



# 'The role of NiMet in Disaster Risk Management'

A PRESENTATION BY:

NiMet Team

VIRTUAL MEETING  
13 April, 2021



# 1

- NiMet at a Glance





## Our Vision



To be an **effective provider** of Weather and Climate services for safety and sustainable national socio-economic development.

## Our Mission

To **observe** Nigerian Weather and Climate and provide Meteorological, Hydrological and Oceanographic services in support of National needs and international obligations.





# Our Core Mandate

Observing, analyzing, timely and accurate reporting of weather and climate information for socio-economic development and safety of lives and property



# NiMet AT A GLANCE: *Framework for our Existence*

## Structure

*NiMet is a Parastatal of the Federal Ministry of Aviation, providing meteorological services for all sectors of the Nigerian economy*

## Legal establishment

- ✓ of meteorology” (Part III of our Establishment Act 2003)
- ✓ **Meteorological Observation started since 1887**

## Core activities

- ✓ Core activities of NiMet include **observation, analysis and reporting accurately**, the weather and climate conditions of the country at all times.
- ✓ Done through **ground based, upper air, satellite-based observations, modelling, forecasting and now casting** activities



# Archived Weather Observation Records

# Meteorological Observation at Akassa, Nigeria Recorded in February 1887

[illegible]



# NiMet AT A GLANCE: *Certification & Recognition*

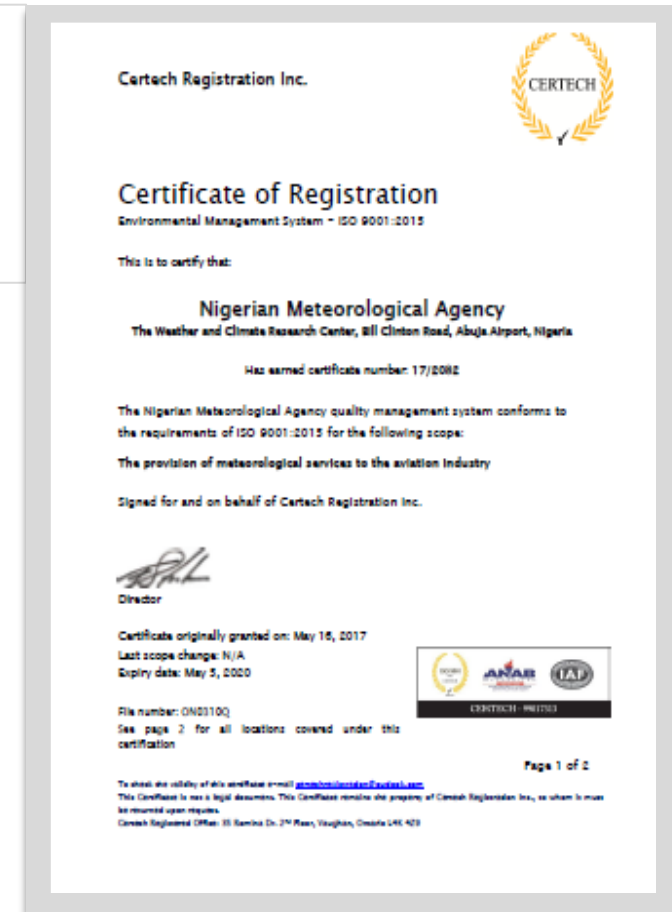
- ✓ Certification for Aeronautical Meteorological Service delivery:  
**ISO 9001:2015** certified in **July 2017**
- ✓ **The 1<sup>st</sup> ever African Country** to have achieved this feat.
- ✓ **NiMet Achieved ISO 9001:2015 re-recertification in Aug 2020.**

*ISO 29990:2010 in August 2019 for training services at the Regional Training Centre, Lagos. 1<sup>st</sup> & only in Africa*

Remodeling the fabrication and **calibration laboratory in readiness for ISO : 17025 certification**

Ranked as the 2<sup>nd</sup> Best MDA in Nigeria by the ICPC in Ethics and Integrity Maintenance (2019).

