

## GEORGRAPHY

### 3<sup>RD</sup> TERM S.S.1

#### Topic: Environment – Meaning, Types, Domains and Importance

##### Definition:

Environment means our surroundings. It consists of the conditions in a place that affect the behaviour and development of individuals. It is the natural world in which people, animals and plants live.

##### Types of environment

The types of environment are;

1. Physical environment
2. Social environment

##### Domains of Environment.

These include;

1. Atmosphere
2. Lithosphere
3. Biosphere
4. Hydrosphere

##### Atmosphere

The atmosphere is the gaseous portion of the earth. It is a layer of gases surrounding the earth. It contains 78% Nitrogen, 21% Oxygen, 0.03% carbon dioxide, 0.97% rare or inert gases.

The atmosphere consists of the following layers; Troposphere, stratosphere, ionosphere, Exosphere and the far reaches of the universe.

966	UNIVERSE	Universe
402	EXOSPHERE	
80	IONOSPHERE	
10	STATOSPHERE	
0	TROPOSPHERE	
kms		

## The atmosphere and outer space.

The lowest layer of the atmosphere is the troposphere. It extends from the earth's surface for a height of 10 kilometres. All weather elements are confined to the troposphere. Above the troposphere is the stratosphere. It extends upwards for another 80km. It has thin air and without dust, smoke or water vapour. Beyond the stratosphere is the ionosphere, which extends 402km up. It has electrically conducting layers which make short -wave radio transmission possible over long distances. Up to 966km is the exosphere and the far reaches of the universe which contain neither air nor gases and which are extremely dark and cold.

### **Lithosphere**

Lithosphere is the solid portion of the earth. It is the outermost layer of the earth's crust. It is made up of rocks and mineral materials.

### **Biosphere**

The biosphere is the zone of the earth occupied by living organisms. It is a layer of life which exists on earth's surface and the lithosphere. It has a maximum thickness of only a few kilometres. It includes organisms like plants, animals and micro-organisms.

### **Hydrosphere**

The hydrosphere is the liquid portion of the earth. It covers about 70% of the earth's crust. It holds water in various forms - solid e.g ice, liquid e.g water, gas e.g water vapour. It includes all forms of fresh water like rivers, streams and also ocean and sea water which is salty.

## **IMPORTANCE OF THE ENVIRONMENT**

Environment is important in the following ways;

1. All human activities are carried out on the environment.
2. All economic activities e.g transportation, mining, trading etc are carried out in the environment.
3. It provides all resources that support human life.
4. It provides food for man and other living organisms.

5. It is used to generate power e.g H.E.P through the hydrosphere and solar energy through the sun.

## **ENVIRONMENTAL HAZARDS**

### **Meaning:**

Environmental hazards are disasters caused by nature or man which poses a serious danger or risk to lives and properties of people in their environment. They are also called environmental problems.

### **Types of Environmental Problems;**

1. Soil erosion
2. Pollution
3. Volcanic eruptions
4. Earthquake
5. Drought
6. Desert encroachment
7. Hurricane
8. Lightning
9. Hail
10. Mining
11. Deforestation
12. Oil spillage
13. Flooding
14. Coastal erosion
15. Tornadoes
16. Blizzards
17. Mass wasting.

## **FORMS OF ENVIRONMENTAL HAZARDS**

### **1. SOIL EROSION**

#### **Definition:**

Soil erosion is defined as the gradual removal of the top layer of the soil through the action of water and wind.

#### **CAUSES:**

1. Bush burning:  
This destroys the natural cover of the land and thereby exposes the soil to erosion.
2. Overgrazing:  
This is the excessive removal of grasses by animals that feed on them thereby exposing the soil to erosion.
3. Excessive Rainfall/Wind:  
This increases the rate of soil erosion.
4. Shifting cultivation:  
It is a major agricultural practice in some areas which leads to soil erosion.
5. Deforestation:

This is the removal of vegetation thereby allowing erosion to take place

6. Excavation of soil for building and construction purposes equally leads to soil erosion.

### **EFFECTS OF SOIL EROSION:**

1. Soil erosion leads to reduction or loss of farmlands.
2. It causes the removal of top fertile soil meant for crop cultivation.
3. It leads to the destruction of roads and other track ways.
4. It creates environmental imbalance.
5. It causes the loss of lives and properties.
6. It leads to the development of bad lands.

### **CONTROL:**

1. Afforestation: This is the planting of trees to control erosion.
2. Controlled grazing: Few animals should be allowed to graze on the area to prevent soil erosion.
3. Cover cropping: This is the planting of legumes to cover the soil so as to prevent erosion.
4. Terracing: This is the method of cutting steps on hill sides to reduce the speed of running water down the hill slope.
5. Contour ploughing: Through contour ploughing or making ridges across slopes, the speed of running water down the slope is reduced.
6. Public enlightenment campaign to educate people on the hazards of soil erosion and on the latest conservation measures.

### **DROUGHT**

Drought - meaning, causes, effects and control.

Drought is refers to the absence of rainfall which is long enough to cause total dryness in an area.

### **CAUSES:**

1. Drought is mainly caused by lack of rainfall.
2. Presence of high daily temperature.
3. High rate of evapo-transpiration.

4. Lack cloud and low humidity.

#### **EFFECTS:**

1. Drought disturbs plant's life
2. Surface streams or rivers may dry up.
3. It affects human beings and livestock.
4. It leads to high losses of crop and livestock.
5. It may lead to migration of man and animals.

