CHAPTER 18 AFRICA

18.1 Location, Size and Position

LOCATION: Africa extends from latitude 35^0N to latitude 34^0S. It also stretches from 17^0W and 52^0E of the Greenwich Meridian.

POSITION: Africa is surrounded by the Atlantic Ocean in the west and south west, India Ocean in the east and south east, the Red Sea and gulf of Aden in the north east and the Mediterranean Sea in the north. The Mediterranean Sea separates Africa from Europe. The Isthmus of Suez joined the continent to Asia at the north eastern end, until it was cut through by the Suez canal in 1869.

SIZE: Africa is made up of several countries. The African continental mainland together with the islands, makes up more than fifty countries. Africa is a huge continent which occupies one-quarter of the total land area of the world.

With a landmass of 30,300,000 sq km., Africa is the second largest continent after Asia. It is the most tropical of all the continents because most of the continent lies within the tropics. Africa extends about 8,000 kilometres from the northern to the southern tips. It also extends 7,500 kilometres from east to west.

Fig. 18.1: Countries in Africa

18.2 Relief Drainage, Climate and Vegetation

(a) Relief of Africa

Relief means elevation of land. It also means variation in height of land surface. It explains how the land is being shaped into hills and valleys.

Most of Africa consists of an extensive plateau of ancient rocks called basement complex rocks. The general plateau surface drops abruptly onto a narrow coastal plain. This extensive plains of Africa include the sand dune plains of the Sahara and Namib deserts, the deltaic plains of Nile and Niger Deltas, and the wide coastal plains of Western and North Eastern Africa.

The African landscape is made up of fold, volcanic and block mountains, residual hills, rift valleys and plains of different types and dimensions. In Africa, the only fold mountains are the Atlas of North Africa and the Cape fold mountains of South Africa.

The main highlands found in West Africa are Adamawa highlands, Jos plateau, Guinea and Fonta Djallon. In North Africa, the ranges include Ahaggar, Tibesti, Tasilli, Dafur and Atlas mountains while South African areas are mainly plateux with continuous escarpment (highest in the Drakensberg mountains). In East Africa, there are mountains of great heights such as Cameroon mountains, Ethiopian mountains, Mt. Elgon, Mt Ruwenzori, Mt Kenya and Kilimanjaro Mountain (5,895m) which is the highest mountain in Africa. The Cameroon, Tibesti and Ahaggar plateau are still above 1,000metres.

Another striking feature is the Great East African Rift valley which starts from the Jordan valley to the Red Sea and from Ethiopia and East African highlands to Lake Malawi from where it runs northwards to Lake Albert. The land is highest in the east, south and extreme north of the continent where heights of over 1,500metres attained in the Ethiopian highlands, East African and central South African plateau. The land is lowest (below 500metres) in the Congo, Chad, West Sahara and the Nile basins.

(b) Drainage of Africa

Africa is drained in separate basins occupied by rivers and lakes of diverse types and origins. It has a large number of important rivers. The longest river in Africa is Nile (6,600km) followed by River Zaire (over 5,500km) which is the second longest and the largest in volume. River Niger (4,200km) and River Zambezi (over 3,000km) are the third and fourth longest. River Niger takes its source from Guinea highlands. The major sources of water for the Nile are the Blue Nile and the Albara which take their rise from the Ethiopia highlands. Another long river is the Orange River Zambezi in the most impressive water fall in Africa.

The shorter rivers include Limpopo, Volta, Gambia and Senegal. The rivers discussed above empty their waters into the ocean. This is the normal drainage. The inland drainage refers to the rivers that do not find their way to the sea.

Characteristics: African rivers are often seasonal, muddy in the wet season, exhibiting various patterns, seasonal in flooding, interrupted by rapids and cataracts, shallow, full of debris, and with the development of sand banks.

Lakes

Lakes can be grouped into the following categories:

(i) Inland drainage lakes: The inland drainage lakes of Africa include Lake Chad, Okavango swamp, Makarikari salt pan and Lake Turkana.

(ii) Lakes caused by gentle warping of the surface: These include Lakes Chad, Victoria, Okavango Kioga, Makarikari and Etosha Pan. Lake Victoria is the largest of all these lakes with 83,000 sq. km lying on the East African plateau, partly in Kenya, Uganda and Tanzania.