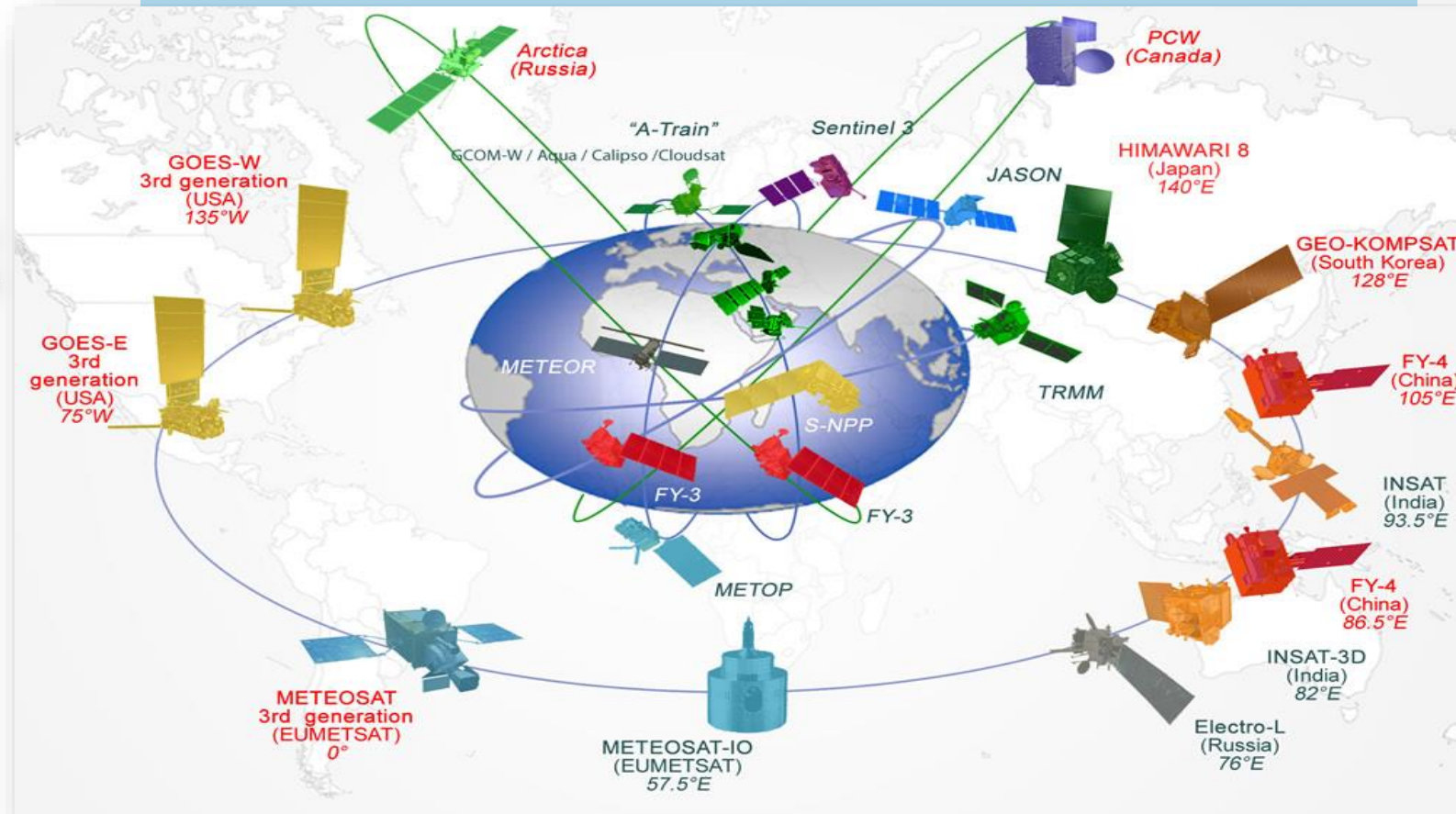
Ranked as the 3<sup>rd</sup> Best MDA in Nigeria with the Most Active and Functional Website (2018).





# SPACE BASED OBSERVATION

Constellation of Meteorological Satellites orbiting the Earth in geostationary, polar orbit, and sun-synchronous modes, collecting meteorological data continuously: **NiMet utilizes products from some of these Satellites**



NiMet

NiMet



# KEY STATISTICS

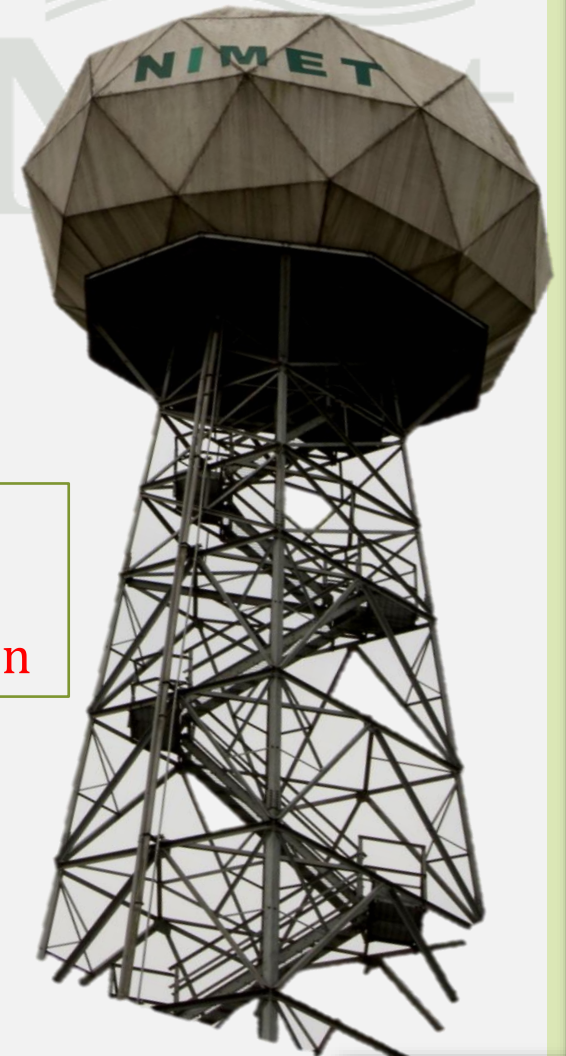
Total staff strength of **1742**

- **54% Meteorologist Cadre**
- **13% Engineering cadre**
- **32% supporting** (Admin, Account, Commercial, Public Relations, Legal)