#### **CONTROL:**

1. Afforestation: The planting of trees does encourage formation of rain.
2. Irrigation: The artificial application of water to the soil encourages the growth of plants.
3. Planting of cover crops: This reduces evaporation and encourages retention of water in the soil.
4. Avoidance of Overgrazing: This will encourage growth of grasses.

### **FLOODING**

#### **Flooding - meaning, causes, effects and control**

##### **Flooding - meaning.**

Flooding may be defined as the occurrence of excessive volume of water in areas not usually under water.

#### **CAUSES:**

- i. Excessive rainfall in an area leads to flooding of river channel
- ii. Refuse dumping to block culverts or river channels
- iii. Poor drainage system or lack of gutters
- iv. Establishment of settlement along river channels.
- v. Breakdown of dams and embankments.
- vi. Inadequate urban planning
- vii. Strong tidal waves can cause flooding in coastal areas.

#### **EFFECTS:**

- i. Flooding causes the loss of lives and properties.
- ii. It causes the interruption of socio-economic activities
- iii. It makes human and vehicular movement difficult.
- iv. It creates health hazards by way of pollution

- v. It causes pollution of the environment due to the deposition of debris
- vi. It washes away roads and railways
- vii. It leads to the destruction of farmlands.
- viii. It can spread waterborne diseases.

#### **CONTROL:**

- i. Construction of wider gutters and culverts
- ii. Avoid refuse dumping in water channels.
- iii. Proper channelization of floods from city centres.
- iv. Legislation against indiscriminate dumping of refuse in water channels
- v. Public enlightenment on effects of flooding
- vi. Regular clearance of drainage channels
- vii. Proper urban planning to avoid urban flooding.

#### **Desert Encroachment**

##### **Definition**

Desert Encroachment is the extension or spread of the desert to areas which were originally not desert before.

It is common in areas very close to the desert e.g sahel regions in

- i. Northern Nigeria like Maiduguri, Sokoto, Birnin Kebbi etc.
- ii. North – East of Nigeria
- iii. North – West of Nigeria

##### **CAUSES:**

- i. **Overgrazing:** The excessive removal of grasses by animals leaves the soil bare to desert encroachment
- ii. **Changes in Climate:** Changes in climate of a place from partial wet climate to dry one
- iii. **Bush Burning:** This exposes the soil thereby encouraging desert encroachment.
- iv. **Deforestation:** The cutting down of trees can also encourage desert encroachment
- v. **Prolonged Drought:** Prolonged drought in an area can also lead to dessert encroachment

- vi. **Over-Cultivation:** Over-cultivation in the desert fringes can also bring about desert encroachment.

### **Effects of Desert Encroachment**

- i. Desert encroachment can lead to displacement of people and settlement.
- ii. It leads to crop failure or poor yield of crops
- iii. It could cause the loss of pasture for livestock
- iv. It leads to shortage of water for animals and human consumption
- v. It can Expose the soil to wind erosion

### **CONTROL**

Desert encroachment can be controlled in the following ways:

- i. **Afforestation:** The planting of trees could control desert encroachment
- ii. Irrigation scheme encourages the growth of vegetation.
- iii. **Legislation against Bush Burning:** Laws should be made against bush burning so as to prevent desert encroachment.
- iv. Rotational grazing can reduce desert encroachment.
- v. **Creation of shelter belts:** This checks wind speed thereby.

### **ENVIRONMENTAL RESOURCES**

#### **Meaning:**

Environmental resources can be defined as usual things (both living and non-living) which are of benefit to man, animals and plants.

#### **Types of Environmental Resources:**

There are Five main environmental resources and these are:

- i. Atmospheric resources
- ii. Water resources
- iii. Vegetation resources
- iv. Human resources
- v. Mineral resources
- vi. Land resources

### **Atmospheric Resources:**

Atmospheric resources are those elements such as wind, water, sunlight and gases which are of benefit to man, animals and plants. They include: (i) Oxygen (ii) Carbon dioxide (iii) Water vapour (iv) Ozone layer and some inert gases like neon, argon and helium, wind rain and solar energy.

### **Importance of Atmospheric Resources:**

#### **1. Gases**

##### **A. Oxygen:**

- i. Oxygen is used by plants and animals for respiration.
- ii. It supports burning of materials i.e. Combustion.
- iii. Oxygen supports animal life
- iv. Oxygen combines with water vapour (Oxidation) for chemical weathering
- v. Oxygen is also used for industrial purposes.

##### **B. Carbon Dioxide:**

- i. It is required by plants for photosynthesis
- ii. Carbon dioxide combines with water to produce chemical weathering (carbonation)
- iii. Green plants take in carbon dioxide
- iv. Carbon dioxide absorbs heat to control atmospheric temperature in the carbon cycle.

##### **C. Nitrogen:**

- i. Nitrogen is required by plants in the manufacture of proteins
- ii. It combines with water to provide food for plant growth
- iii. Nitrogen in the air can be converted to nitrate in the soil
- iv. Nitrogen gas is used in electrical energy

##### **D. Water Vapour**

- i. It is important for rain formation
- ii. It moderates atmospheric temperature.

##### **E. Rain**

- i. It provides water for human consumption

- ii. It provides water for agriculture
- iii. It reduces temperature and feeds rivers with water.
- iv. It is a source of underground water.