(iii) Lake occupying rifts: These include Lakes Tanganyika (the biggest), Malawi, Turkawa, Kuri, Albert and Edward.

(iv) Man-made lakes: It arises from the damming of rivers from Hydro Electric Power (H.E.P.). These lakes include Lake Kainji on the Niger, lake Nasser on the Nile, Lake Volta on the volta and Lake Kariba on the Zambezi.

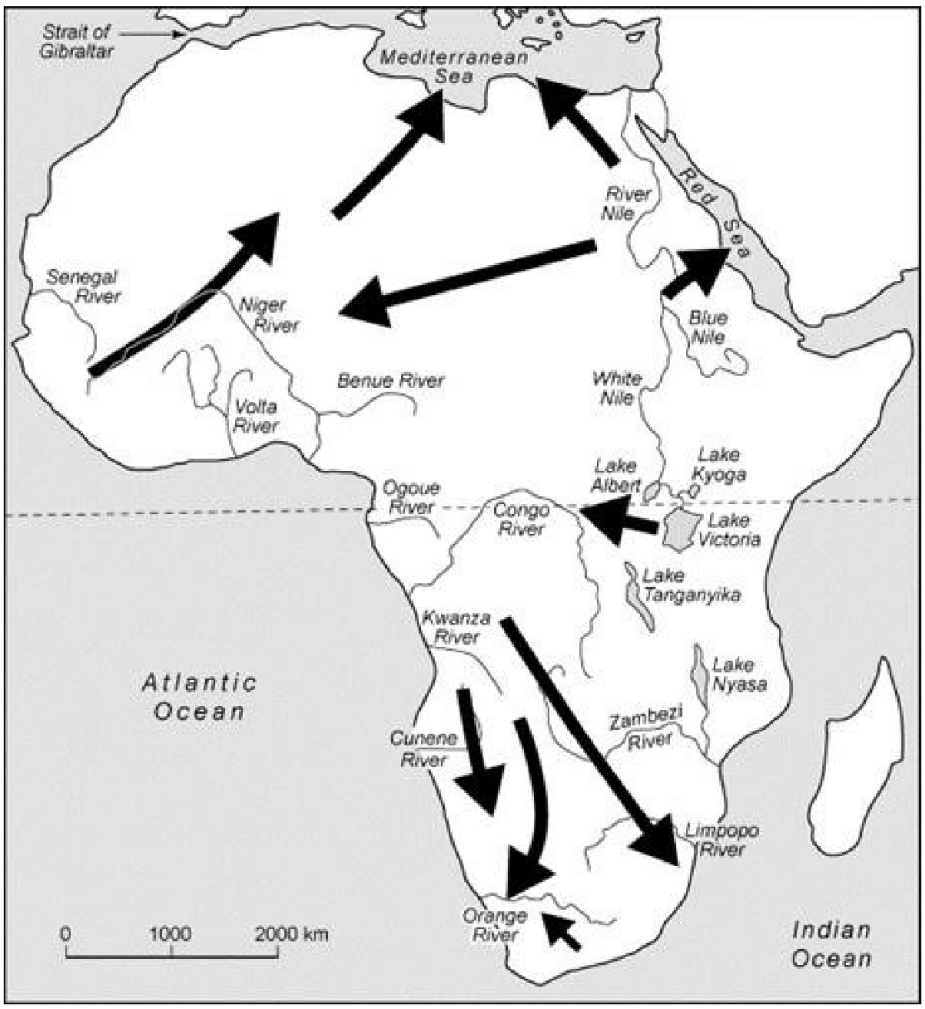

Fig. 18.2: Drainage of Africa

Uses: Rivers and lakes provide food (fish), means of transportation, H.E.P, water for domestic purposes, water for industrial purposes, agricultural improvement and employment opportunities for fishermen.