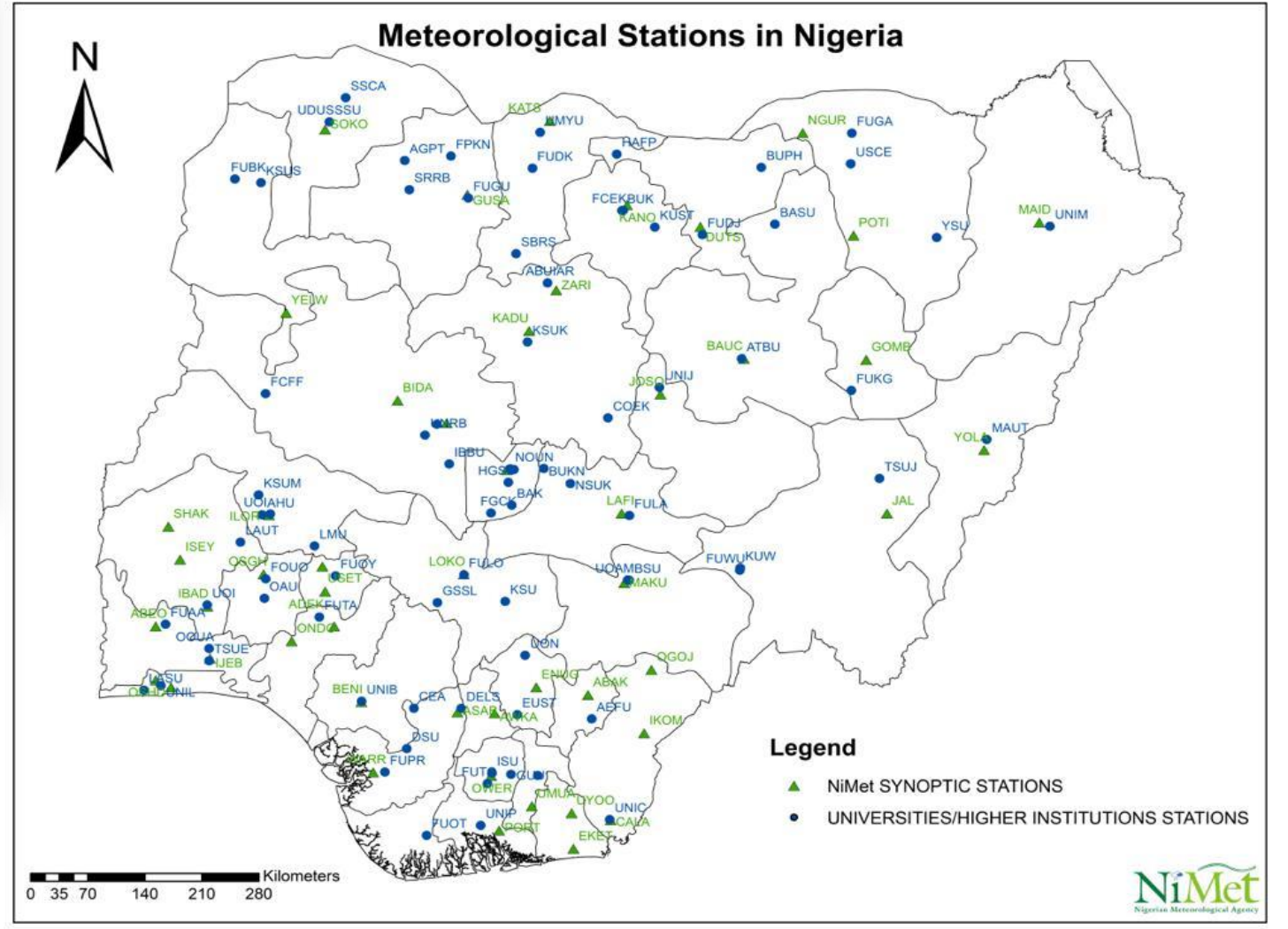
- **6** Zonal offices
- **5** Forecast Offices
- **36** state offices
- **55** synoptic offices
- **8** Marine stations

- A WMO **Regional Training Centre** at Lagos
- A National **Training Institute** at Katsina
- Aggressive staff training to address **attrition**

- **Over 200** Observing stations
- **163** AWS
- **6 Doppler Weather Radar**  
Installations









# RADAR OBSERVATION



Nigerian Meteorological Agency is operating set of S-band Doppler Weather RADARs at **6 locations in the country, namely; Abuja, Kano, Lagos, Maiduguri, Port Harcourt and Yola.** They are currently undergoing upgrades.