**F. Sunlight or Solar Energy**

- i. It provides solar energy for drying clothes.
- ii. It is used for drying agricultural products.
- iii. It is used for heating, cooking and cooling processes.
- iv. It is used for generating electricity
- v. It also provides or is a source of Vitamin D.
- vi. It is required by plants for photosynthesis

**G. Wind:**

- i. Wind can be harnessed for wind mill, used for pumping water.
- ii. It aids drying of clothes and crops
- iii. It is used in meteorological stations
- iv. It aids sailing of ships and aviation
- v. It is useful in winnowing and pollination
- vi. It is used for sporting e.g yatching
- vii. It is used for dispersal of seeds.

**Water Resources - Types and Importance**

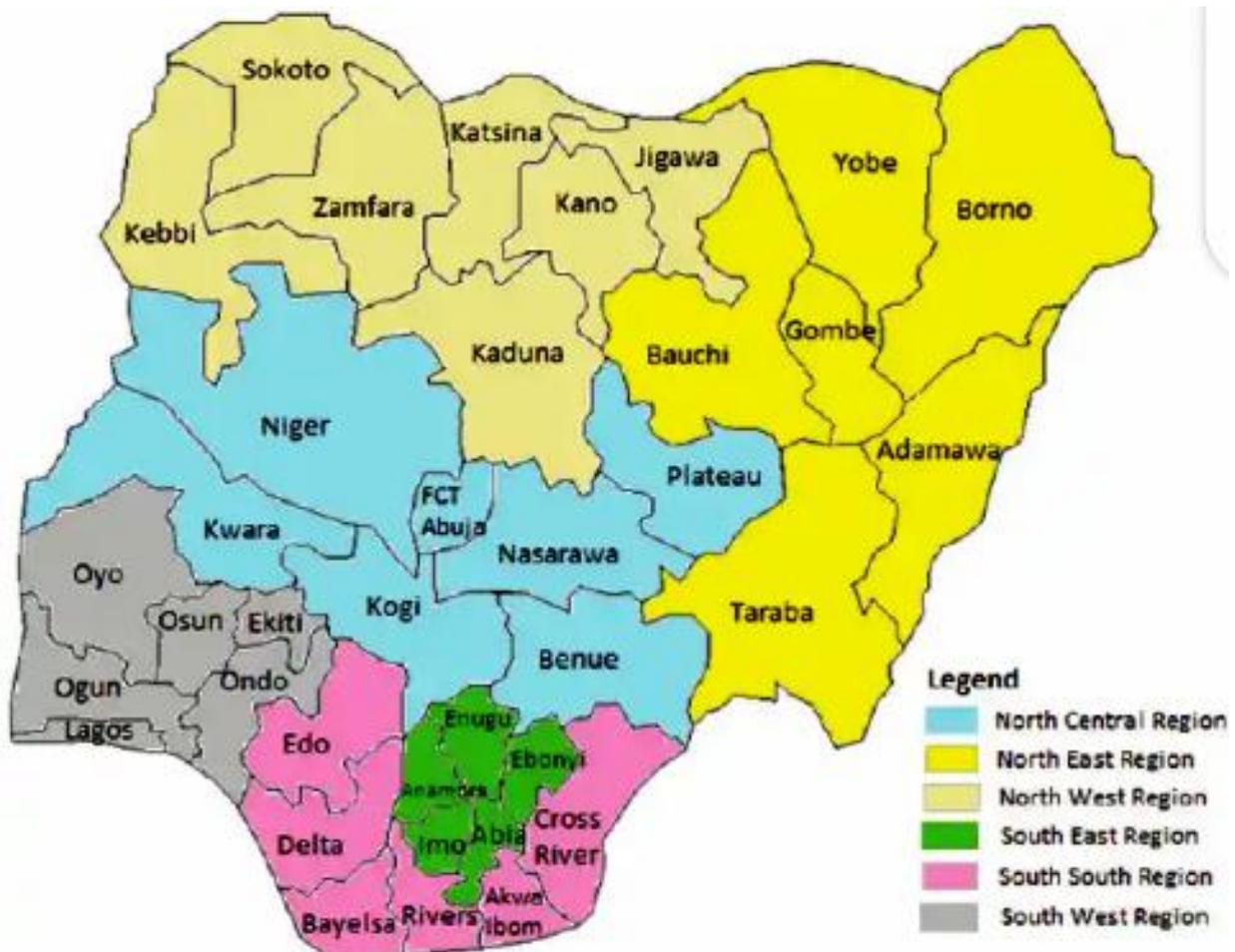
**Meaning:**

Water resources refer to useful materials (living or non-living) inside water which of benefit to man, animals and plants. Some of them include fishes, minerals, plants etc.

**Importance of Water Resources to man:**

1. Source of food supply: Fishing in oceans, lakes and rivers provides food for man in form of fish, prawns, crayfish, crab tec.
2. Generation of Hydro-electric Power (H.E.P): Many rivers are dammed in areas of waterfall and rapids for the purpose of generating electricity e.g Kainji Dam.
3. Agricultural Purposes: Water from rivers, lakes, wells, boreholes are used for irrigation purpose especially in areas of low rainfall.