(c) Climate of Africa

Over the larger part of Africa, the average temperature is over 20^0C all the year round. Variations in temperature are not only caused by altitude but also by ocean currents. For example, the north-west coasts of Africa are washed by the cool canaries current. The temperature of this current is low for two reasons:

(i) it moves from cooler to warmer parts of the ocean and

(ii) there is upwelling of cooler water along the western coasts of Africa because of the off-shore winds. The cold Benguela current also lowers the temperature of the coastlands of South-West Africa.

The currents of the Indian Oceans bring large amounts of heated water, and move along the coasts of Africa, both north and south of the equator. The effect of the warm currents is felt especially in the north of the continent. Consequently, seasons are determined by rainfall.

As the climate is regulated by the apparent movement of the sun between the two tropics and the associated movement of winds, it (the climate) tends to change in a similar way in the direction of the north or south of the equator. This gives rise to symmetrical climatic zones/types in Africa.

Climatic Types

Africa has the following climatic types/zones:

1. Equatorial climate: It is also called Wet Tropical Climate. This is found between latitude 4^0S and 8^0N mainly along the coast of West Africa, East Africa and in the Central Africa (mainly in the Zaire basin).

Characteristics

(i) Equatorial climate has a mean annual rainfall of over 2,000mm which is well distributed throughout the year.

(ii) There is high constant temperature with the mean annual temperature of about 27^0C and the annual range of about 3^0C.

(iii) It has high humidity all year round with double maxima of rainfall.

(iv) Equatorial climate has conventional rainfall accompanied by lightening and thunder.

The natural vegetation consists of dense evergreen rainforests, in parts almost impenetrable and difficult to clear.

(b) Tropical climate: The main areas are the interior of West Africa and most of east and south – central Africa.

Characteristics

(i) High temperature of about 27^0C all the year round.

(ii) The daily range of temperature is between 14^0C and 17^0C while the annual range is 8^0C and over.

(iii) The mean annual rainfall is about 1200mm.

(iv) The rainfall is convectional with single maximum.

(v) A distinct dry season extending for about 3months as we move away from the equator.

(vi) The climate is characterized by hot, rainy and cool dry season.

(c) Humid sub-tropical climate: The climate occupies a fairly narrow belt in the coastal areas of Mozambique and Natal. It owes its existence to the on-shore trade winds which bring summer rain.

Characteristics

(i) Annual rainfall of between 1150mm along the coast and 900mm in the interior.

(ii) Temperatures are fairly high throughout the year.

(iii) Summer temperature is about 26^0C while the winter temperature is about 13^0C.

(d) Mediterranean climate: In the continent of Africa, Mediterranean type of climate is experienced in the north – western portion around the Mediterranean Sea and in the southern part around Cape Town.

Characteristics

(i) The region enjoys their rainy season during the winter period.

(ii) Several local winds like Sirocco and Mistral are common around the Mediterranean Sea.

(iii) Moderate annual range of temperature.

(iv) Very dry and warm summers.

(v) Wet, mild winters.

(vi) Summer temperatures are usually up to 25^0C.

(vii) The winter rainfall amounts are usually around 625mm.

(e) Hot desert climate: The hot Sahara desert is found in North Africa and Kalahari and Namib deserts in southern Africa. It caused by cold canaries current in North-West Africa.

Characteristics

(i) The rainfall is not only scarce but unreliable.

(ii) The rainfall is characterized by convectional and violent thunderstorms.

(iii) The annual rainfall is about 250mm.

(iv) The average summer temperature is round 30^0C.

(v) High rate of evaporation

(vi) They experience high temperate throughout the year with hot days and chilly nights.

(f) Highland climate: This climate is found mainly in Ethiopia, Kenya and Adamawa highlands.

Characteristics

(i) Low temperatures because of the effect of altitude on temperature.

(ii) They experience fairly high rainfall amounts.

(iii) It has the single rainfall maximum typical of the tropical climate.

Factors affecting climate of Africa

The major factors affecting the climate of Africa include:

(i) Latitude: It refers to the location of a place on earth's surface in relation to the equator. Africa extends from about latitude 35^0N to about 35^0S with the equator cutting across the continent mid-way. Tropical climates are found around the equator. The temperate climates (e.g. the Mediterranean climate) are found as one moves far away from the equator.