# MARINE OBSERVATION

Marine weather observation is a specialized aspect of weather observation for collecting data on the condition of the atmosphere over the sea surface: **We have 8 Marine Met Stations along the Coastline**



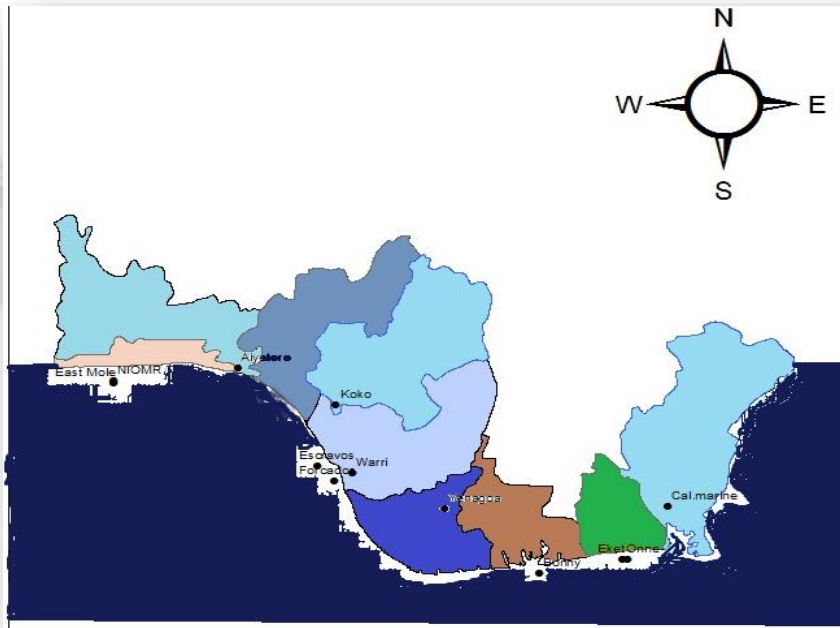
*NiMet's Marine Weather  
Observation Platform, Eket*



*A Marine Weather observer on  
duty*



NiMet also has a data buoy anchored off Lagos coast. Hourly marine weather data obtained from these stations are built into the production of daily marine forecasts



*Coastal Land Station*



*Marine Weather Buoy*



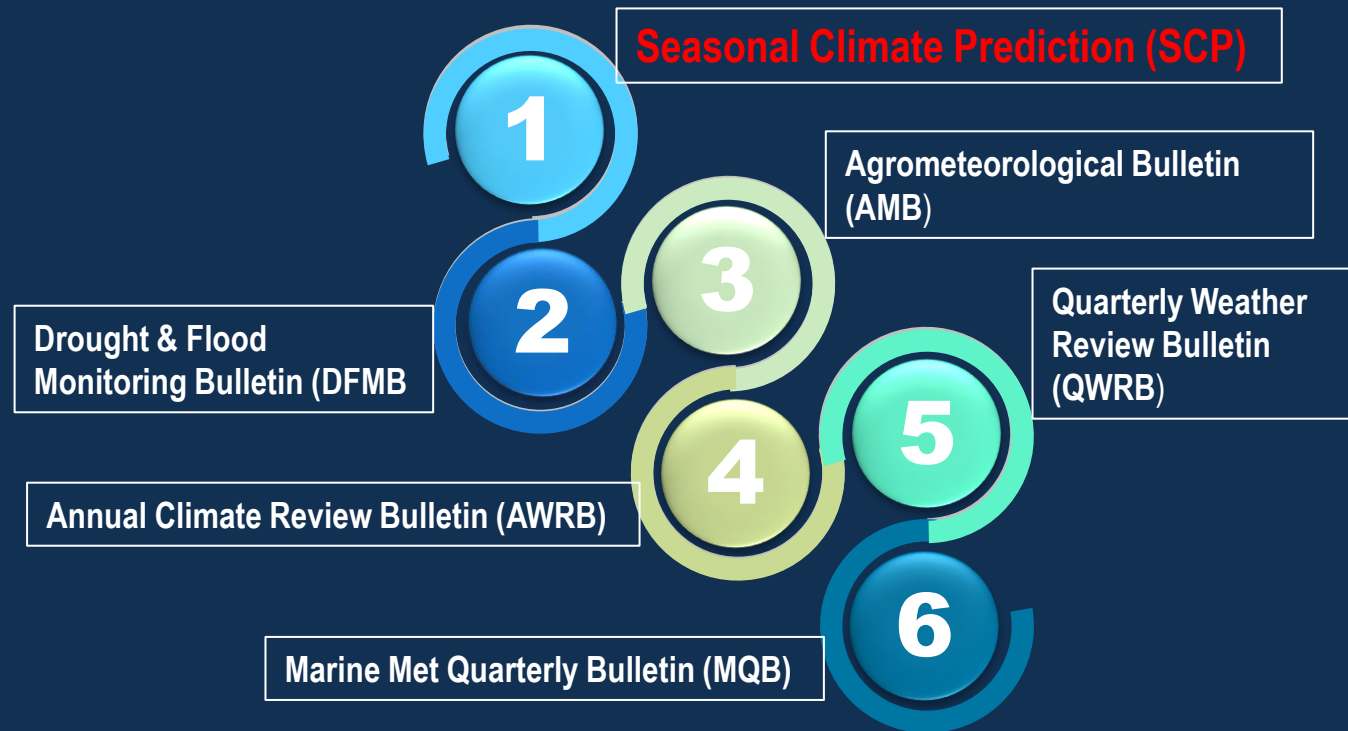
# Daily Public Weather Services in Nigeria & Beyond

**Presently we Provide daily Weather Forecasting Services to Liberia & Sierra Leone** under our Technical Support Program