4. Medium of transportation: Rivers e.g the River Niger and River Benue, lakes and ocean provide useful medium by which people and goods travel
5. Domestic use: Water from rain, rivers, and boreholes are used for cooking, washing, bathing and drinking.
6. Industrial use: Water from rivers, lakes, boreholes are used in industries for various purpose.
7. Employment: Oceans, lakes and rivers provide people with jobs e.g fishermen, canoe and ship builders.
8. Recreation / Tourism: Water in lakes and rivers is used by people for sports e.g swimming, driving etc and for relaxation and tourism e.g bar beach in Lagos
9. Source of Minerals: Water from seas and oceans is a major source of minerals e.g petroleum.



## WEEK 6

**Topic: Nigeria**

**Location, Position, Size and Political Divisions.**



### **LOCATION:**

Nigeria is located between  $4^{\circ}\text{N}$  and  $14^{\circ}\text{N}$  of the equator and between  $3^{\circ}\text{E}$  and  $15^{\circ}\text{E}$  of the Greenwich Meridian

### **POSITION:**

Nigeria is in West Africa. She is bounded in the west by Benin Republic, in the North by Niger Republic, in the East by Cameroun Republic, in the North - east by Chad Republic, and in the South by the Atlantic Ocean.

### **SIZE:**

Nigeria is the fourth largest country in West Africa in terms of land area after Niger, Mali and Mauritania. The total land area of Nigeria is approximately  $923,768 \text{ KM}^2$ .

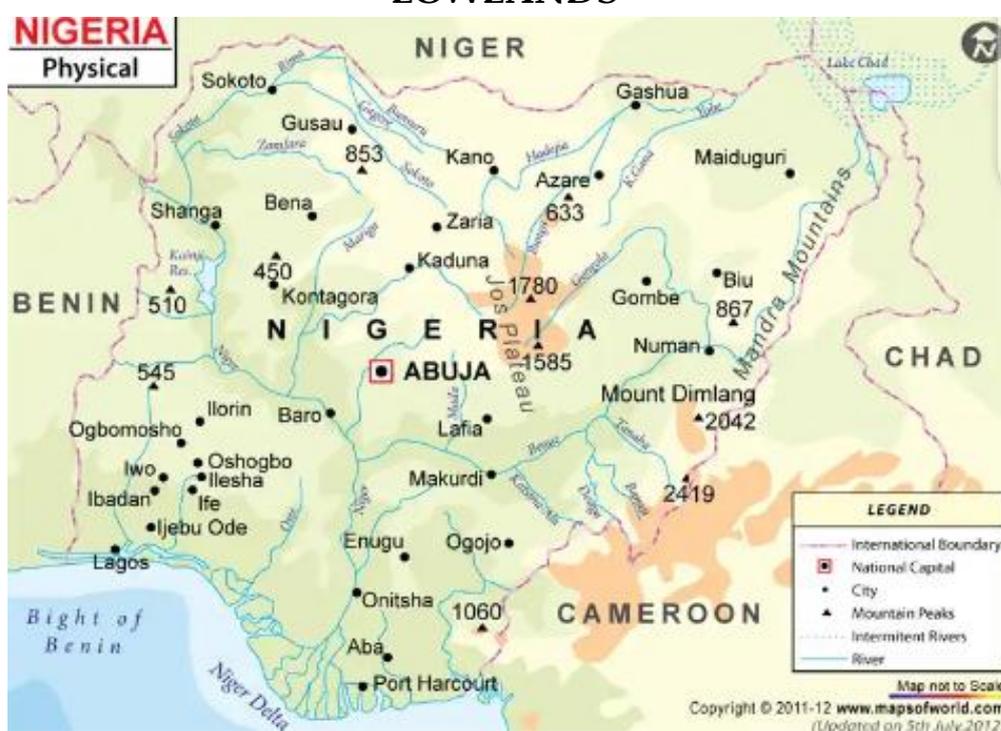
**POLITICAL DIVISIONS:  
(MAP OF NIGERIA SHOWING THE 36 STATES AND THEIR  
CAPITALS AND F.CT)**

Nigeria is made up of 36 states and F.C.T. which is Federal Capital Territory - Abuja.

S/No	State	Capital
1	Abia	Umuahia
2	Adamawa	Yola
3.	Akwa0Ibom	Uyo
4.	Anambra	Awka
5.	Bauchi	Bauchi
6.	Bayelsa	Yenagoa
7	Benue	Makurdi
8.	Borno	Maiduguri
9.	Cross River	Calabar
10.	Delta	Asaba
11.	Ebonyi	Abakaliki
12.	Ekiti	Ado-Ekiti
13.	Edo	Benin
14.	Enugu	Enugu
15.	Gombe	Gombe
16.	Imo	Owerri
17.	Jigawa	Dutsi
18.	Kaduna	Kaduna
19.	Kano	Kano
20	Katsina	Katsina
21.	Kebbi	Birnin-Kebbi
22.	Kogi	Lokoja
23.	Kwara	Ilorin
24.	Lagos	Ikeja
25.	Nassarawa	Lafia
26.	Niger	Minna
27.	Ogun	Abeokuta
28.	Ondo	Akure

29.	Osun	Osogbo
30.	Oyo	Ibadam
31.	Plateau	Jos
32.	Rivers	Port Harcourt
33.	Sokoto	Sokoto
34.	Taraba	Jalingo
35.	Yobe	Damaturu
36.	Zamfara	Gusau
	Federal capital Territory	Abuja

### NIGERIA - PHYSICAL FEATURES - HIGHLAND AND LOWLANDS



### NIGERIA - PHYSICAL FEATURES

Relief of Nigeria can be grouped into two main classes which are highlands and lowlands.