(ii) Altitude: It refers to the height of a place above the sea level. There is a say that "the higher we go, the cooler it becomes". High altitude areas generally receive more rainfall than their surrounding lowland areas (e.g. Jos Plateau, Ethiopian highlands). Temperatures decrease with increasing altitude at an average rate of 6.5^0C for every 1,000m of vertical ascent.

(iii) Continentality: Distance from the sea has a significant effect on the climate of various places in Africa. The warming and cooling effects of the sea are felt in areas closer to the coast than the interlands. Rain

bearing winds drop more water in the coastal areas than in the hinterland.

(iv) Ocean currents: Climate of places can be influenced by ocean currents. Coasts washed by warm currents experience heavier rainfall e.g. West Africa. Apart from lowering temperatures, cold currents do not bring rain.

(v) Airmasses: The two major airmasses are the north-east trade winds and the south west monsoon/trade winds. The north east trade winds are dry and dusty because they are coming from the desert and bring harmattan to most parts of West Africa. The dry winds penetrate the southern hemisphere and brings dry conditions to interior locations. On the other hand, the South West trade winds blow across the sea to the land and bring much rainfall to West Africa.

The meeting point of the two major air masses is called Inter Tropical Convergence Zone (ITCZ). It is the zone of weather instability i.e. the two air masses trying to overcome each other.

(vi) Cloud cover: Cloud reduces the amount of solar radiation reaching the earth's surface and the amount escaping from the earth's surface into space. The heavy cloud cover affects the temperature of the equatorial region. It makes the day temperature to be constantly high. Clouds are essentially great reservoirs of water in the atmosphere and account for the greatest proportion of precipitation on the earth's surface.

Vegetation of Africa

The natural vegetation of any region is controlled by the climate, slope, soil and human activities. The main factor is climate, especially rainfall and temperature.

Types of Vegetation

The vegetation types in Africa include:

(i) Equatorial/Tropical rain forest: It is found in equatorial climate. Forest of this type extends from West Africa to the Zaire basin. The equatorial forest reappears in East Africa and in the Madagascar Republic, where the temperature is always high and the rainfall heavy.

The forest consists of tall and robust trees of up to 60metres high. At times, the branches may form a canopy.

Characteristics

(a) The forest is green throughout the year.

(b) It is characterized by a wide variety of tree species e.g. Obeche, Ebony, walnut mahogany, etc.

(c) Three distinct layers of trees are recognized in tropical rain forest i.e. upper layer (40 – 60metres high, middle layer (20-40metres high) and the lower layer (5-20metres high).

(d) The equatorial environment is economically very useful (sources of wood, economic crops raw materials, staple crops and abundant animal life.

(ii) Mangrove Forest: It occurs along the coast of some places in Africa. There are different trees that can survive in waterlogged conditions. These trees have aerial roots to carry out respiration. It is found in Niger Delta and the Ria coast of Guinea Bissau.

(iii) Savanna vegetation: The savanna vegetation is nearest to the equatorial forest. It is called Guinea Savanna. Trees and grasses

decrease through the Sudan Savanna to the Sahel Savanna. The appearance of the savanna varies with the seasons.

Characteristics

(a) The grasses are tall in guinea savanna and shorter in Sudan and Sahel savanna.

(b) The trees are deciduous (shed their leaves during dry season).

(c) There are variations in the appearance of plants found in the different localities.

(d) The trees are shorter and smaller in size.

(e) The heat in the region gives rise to high rate of evaporation and transpiration.

(iv) Desert Vegetation: Desert vegetation appears in areas with an annual rainfall of less than 250mm. There is no continuous plant cover and large areas have no vegetation whatsoever. The few plants found are xerophytic (ability to survive drought).

Characteristics

(a) High temperature between 30^0C and 60^0C.

(b) Vegetation in desert is sparse or scarcity.

(c) The oases and river courses support permanent vegetation.

(d) Aridity or rainlessness is common.

(e) Common vegetation includes grass shrubs and herbs.

(v) Montane/High land vegetation: This type is found mainly in Ethiopia, Cameroon and East African mountains. The areas experience low temperatures because of the effect of altitude on temperature but they experience fairly high rainfall amounts. Light vegetation is found on

the leeward side of the highland while thick forest is found on the windward side.