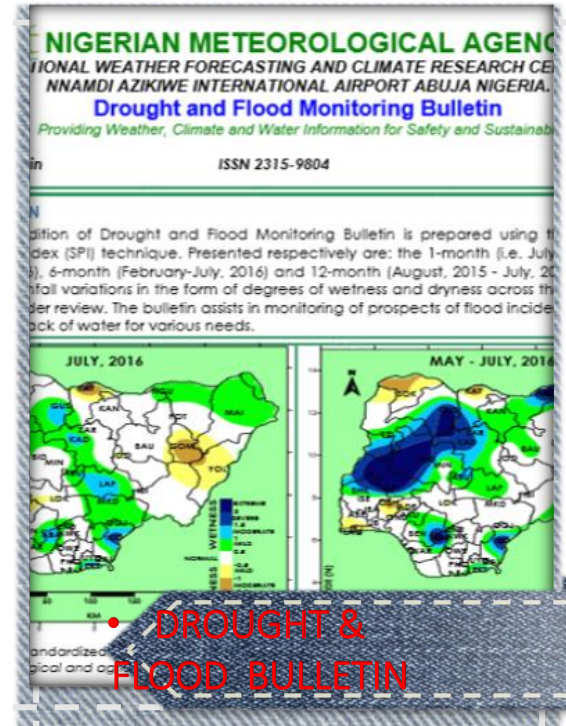
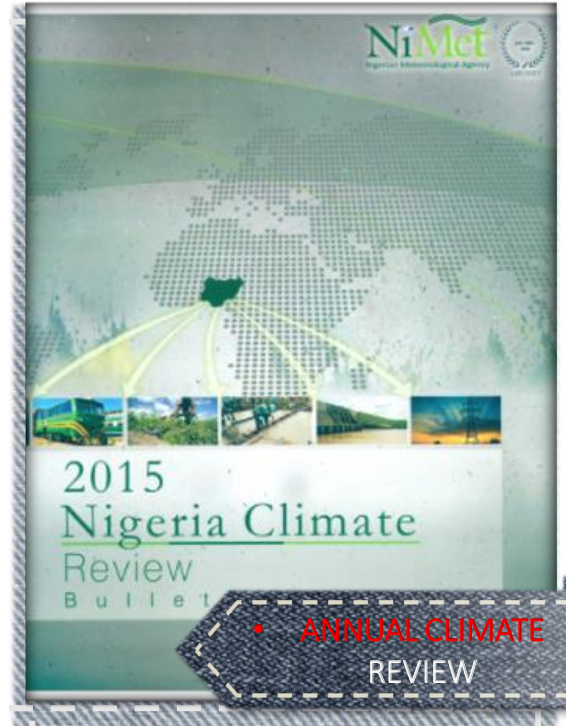
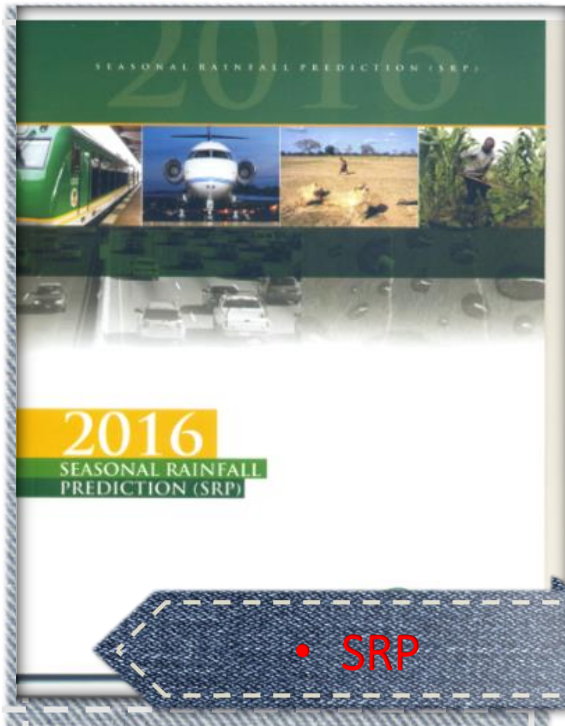


The Agency also provides a range of climate services and products that are designed for **adaptation** and **mitigation** to **climate change** and **variability** in Nigeria