The highlands in Nigeria are grouped into four areas. These are:

i. **The North -Central Highlands.**

It lies in the centre of Northern Nigeria around Kano, Kaduna, Bauchi and Plateau states. Jos Plateau (200 - 1500m) is found in this highland.

The highest point of Jos Plateau is Shere Hills (1650m)

ii. **The Western Highlands:**

The Western Highlands are found in the western part of Nigeria around Ondo, Oyo, Kwara and Oshun States. Important Hills in these areas include Idanre Hill, Apata Hill, Epeme Hill.

iii. **The Eastern Highlands:**

These are found in the borders between Nigeria and Cameroun. They represent the highest zone in Nigeria. Among the mountains are:

- (a). Mandara Mountains (1200 - 1500m)
- (b). Bill Plateau (800 - 1000m)
- (c). Alantika Mountains and Shebshi Mountains (1600 - 2000m)
- (d). Obudu plateau and Oban Hills (1200m)

**Eastern Scarpland:**

This is found within the eastern region of Nigeria, especially around Enugu and Nsukka. The major highland in this area is the Udi-Nsukka Plateau (300- 600m)

**IMPORTANCE OF HIGHLANDS**

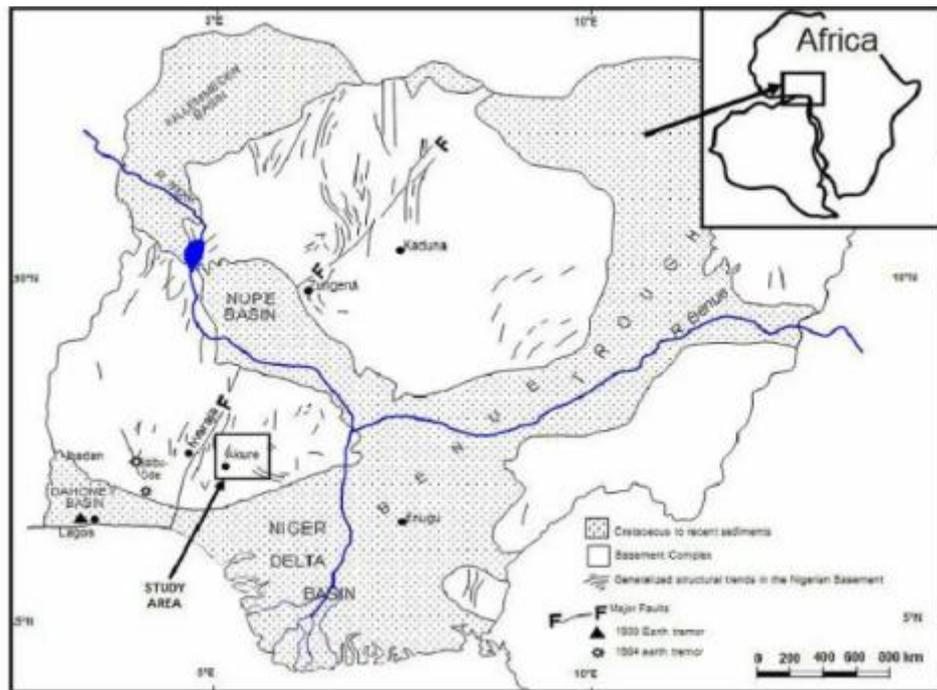
1. **Sources of Minerals:** Some mountains are sources of minerals like tin, gold diamond, which are useful to man
2. **Formation of Rainfall:** Highlands and the formation of rainfall (orographic or relief rain) especially on the windward side of the mountain.
3. **For Transhumance:** Some highlands provide pasture which aid transhumance whereby cattle rearers take their cattle up the highlands during the rainy season and after the rains, they move down to the lowlands. This is to avoid tse-tse flies.
4. **Sources of Rivers:** Many rivers in Nigeria rise from highlands. E.g River Niger rises from Guinea Highlands.
5. **Rock for Construction:** Rock from highlands are used for construction works.
6. **Lumbering:** Lumbering is practised on mountain slopes.

7. **Agriculture:** Terrace farming is done in Jos Plateau, Bill Plateau and Udi Hills.
8. **Communication:** Highlands are sites for communication equipment e.g T.V antenna and radio mast.
9. **Defence:** Mountains serve as defence against invaders especially during inter-tribal wars.
10. **As Tourist Centres:** Some highlands are centres for tourist attraction.
11. **Climate Barriers:** Some mountains serve as climate barriers because, their two sides may have different climates.
12. **Construction of Hydro-Electric Power (H.E.P):** Some river with steep slopes, fast flowing and presence of rapids, at the source aids the construction of H.E.P to generate electricity.
13. **Settlement Sites:** Some highlands are suitable sites for human habitation e.g Jos Plateau.

### **Disadvantages of Mountains**

1. **Barriers to Communication:** Mountains are barriers to communication as they prevent road, railway and airport construction.
2. **Prevent human Habitation:** High mountains have rugged slopes and cold weather which prevents good human and animal habitation.
3. **Mountains Prevent Soil Erosion:** Areas close to mountains are usually associated with soil erosion due to the speed of running water down the steep slopes of mountains.
4. **Mountains Occupy Good Land:** Mountains at times do occupy good land that would have been used either for farming or settlement.
5. **Poor Soils:** Mountains areas are not good for agriculture as the soil are poor in nutrients and difficult to work on.