Characteristics

(a) The grass gets poorer and poorer with increasing altitude.

(b) Cultivation of crops and rearing of animals are associated with this area.

(vi) Warm Temperate Forest: This type of climate is found in South-east Africa (Natal). The area experiences a warm, moist-summer and a cool dry winter.

Characteristics

(a) The temperate forest is open unlike the equatorial forest.

(b) The trees are smaller and the species fewer.

(c) The trees are mostly evergreen with smaller leaves.

(d) Tropical and sub-tropical hardwoods are found.

(e) Tropical crops grow well e.g. banana, tobacco and sugar cane.

(vii) Temperate grassland: This type of climate is found in South Africa between the Drakensberg Mountain and the Kalahari Desert. It is called veld. It has light rainfall with an average of about 500mm and extreme of temperature.

Characteristics

(a) The dominant vegetation cover is grass which stretch for kilometres without trees.

(b) Presence of tall grasses and short scattered trees.

(c) The trees are deciduous (shading of leaves during dry season)

(viii) Mediterranean Forest: This vegetation is found in the north-western portion and south western summer and wet, mild winter. The region enjoys its raining season during the winter period.

Characteristics

(a) The vegetation is rich in winter and poor in summer.

(b) The vegetation includes evergreen forest of oaks, ever green coniferous forest of pines, cedars and cypresses.

(c) There are also Mediterranean bushes, shrubs and grasses.

(d) Citrus crops like oranges, lemon, limes, citrous and grape fruits are cultivated.

(e) Transhumance is widely practised.

18.3 Population and Ethnic Groups

The estimated population figure for Africa was 654million in 1990. With an increase at the rate of 2.8% per annum, rose to 1.1billion by the year 2010AD and rises to 1.54 billion by 2025.

Estimated Population of 3 Continents (in Millions)

Continent	1990	2000	2010	2025
Africa	654	815	1085	1540
Asia	3207	3612	4207	4998
Latin America	453	606	609	729

Estimates from population reference bureau, Inc 1875. Connecticut Avenue, Washington D. C. 209, USA.

The population of Africa increases rapidly as a result of polygamy, giving birth to many children and absence of family planning.

A large population of adolescents entering the labour forces which was designed for smaller populations, creates unemployment and alienation unless new opportunities are created quickly enough in which productive workers outweigh young and elderly dependants. Yet, the 16-30 age range is associated with risk-taking, especially among males.

In general, youth bulges (youth bulge is a large youth population that cannot find jobs) in developing countries are associated with higher unemployment and as a result, they become a source of a heightened risk of violence and political instability.

Many countries with the largest youth bulge are African nations severely afflicted by the HIV/AIDS epidemic, which has decreased overall lifespan dramatically. As at 2012, the largest youth bulge is found in Zimbabwe which has a population structure with 56.57% between ages 15 and 29.

Population density: This refers to the number of people per unit area. It is calculated by dividing the population by the land area it occupies. For instance, the estimated population of Africa as at 2010 was 1,085,000,000 and the land area is 30,036,821 sq km. Therefore, the population density of Africa is

$$\text{Population density} = \frac{\textit{Total Population}}{\textit{Land Area}}$$

$$= \frac{1{,}085{,}000{,}000}{30{,}036{,}821} = 36 \text{ persons per sq. km.}$$

Population Problems

The existing population problems in Africa include:

1. The problem of rapid population growth which may bring unemployment/underemployment, pressure on natural resources and

social amenities, etc.

2. Food production is increasing in arithmetic progression. This means that food production is not keeping pace with population growth. So, feeding the population is a problem.
3. Resources which should have been used for major developmental projects are diverted to education and other child-welfare programmes.
4. As a result of strong attachment to culture, some people desire male children so they continue to proliferate until they have many of them.
5. Some parents believe in having so many children to assist them on agricultural activities.
6. Some religions approve polygamy while some others disapprove family planning control/techniques.
7. Most people in rural areas tend to migrate to urban areas to avoid pronounced poverty in rural areas.