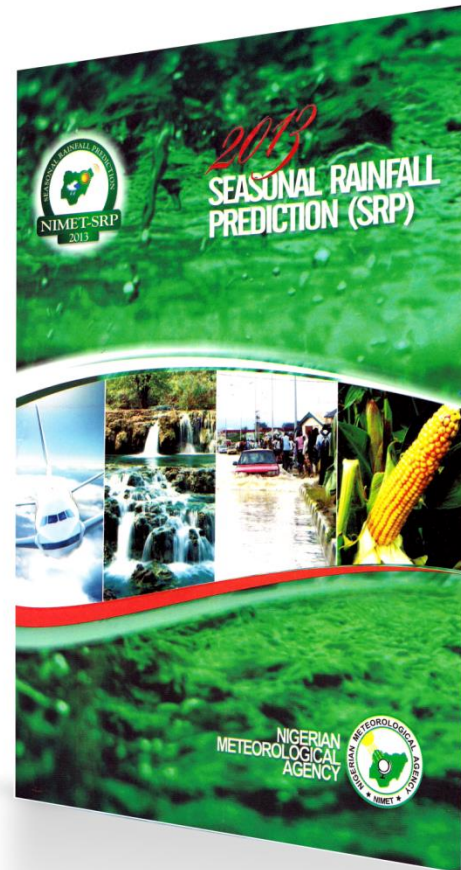


## Some Products

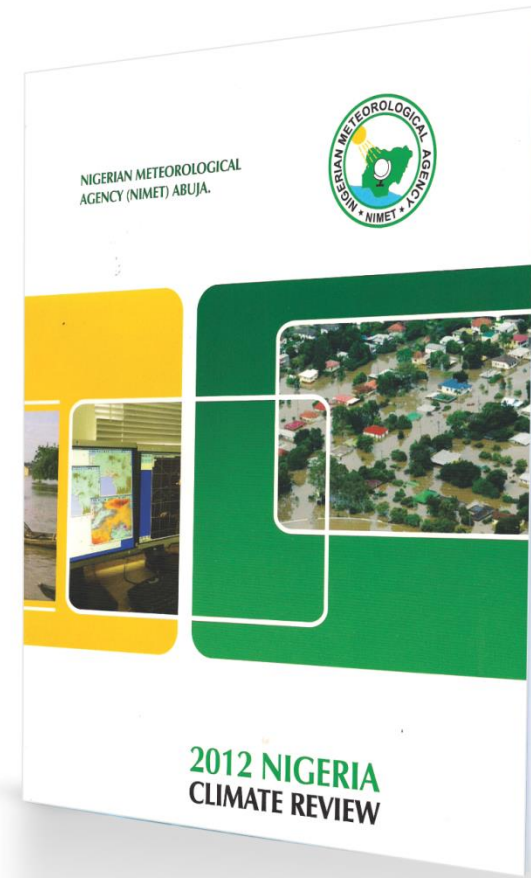




## Some AIS' Products/Publications



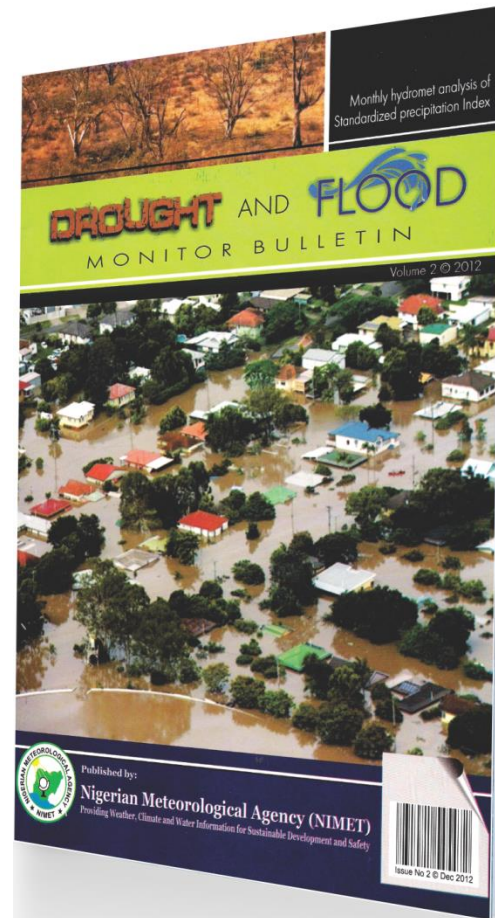
Seasonal Rainfall Prediction



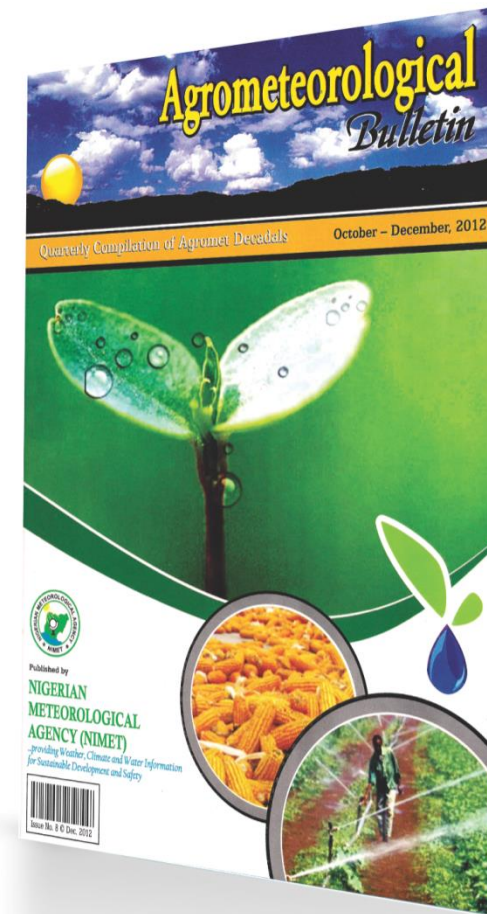
Climate Review Bulletin



## AIS' Products/Publications conts...



**Drought & Flood Monitoring  
Bulletin**



**Agromet Bulletin**



## SECTORS THAT CURRENTLY BENEFIT FROM NIMET'S SERVICES

AVIATION

AGRICULTURE

SECURITY

WATER RESOURCES

ENVIRONMENT

LAND  
TRANSPORT

MARINE/MARITI  
ME

OIL, GAS AND  
ENERGY

Health

Disaster Risk Reduction (DRR)