## DRAINAGE OF NIGERIA



Drainage refers to waterbodies like rivers and lakes.

## RIVERS IN NIGERIA

The two largest rivers in Nigeria are the River Niger and River Benue

The River Niger has its source from Guinea Highlands in Guinea. The river Benue has its source from eastern highlands and joins the River Niger at Lokoja.

Other rivers in Nigeria take their sources from highlands in Nigeria known as hydrological centres. These are:

- i. **Western Highlands:** The rivers that rise from these highlands are Ogun, Osun and Osse which flow directly into the Atlantic Ocean.
- ii. **North - Central Highlands:** They have such rivers as Kaduna, Hadeija, Zamfara, Yobe, Gana, Gongola and Rima. Some of them flow into Lake Chad.
- iii. **Eastern Highlands:** The rivers that rise from these highlands are Danga and Katsina.
- iv. **Eastern Scarplands:** The rivers that rise from the scarplands are Anambra and other smaller rivers. Cross River rises from the Cameroun mountains.

## CHARACTERISTICS OF NIGERIAN RIVERS

Nigerian rivers have the following characteristics.

1. **Direction of Flow of Rivers:** The rivers in Southern Nigeria flow in a North-South direction into the Atlantic Ocean. While Northern Nigeria rivers radiate from the Central Plateau and flow in all directions.
2. **The volume of Water increase changes with seasons:** The volume of water increase during the rainy season and decreases during the dry season.
3. **Presence of Debris:** Most Nigerian rivers carry a lot of materials in suspension and solution. Materials carried include dead leaves, mud, wood etc.
4. **Presence of Rapids and Cataracts:** Most rivers have rapids and cataracts which disturb inland navigation.
5. **Shallowness:** Most rivers are very shallow and full of silt due to high evaporation and seepage of water into the soil
6. **Colour changes with season:** The rivers look muddy during the rainy season but remain clear and clean during the dry season.
7. **Seasonality:** Most rivers flow during rainy season but stop or reduce flowing during the dry season.

## IMPORTANCE OF RIVERS TO MAN

1. **Fishing:** All rivers in Nigeria are important fishing grounds.
2. **Transportation:** Big rivers like the River Niger and River Benue are used for transporting passengers and goods from one place to another.
3. **Hydro-Electric Power (H.E.P):** Many rivers with waterfalls and rapids are dammed for generating electricity. For example, the River Niger and Kainji, the Kaduna River at Shivoru and Kwall falls on the Jos Plateau.
4. **Irrigation:** The rivers provide water for irrigating farms especially in the drier north. For example, the Bacita Sugar plantation depends on River Niger for irrigation water.
5. **Domestic and Industrial Uses:** Rivers provide water for use at home and in industries

6. **Employment:** Rivers provide employment to many people e.g fishermen, canoe and ship builders.
7. **Sources of Food Supply:** Rivers are known to provide food for man in form of fish, prawn, crayfish, crab etc.
8. **Recreation/Tourism:** Some rivers are centres of tourist attraction and may generate foreign exchange for our country.
9. **Construction of Ports:** Some rivers are good sites for the construction of river ports

## NIGERIA - CLIMATE

Climate can be defined as the average weather conditions of the atmosphere of a place over a long period of time of about 35 years.

The elements of climate are: Temperature, rainfall, wind direction and speed, relative humidity, pressure, cloud cover and sunshine.

In Nigeria, the following elements determine her climate – temperature, rainfall and wind direction.

- a. **Temperature:** The temperature in Nigeria is not uniform.
  - i. **It varies from place to place:** It is low in the south about 24°C. This is because to the cooling effects of the Atlantic Ocean. Temperature is high in the north over 28°C. This is because of the distance from the sun.
  - ii. **It varies with Altitude:** Places on high altitude like Jos, Obudu, Adamawa tend to have lower average temperature about 20°C while areas on the same latitude have average temperature of over 27°C.
  - iii. **It varies with seasons:** Temperatures are usually higher during the rainy season in the north but lower in the south due to thick cloud cover. During the dry season, temperatures are lower in Nigeria due to influence of harmattan.
  - iv. **Variation in annual range:** The annual range of temperature in the south is between 2°C – 3°C while that of the north is 9°C.
- b. **Wind:** Four winds influence the climate of Nigeria. These are.

- i. **Tropical Maritime Airmass (South - West trade wind):** It flows across the Atlantic ocean towards the coast of Nigeria. The wind is warm and wet hence it brings rainfall to Nigeria with the wettest part in the Delta region. Warri and Port Harcourt have twelve months of rainfall.

The rainfall decreases towards the north. It usually starts around March and ends around October with a short dry period in August called August break.

- ii. **Tropical Continental Airmass (North - east trade wind):** This trade wind is responsible for the dry season. It blows across the Sahara desert towards Nigeria. It is cold, dusty and dry, hence, it does not bring rain. Rather, it brings very cold, dusty and dry weather called harmattan. It starts from November and ends around February.

- iii. **Equatorial Easterlies:** This wind blows around the Equator from the east. It has some influence on the North-east and South-west trade winds when they meet.

The North-east and South-west trade winds meet at a place called Inter-tropical front. A little above this front, where the two air masses meet I called the Inter - tropical Convergence Zone (ITCZ). This zone is not fixed. It can move north or south depending on which of the two winds is stronger.

When the Equatorial Easterlies cut below the S.W trade winds, they cause torrential rainfall.

