**CLIMATE OF NIGERIA**

**MAIN OBJECTIVES:** At the end of this lesson students should be able to;

a. Sketch a map showing rainfall distribution across Nigeria.

b. Narrate their variation of temperature across Nigeria.

c. Mention the types of wind in Nigeria.

d. Sketch a map of Nigeria showing the climatic types.

The climate of Nigeria is not uniform everywhere in country.

**RAINFALL DISTRIBUTION IN NIGERIA**

a. Rainfall distribution in Nigeria is not uniform. It is higher in the south because it is near the sea and also due to the effect of the south west trade wind also called the Tropical Maritime Air mass.

b. Rainfall decreases from the South (3000mm) towards the north (300mm).

c. Highlands like; Jos, Adamawa etc, receive higher rainfall than neighboring areas as a result of orographic rainfall.

d. Rainfall varies with season. It is heavier during rainy season (March-October) than in dry season (November-February).

e. There are two (2) peaks of rainfall in the south which is Double Maxima around June/July and September/October. In the North there is only one peak of rainfall (Single Maximum).

**VARIATION OF TEMPERATURE ACROSS NIGERIA**

Temperature is defined as the hotness or coldness of a place. Temperature in Nigeria is not uniform. The following characteristics explain better.

1. Temperature varies from one place to place: it is low in the south (24°c) and high in the North (28°c). It low in the south because of the cooling effect of the Atlantic Ocean.

2. Temperature varies with attitude: places like Jos, Obudu, Adamawa etc have lower temperature (20°c) compared to its neighboring low lands of over 27°c.

3. Temperature varies with season: temperature is usually higher during rainy season and low on the dry season due to the influence of the harmattan.

4. Variation in annual range: the annual range of temperature in the south is between 2.3°c while that of the north is 9°c.

**TYPES OF WIND IN NIGERIA**

Wind is defined as air on motion. There are four (4) local types of winds in Nigeria. They are:

i. Tropical Maritime Air mass (South West Trade Wind)

ii. Tropical Continental Air mass (North East Trade Wind)

iii. Land and Sea Breeze

iv. Equatorial Easterlies

i. **TROPICAL MARITIME:** This wind is responsible for rainy season in Nigeria. The wind becomes warm and moist as it blows across the Atlantic Ocean to the coastlands. Places like Port Harcourt and Warri experience 12 months of rainfall. The rainfall reduces towards the north. Rainfall in the North start around March and ends around October with a short dry period in August called August Break.

ii. **TROPICAL CONTINENTAL AIR MASS:** This wind brings dryness and responsible for the dry season. It blows across the Sahara desert towards Nigeria. Its cold dusty and dry (Harmattan). It starts from November and ends around February.

iii. **EQUATORIAL EASTERLIES:** This wind blows around equator and is influenced by N.E and S.W trader winds. The N.E and S.W trade wind meet along a slanting surface where the continuously rub against each other and the surface is called Inters-tropical Font (ITF). Just above the front where two masses mix up as a result then rubbing is called the Inters-tropical Co mergence Zone (ITCZ) the ITCZ is not fixed it can more north or south depending on which Air mass is stronger or dominant.

NOTE: when Equatorial Easterly winds below S.W trade wind they cause torrential rainfall accompanied with thunder and lightning is called Line squalls.

When Equatorial Easterlies with below N.E trade wind they cause whirling e.g.: cyclical wind call Dust den

iv. **LAND AND SEA BREEZE:** the since are operational only coastal areas like Lagos, Port Harcourt, Warri etc

a. Sea breeze: the sea breeze operates at day time. It result from different I rate of heating and cooling off land and water Bodies. As a result, low pressure develop on land and high pressure develop ore water Bodies during the day. The air over the Land rises and cool current air move from the sea to take the position of rising air on the land. This sea breeze which blows at day time.

**TYPES OF CLIMATE ON NIGERIA**

There are 4 climates types in Nigeria.

1. The sub-equatorial climate.

2. Tropical Hinterland (wet climate)

3. Tropical Continental (dry climate)

4. High plateau climate (Maritime climate)

**SUB-EQUITORIAL CLIMATE:**

a. It is found in the south, in places like Warri, Lagos, Calabar, Port Harcourt etc.

b. It has heavy rainfall of over 2500mm per annum

c. It has double maximum

d. It has temperature of about 27degree C

e. It has a high relative humidity of over 90%

f. Annual range of temperature 2-3oC

**EFFECTS OF SUBEQUATORIAL CLIMATE ON AGRICULTURE**

1. Heavy rainfall also gives rise to growth of tree crops like; Cocoa, rubber, oil palm, kola nut etc.

2. Heavy rainfall also gives rise to the growth of tuber crops.

3. Two peaks of rainfall (i.e.; double maximum) give rise to double cropping that two planting seasons in March and September e.g.; Early maize and Latex maize.

4. Heavy rainfall and thunderstorms results in leaching and soil erosion

5. Heavy rainfall and high humidity give rise to forest and hinder pastoral farming.

**TROPICAL HINTERLAND (WET CLIMATE):**

1. This climate is formed in the forest areas like; Ibadan, Ilorin Akure, Oshogbo, Enugu.
2. It had moderate rainfall of 2000-3000mm
3. It has 4-5 months of little rainfall i.e.; the wet season is roughly 6-7months of the year.
4. It has double Maxima of rainfall in the southern boundary and single maximum in the northern boundary.
5. It has high temperature of over 27◦C.
6. It has an annual range of temperature of 6◦C

**EFFECTS ON AGRICULTURE**

1. Moderate rainfall give rise to the growth of crops found in both north and south
2. Moderate rainfall gives rise to the growth of yams, cassava, cocoyam, millet, sorghum etc.
3. Both root crops like yam and grain crops like rice, maize, millets are grown
4. Light rainfall in the northern boundary gives rose to livestock production

**TROPICAL CONTINENTAL (DRY CLIMATE):**

1. This is also called the Sudan climate
2. The climate is found in Sokoto, Bauchi, Kano, Bornu etc
3. Rainfall is between 500-1000mm per annum
4. There is a long period of little or no rainfall (i.e.; dry season of 4-8 months)
5. The relation humidity is low (20-40%) in January and (50-60%) in July
6. High temperatures throughout the year (21oC-33oC)
7. It has a high range of temperature (11oC)

**EFFECTS ON AGRICULTURE**

1. Little rainfall brings about irrigation farming around Kanu-Sokoto basin, Wadeija-Jaima basis etc.
2. Little rainfall favors the growth of grain crops like; maize, rice, millet, sorghum etc.
3. Little rainfall supports livestock production like cattle, sheep, and goats.
4. Little rainfall encourages wind erosion.

**HIGH PLATEAU CLIMATE**

1. This climate is found around areas like Jos, Adamawa, Obudu, Mambilla, Plateau
2. It has heavy rainfall around Jos and it's environments with 2000mm
3. It has moderate temperature between 21oC and 26oC
4. Temperature range is between 8oC-12oC
5. It has a high relative humidity

**EFFECTS ON AGRICULTURE**

1. Heavy rainfall leads to contour ploughing
2. Heavy rainfall supports the growth of tree crops like coffee
3. Moderate rainfall in the lowland supports the growth of grasses for cattle rearing
4. Absence of pest e.g.; Tsetse flies promote livestock production

**ASSIGNMENT:**

1. Draw a diagram for sea breeze and land breeze.