**PUBLIC WEATHER SERVICE –  
NIGERIA, SIERRA LEONE AND  
LIBERIA**



# Observed Variabilities/Changes over Nigeria

Analyses of temperature and rainfall data of 1911-2000 in three 30 years intervals (i.e. 1911-1940, 1941-1970 & 1971-2000) reveal remarkable changes such as;

1. **Warmer hot season:** March – May has had hot episodes of heat waves as temperature increases of about an average of 0.4-1.5°C with extreme ranges of 2.0 to 3.3°C are being observed across the country. The result is warmer and more frequent hot days & nights over most places.
2. Increase in frequency, duration & intensity of **dry spells**.
3. **Late onset of rain & Early cessation of rain** leading to shortened length of the rainy season,
4. **Pronounced reduction in annual rain in some places (drought)** while a few others maintained high values within the shortened season resulting in (floods) in such places,
5. **Shift in the occurrence of the Little dry season (August break)** from August to well before August, mostly in mid July.



Summary of warm years and standardised maximum temperature anomalies from 1981-2020 ranked in descending order of warming trend.

NIGERIA		Northern Nigeria		Southern Nigeria	
Warm Years	Standardised Anomalies	Warm Years	Standardised Anomalies	Warm Years	Standardised Anomalies
2016	2.8	1987	2.6	2020	3.7
1987	2.7	2016	2.3	2016	2.8
2017	2.4	2017	1.8	2017	2.6
2020	2.3	2013	1.7	1998	2.2
1998	1.6	2005	1.3	1987	2.0
2015	1.5	2015	1.2	2019	1.9
2018	1.5	2003	1.0	2018	1.8
2019	1.5	2018	1.0	2015	1.6
2003	1.1	1996	0.9	2010	1.1
2013	1.1	2006	0.8	2003	1.0
2010	1.0	1998	0.8	2011	0.9
2011	0.8	2019	0.8	1983	0.8
2005	0.8	1990	0.7	1997	0.7
2014	0.6	2010	0.7	2000	0.7
1995	0.5	2020	0.7	1995	0.6
2006	0.5	2011	0.6	2002	0.6
1996	0.4	2014	0.6	2014	0.4
2004	0.4	2004	0.4	1993	0.3
1983	0.4	1993	0.3	2001	0.3
1990	0.4	1995	0.3	2004	0.3
1993	0.3	2009	0.3	1994	0.3
2000	0.3	1984	0.1	2013	0.0
2002	0.3	2007	0.0		
1997	0.3	2002	0.0		
2001	0.1	2000	0.0		
2009	0.1				
1984	0.0				

Summary of the wet years and standardised rainfall anomalies from 1981-2020 ranked in descending order of wetness.

NIGERIA		Northern Nigeria		Southern Nigeria	
Wet Years	Standardised Anomalies	Wet Years	Standardised Anomalies	Wet Years	Standardised Anomalies
2019	3.9	2019	3.7	2019	3.3
2012	2.8	2020	3.2	2012	2.5
2018	1.8	2018	2.7	1995	1.8
2014	1.7	2012	2.3	2011	1.7
1999	1.5	2016	2.1	2014	1.4
2016	1.5	1999	1.9	2008	1.3
2007	1.4	2007	1.8	2009	1.2
1995	1.1	2014	1.6	2013	1.0
2011	1.0	1998	1.4	1999	1.0
2010	1.0	2017	0.9	2010	1.0
2017	1.0	2001	0.9	2006	1.0
2020	1.0	2003	0.8	2018	0.9
2008	1.0	2004	0.8	2007	0.9
2006	1.0	2010	0.7	1991	0.9
2009	1.0	1997	0.7	2017	0.8
2013	0.8	2006	0.6	2016	0.8
1991	0.8	2015	0.5	1996	0.6
1997	0.7	1994	0.4	1990	0.6
1996	0.6	1996	0.4	1997	0.5
2015	0.6	2002	0.4	2015	0.5
2002	0.4	1991	0.3	2002	0.4
2003	0.4	2009	0.2	1988	0.2
2004	0.3	2005	0.2	2003	0.1
1994	0.2	2008	0.1	2000	0.1
2005	0.1	2013	0.1		
1988	0.0	1993	0.1		
2000	0.0				



## Extreme Weather and Climate Events

**Weather** is defined as the condition or state of the atmosphere at a given location and time, while **climate** is the average condition of the atmosphere over a long period of time (usually 30 years (1961 to 1990), as specified by **WMO**

An Extreme Weather Event (EWE) is said to occur if the value of the variable exceeds or falls below a predetermined upper or lower threshold of the normal range. **Droughts, floods, heavy precipitation, heat waves, severe storms**, are common examples of EWE. Climate Change increase the frequency & intensity of EWE