When the Equatorial Easterlies cut below the N.E trade winds, they cause a whirlwind, cyclical winds, carrying dust and pieces of paper. This wind is called Dust devil.

- iv. **Land and Sea Breezes:** These local winds blow on the coast of Lagos, Warri, Port Harcourt. Etc
- i. They blow alternately between land and sea on a daily basis.

- ii. Breeze exchange between the land and sea is attributed to differential heating of the land and sea.
- iii. These winds are common in areas very close to the sea.

### **SEA BREEZE:**

This breeze blows from the sea to the land during the day, the land is heated much faster than the sea and it cause air to rise, creating a low pressure situation over the land. Air therefore, blows from the sea to replace heated and rising air on the land, thereby resulting in lower temperature and relatively cool air on the land, which results in sea breeze.

### **LAND BREEZE:**

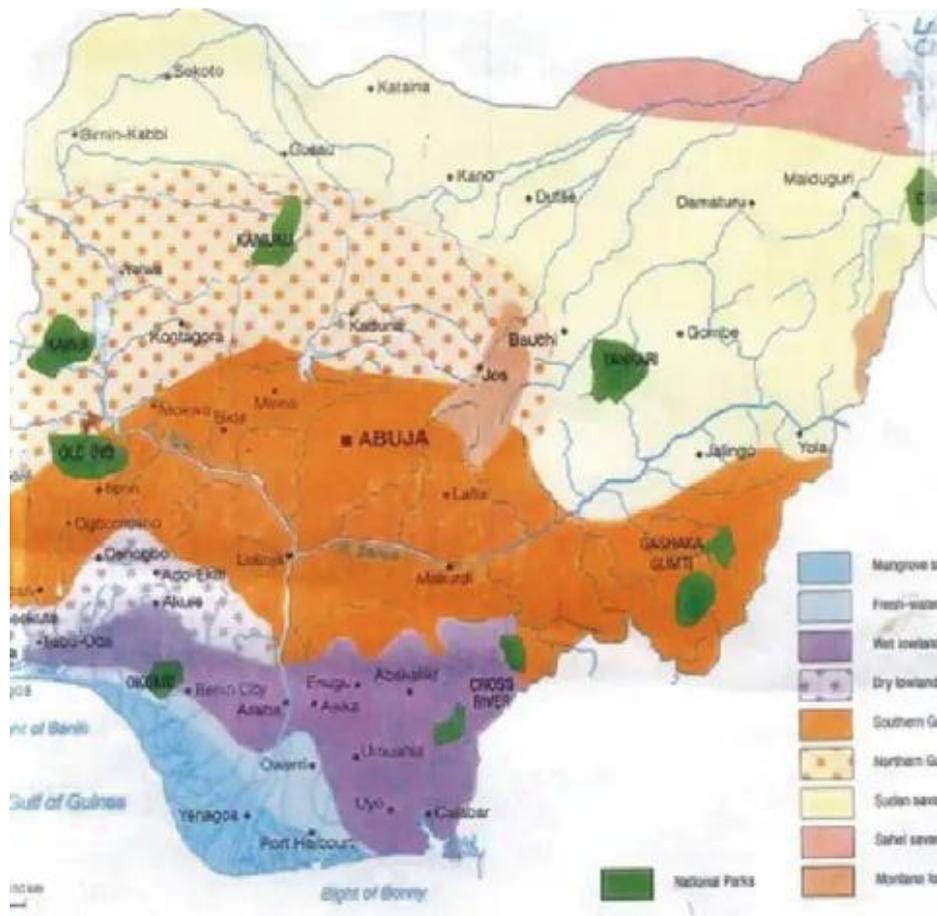
This breeze blows from the land to the sea. At night, the land becomes cooler than the sea, having lost much of its heat at a much faster rate than the sea. Thus, there is a high pressure situation on the land and a relatively lower pressure situation on the sea. Hence, land breeze blows from the land to the sea.

### **RAINFALL DISTRIBUTION**

Rainfall in Nigeria is not uniformly distributed

- i. It is higher in the south due to its nearness to sea and the effect of south-west trade wind while it is lower in the north.
- ii. Rainfall decreases from the south (3,000mm) towards the north (300mm).
- iii. Highland areas like Jos, Adamawa etc receive higher rainfall than neighbouring areas as a result of relief or orographic type of season.
- iv. Rainfall varies with season: Rainfall is heavier during the rainy season (March - October) than in dry season (November - February)
- v. In the South, there are two peaks of rainfall (also called double maxima) which occur during June/July and September/October, while the north has only one peak of rainfall (also called single maximum)

## NIGERIA - VEGETATION



(Map of Nigeria – showing Vegetation)

Two broad vegetation belts can be found in Nigeria. These are :

- a. Forests
- b. Savanna.

Within each group three sub-types can be distinguished. These are:

### For Forests

- i. Salt – water swamp forest or mangrove forest.
- ii. Fresh – water swamp forest
- iii. High forest.

### For Savanna

- i. Guinea Savanna
- ii. Sudan Savanna
- ii. Sahel Savanna

There is also the Montane Vegetation.

- i. **Salt - Water Swamp (Mangrove) Forest.** Only mangroves grow here.

This is found in the Lagoons and creeks. Here the Delta region, along the Lagoons and creeks. Here salty water from the ocean mixes with fresh water from the rivers.

