management.

NIMET SERVICES

Marine

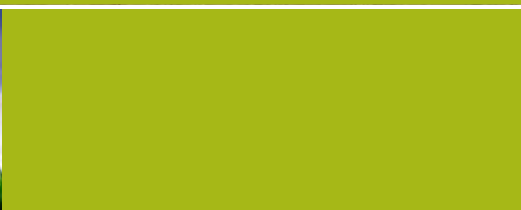
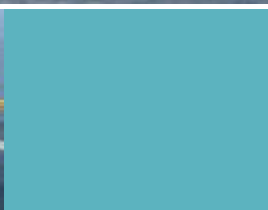
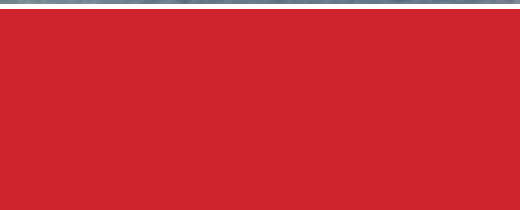


Oil & Gas, Shipping, Fishing and Maritime activities are highly dependent on timely and accurate weather forecast. NiMet provides marine meteorological services to support safe, efficient and cost effective operation in this sector.

Sport



Weather and Climate conditions are major consideration for proper planning and implementation of sporting events. NiMet provides weather forecasts to guide the choice of timing and venue for optimum athlete performance.





Providing weather, climate and
water information for sustainable
development and safety



Contact us at www.nimet-srp.com
for specialised weather and climate information

7.0 GLOSSARY

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| <p>7.1 Agro-meteorological information - Weather and climate information that if applied to guide agricultural activities improves yields and enhance coping strategies against adverse impact of climate-related hazards in the sector</p> <p>7.2 Annual rainfall amount - is the total amount of rainfall observed and recorded in the year under reference.</p> <p>7.3 Cessation-date of rainy season - Cessation date is determined when the available water content at the root zone has dropped to 5%.</p> <p>7.4 Climate change - Is a non-random change in climate that is measured over several decades or longer, which may be due to natural or human-induced causes.</p> <p>7.5 Climate variability - refers to variations in the mean state and other statistics such as standard deviations, the occurrence of extremes etc of the climate on all spatial and temporal scales beyond that of the individual events. Variability may be due to natural internal processes within the climate system or anthropogenic external forcing.</p> <p>7.7 Coastal inundation - Flooding which occurs when water is driven onto land from an adjacent body of water such as the sea or ocean.</p> <p>7.8 Comfort Index - An index of air temperature that provides daily satisfaction with the thermal environment or an index which combines air temperature and relative humidity to determine satisfaction with the thermal environment.</p> <p>7.6 Creeping desertification - A type of land degradation, slowly moving southwards</p> | <p>in the northern hemisphere, in which a relatively dry region becomes increasingly arid, typically losing its water bodies as well as vegetation and wildlife.</p> <p>7.9 Dry season farming- Farming practices sustained by irrigation during period of little or no rainfall.</p> <p>7.10 El Nino - A warming of the Pacific Ocean water near the equator, off the coast of Peru, that typically occurs every 3 - 7 years, and which dictates a shift in normal weather patterns.</p> <p>7.11 ENSO - El Nino - Southern Oscillation; a combination of El-nino features and strength of surface air pressure between the tropical eastern and western Pacific ocean waters, which is usually computed from fluctuation in the surface air pressures between Tahiti and Darwin in Australia.</p> <p>7.12 ENSO - Neutral -normal temperature conditions in the ocean water of the equator off the coast of Peru in South America.</p> <p>7.13 Extreme weather - is an event that is rare at a particular place and time of the year. Extreme weather event would normally be as rare as or rarer than the 10th or 90th percentile of the observed probability density function.</p> <p>7.14 Global warming - An overall increase in the world temperatures, which may be caused by additional heat being trapped by greenhouse gases mostly as a result of human activities.</p> <p>7.15 Green House Effect - The warming generated by the trapping of long-wave radiation (heat) by Green House Gases in the atmosphere.</p> |
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| 7.16 | IPCC – Inter-Governmental Panel on Climate Change. | flowering, breeding, and migration; and how these are influenced by seasonal and inter-annual variations in climate, as well as habitat factor. |
| 7.17 | La Nina – An extensive cooling of the waters in the upper section of the tropical eastern Pacific Ocean | |
| 7.18 | Length of rainy season - is the number of days between the onset and cessation dates of the rainy season. | 7.23 Sea Surface Temperature (SST) anomalies – refers to the deviations from long-term averages in the mean temperature of the ocean in the upper few metres. |
| 7.19 | MDG -Millennium Development Goals. | 7.24 Seasonal Rainfall Prediction (SRP) – Forecast of weather or climate condition for a period or season ranging from about three months to one year. |
| 7.20 | Onset-date of rainy season - is the date at which the available water content of the root zone at the beginning of the cropping season reaches 50%. | 7.25 Tele-connection – describes statistical correlations between weather events that occur at different parts of the world. |
| 7.21 | Perishable goods – Agricultural goods that lose considerable value if delayed in conveyance from the produce point to the desired place of sale. They are goods that go bad rapidly if a weather-controlled preservation technique is not employed. | 7.26 Transformation Agenda - is a summary of how the Federal Government hopes to deliver projects, programmes, and key priority policies, from 2011 to 2015. |
| 7.22 | Phenological information - Is information on periodic plant and animal life cycle of growth such as | 7.27 Vision 20:20:20: Nigeria's Vision to become one of the top twenty (20) advanced nations' economies by the year 2020. |



Let's preserve our environment...