# NIGERIA: QUICK FACTS

## 2012 FLOOD DISASTER:

***363 people killed***

***2.1 million people displaced***

***30 states affected***

***N2.5 trillion economic lost***





# NIGERIA: QUICK FACTS

## 2018 FLOOD DISASTER:

*141 people killed*

*19,369 people displaced*

*27 states affected*













# Opportunities

**TECHNICAL PARTNERSHIP FOR  
IMPROVED SERVICE DELIVERY**





- ❖ **NiMet-WMO METAGRI Project**
- ❖ **State government**
- ❖ NiMet/TAHMO PARTNERSHIP
- ❖ NiMet/UBIMET Partnership
- ❖ NiMet/USAID MARKETS II
- ❖ NiMet/BATNF Collaboration
- ❖ NiMet/WASCAL Collaboration
- ❖ NiMet/KUKUA Partnership
- ❖ NiMet/NIRSAL Partnership
- ❖ Collaboration with 34 Nigerian Universities

NiMet



# Collaboration with Partners

- ✓ **FEDERAL MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT**
- ✓ **NATIONAL EMERGENCY MANAGEMENT AGENCY (NEMA)**
- ✓ **NATIONAL HYDROLOGICAL SERVICES AGENCY (NIHSA)**
- ✓ **INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE (IITA) : Climate Smart Agricultural Practices**
- ✓ **IFAD-CASP PROJECT ON CLIMATE SMART AGRICULTURE**
- ✓ **CENTER FOR DRY-LAND AGRICULTURE BUK**
- ✓ **NATIONAL AGRICULTURAL EXTENSION AND RURAL LIAISON SERVICES**
- ✓ **INSTITUTE OF AGRICULTURAL RESEARCH, ABU ZARIA (Climate Smart Villages)**
- ✓ **AGRIC INSURANCE ORGANIZATIONS & COMPANIES (Weather Index Insurance)**



# NiMet PPP Experience: a) UBIMET

Project: Installation of Lightning and Thunder Detectors in Airports  
Target: 22 Federal Airports, 14 State Airports  
Covered so far: 8 Federal Airports  
Revenue stream: Data sales for aeromet operations



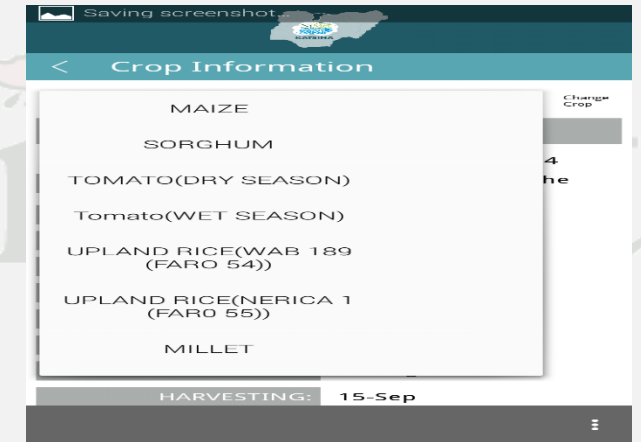
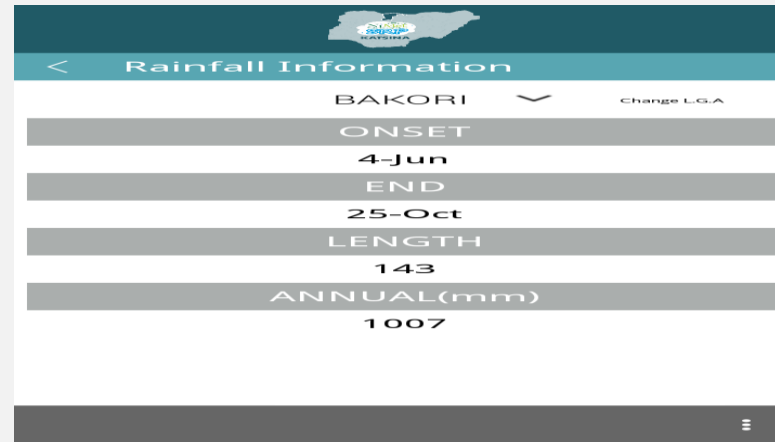
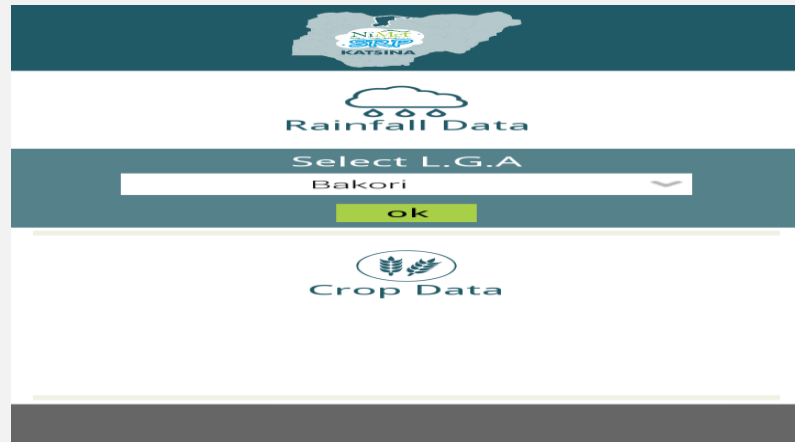


# QMS Technical Support Service In Malawi





# SCP Mobile Phone App & Field Interaction











Met





- **THANK YOU FOR LISTENING**

- **[www.nimet.gov.ng](http://www.nimet.gov.ng)**

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