The mixture gives rise to brackish water. The soil is swampy and water logged. Along the beaches the soil is sandy. As a result , coconuts and tall reeds replace the mangrove trees.

- ii. **Fresh - Water Swamp Forest:** Further inland from the mangrove forest, where the tide cannot reach, the land is free from sea water. Fresh water is constantly supplied by the heavy rainfall and the rivers. The area has level topography and is also water - logged.

They typical trees are the raffia palm and the bamboo. The trees here have stilt and buttress roots for support. The trees are broad - leaved and evergreen.

- iii. **High Forest:** This belt of vegetation lies to the north of the swamp forest. It stretches from the western boundary of Nigerian eastwards through Ibadan and Benin across the Niger to the Oban Hills. It is sometimes called the rain forest belt. The vegetation has a great variety of trees, shrubs and climbing plants.

The annual rainfall is high from 1300mm to 1500mm in the west and over 2000mm in the east. The humidity is also high over 80%. The wet season is long 8 to 10 months. The above factors promotes perennial tree growth.

The trees are arranged in three distinct levels or storeys.

1. **The Ground Storey:** This is made up of herbs, shrubs and trees that grow to a height of between 3m to 6m with some grasses.
2. **The Middle Storey:** This consists of tall trees, 18m to 24m high. The crowns of the trees are in contact with one another and form a

canopy of interwoven branches. There are also ferns, thick - stemmed creepers and stranglers.

- 3. The Top Storey:** The top storey consists of big trees which grow up to a height of between 30m to 60m. The trees have big buttress roots, tall and straight stems. They also have umbrella - shaped crowns which are not in contact with each other. These tall trees include valuable ones like mahogany, iroka, obeche, walnut and sapele wood.

Generally, the trees in the high forest are broad - leaved and evergreen.

## **GUINEA SAVANNA**

This is the broadest vegetation zone in Nigeria. It is located in the middle of the country, stretching from Oyo and Anambra States in the South to Kaduna and parts of Kano and Bauchi States in the North.

Annual rainfall is between 100cm to 150cm. the wet season lasts for 6 to 8 months. The vegetation is called Parkland Savanna. The trees have long tap roots and develop thick bark which enable them to survive the long dry season and resist bush fires.

The grasses have durable roots which remain underground after the tops have been burnt away, after the dry season fire. They sprout again with the onset of the first rains of the following year.

Within this zone can be found gallery forest and derived savanna.

**Gallery Forest:** This is found along the river banks where the ground is moist and can be found low forest

**Derived Savanna:** This is found in the southern part of guinea savanna which has fewer trees than the northern part. It occurs as a result of man's devastation of the trees.

Examples of trees found in the guinea savanna are locust bean, shea butter and oil bean trees, elephant grasses up to a height of 3 to 3.6m.

**Sudan Savanna:** This belt of vegetation is found in the far north. It stretches from the Sokoto plains through the northern section of the high plains of Hausaland to the Chad Basin.

The annual rainfall here is between 65 and 100cm. the relative humidity is constantly below 40%. In the wet season, the R.H may reach up to 60%. The duration of the dry season is about 6 to 8 months here.

The vegetation is made up of short grasses. 1.5 to 2m high and some stunted trees. The trees found here include eht baobab, the acacia, the dum palm and the silk cotton.

**Sahel Savanna:** The sahel savanna is found near the desert fringes. It is limited to the north-eastern corner of the country, where the annual rainfall drops below 65cm and the length of the dry season exceeds 8 months.

The grasses in this area are short and tussocky, 0.5 to 1 meter high. They are interspaced with sand dunes. The main trees foundhere is the acacia although date palms also grow in this area.

### **Montane Vegetation**

Montane Vegetation is the vegetation found on mountains. In Nigeria, there is no true montane vegetation but little changes brought about by relief. On the Jos Plateau, Adamawa and Alantika highlands, there are tall grasses and trees at the foot of the highlands. As altitude increases, the trees get smaller and fewer and the grasses get shorter. A t the top of the highlands, typical temperature trees, like eucalyptus are found.

## **IMPORTANCE OF THE FOREST AND SAVANNA VEGETATION**

### **Forest resources are important for:**

1. **Foreign Exchange:** Timber and cash crops are exported to other counties which provide foreign exchange for the country.
2. **Raw Materials:** Raw materials such as cocoa beans, rubber lumps, plywood are derived for our industries.

3. **Timber for Construction:** Timber get from economic trees, such as iroko and mahogany are used for various construction works going on in our country.
4. **Food:** Food and cash crops such as yams, cassava, oil palm, rubber, cocoa etc are provided by the forest vegetation for our use.
5. **Employment:** The forest provides jobs for the farmers, hunters and lumbermen etc.
6. **Wildlife and Tourism:** The forest is the natural habitat of wildlife and often serves as tourist centre.
7. **Fuel:** Firewood from the forest serves as fuel for domestic and industrial uses.

#### **THE SAVANNA VEGETATION IS IMPORTANT FOR:**

1. **Game Reserve:** Game reserves such as Yankari and Borgu Game Reserves are established in the savanna.
2. **Employment:** Employment opportunities are provided for farmers and herdsmen in the savanna.
3. **Tourism:** The savanna promote tourism and recreational facilities through the various game reserves.
4. **Fuel:** Wood from trees in the savanna serves as fuel for domestic use.
5. **Arable and Livestock Farming:** Arable and livestock farming are carried out in the savanna regions of Nigeria