Summary

- Africa is made up of several countries. It extends from latitude 35^0N to latitude 34^0S and also stretches from 17^0W and 52^0E of the Greenwich Meridian.
- The important rivers in Africa include Nile, Zaire, Niger, Zambezi, Volla, Limpopo, Orange, Gambia and Senegal. The lakes are Chad, Trukana, Victoria, Okavango, Kioga, Albert, Edward and Tangayika.
- Climatic types of Africa include equatorial climate, tropical climate, humid sub-tropical climate, Mediterranean climate, hot desert climate and highland climate.
- The vegetation types of Africa are tropical rain forest, mangrove forest, savanna vegetation, mountain vegetation, warm temperate forest, temperate grassland and Mediterranean forest.

- The population of Africa increases rapidly as a result of polygamy, absence of family planning, low infant mortality and high birth rates due to improved medical facilities.

Revision Questions

Objectives

1. Which of the following best accounts for the decline in the importance of rail transport in Africa?
   A. Low volume of goods available for transportation
   B. Threat of retrenchment of railway workers
   C. High competition from road transport
   D. Short distances covered by railways
   E. Frequent accidents recorded on railways
2. Which of the following dams in Africa provides both migration water and hydro-electricity?
   A. Gezira B. Kainji C. Cabora Bassa D. Aswan E. Akosombo
3. Which of the following vegetation types is most common in Africa?
   A. Steppe B. Campos C. Selvas D. Savanna E. Prairies
4. Africa has the largest potential reserves of hydro-electric power in the world due to
   A. its many plateaus. B. its high demand for power.
   C. the abundant rainfall and waterfalls there.
   D. the presence of very long rivers.
   E. the high growth of industrial development.
5. In Africa, the veldt is located in the
   A. Western coastland B. Eastern coastland C. Continental interior
   D. extreme north and south E. southern part
6. In Africa, coral reef coasts are largely located in the

A. north-west B. south-west C. west D. south E. south-west

7. The rampant famine in some parts of Africa is caused by all the following except

A. unstable prices paid to farmers for their products.

B. unreliable rainfall. C. civil strife and unrest.

D. ravage of crops by pests. E. infertile soil and soil erosion.

8. The southernmost latitude in Africa is approximately

A. 20^0S. B. 30^0S. C. 35^0S. D. 40^0S. E. 45^0S.

9. Which of the following does not explain the poor development of inland waterways in Africa?

A. Lack of goods to carry along the routes

B. Presence of plains and waterfalls

C. Obstruction of floating vegetation

D. high seasonally of the rivers

E. crossing of many political boundaries by the rivers

10. The initial problems of rail and road development in Africa were due primarily to the

A. dense population. B. inadequate mineral resources.

C. difficult physical environment. D. insufficient agricultural resources.

Essay

1. On an outline map of Africa, mark and name the:

(i) Equator (ii) Greenwich Meridian (iii) Tropics of cancer and capricon (iv) Cape of good Hope (v) Cape Blanca (vi) Quattara depression (vii) Zambezi River

b. In what four ways can the relief of Africa pose problems to the construction of trans-Africa highways from Cape of Good Hope to Cairo?

c. What can be done to minimize these problems? (SSCE 1992)

2a. Draw an outline map of Africa, and on it locate the

(i) Rivers Zambesi, Nile and Zaire

(ii) Mounts Cameroon, Drakensberg and Tibesti

(iii) East Africa rift valley

b. Using specific examples explain three effects of mountains on the climate of Africa.

c. Describe any four ways in which the highlands of Africa are of economic importance. (SSCE 1997)

3a. Draw a map of Nigeria and on it, locate the following:

(i) River Nile, Niger and Limpopo

(ii) Lakes Victoria, Volta and Chad

(iii) Cape verde, Cape Agulhas and Cape of Good Hope

b. Enumerate the benefits of rivers in Nigeria.

4a. On a map of Africa, locate and name:

(i) The River Nile, Senegal, Volta and Zambesi

(ii) The Cameroon mountain, Kilimanjaro mountain and Ruwenzori mountain

(iii) an are with tropical climate

b. Explain the effects of ocean currents and prevailing winds on the climate of Africa South of the Zambesi.

5a. Enumerate the factors affecting the climate of Africa.

b. Discuss the population problems of Africa.