NATIONAL OPEN UNIVERSITY OF NIGERIA

SCHOOL OF HEALTH SCIENCES

COURSE CODE: **PHS 202**

COURSE TITLE: **GEOGRAPHY FOR COMMUNITY HEALTH**

COURSE GUIDE

PHS 202
GEOGRAPHY FOR COMMUNITY HEALTH

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Introduction

PHS 202 - Geography for Community Health is a 2-credit course for students in the B.Sc. Community Health Programme.

The course consists of 15 study units. PHS 202 will introduce you to Geography with particular reference to the physical environment, natural and human resources of Nigeria. The course will cover the definition of Geography as well as the description of map which is a tool of the geographer. The course will expose you to the physical structure of Nigeria as the foundation of mineral, water and forest resources which provide the framework for the economic activities of the people.
At the end of the course, you are expected to show a clear understanding of the geographical aspects of Nigeria. The knowledge to be acquired will prepare you to face the challenges of resources development in Nigeria which is a growing economy.

This course guide provides you with the content of the course, how to work through the course materials as a distance learner who is faced with the task of private study. Tutorial sessions are to provide necessary support you require to succeed as a private learner.

What you will Learn in this Course

Geography is a spatial science which is a social science discipline that explains man-environment interaction. You will be exposed to the spatial analytical methods of location, interaction and pattern description.

Course Aim

This course aims at giving you in-depth knowledge of geographical phenomena as they relate to the Nigerian space.

Course Objectives

To achieve the aim stated above, the course spells out the overall objectives. At the beginning of each unit, specific attainable objectives are stated. You are advised to go through them carefully before reading the unit. You will have to refer to them during the course of your study so as to measure your progress. You are encouraged to always make reference to the unit objectives after completing each unit. This is the way you can be sure that the right thing has been done in the unit.

The wider objectives of the course are given below. By meeting these objectives, you should have achieved the aims of the course as a whole. On successful completion of this course, you should be able to:

explain the term geography and mention its branches
describe the changes that have affected the political structure of Nigeria
describe and explain the main features of the relief of Nigeria
locate the pattern of rainfall on the map of Nigeria and explain the influence of ITDZ on rainfall distribution
identify the major vegetation belts on the map of Nigeria
discuss the major population problems facing Nigeria and suggest solutions to these problems
highlight the relationship that exists between rural and urban settlements in Nigeria
enumerate the economic importance of either petroleum oil or coal to the Nigerian economy
describe the uses of the forest resources other than timber exploitation
mention major sources of water in Nigeria and explain the problems of water development
discuss the contributions of agriculture to the economic development of Nigeria
describe the pattern of food crops production in Nigeria
define the zones of the country where animal husbandry is widely practiced
understand the tourism potentials and problems of development in Nigeria
explain the problems facing resources development in Nigeria.

Working through this Course

For the successful completion of this course, you are expected to go through the units, the recommended textbooks and other materials relevant to the course. At some point during the course, you are expected to submit the tutor-marked assignments. This will be followed by an end of term examination. The following are the components of this course:

1. The Course Guide
2. Study Units
3. Textbooks
4. Assignment File
5. Presentation Schedule

Study Units

This course consists of 3 modules and 15 study units, which include:

Module 1

Unit 1 Definition and Practice of Geography
Unit 2 Geo-Political Setting of Nigeria
Unit 3 Physical Features: Geology, Relief and Drainage of Nigeria
Unit 4 Climate of Nigeria
Unit 5 Soils and Vegetation of Nigeria

Module 2

Unit 1 Population of Nigeria
Unit 2 Settlements in Nigeria: Rural Settlement
Unit 3 Urban Settlements in Nigeria

Module 3

Unit 1 Mineral Resources of Nigeria
Unit 2 Forest Resources of Nigeria
Unit 3 Water Resources of Nigeria
Unit 4 Agricultural Production in Nigeria: Crop Cultivation
Unit 5 Animal Husbandry
Unit 6 Tourism in Nigeria
Unit 7 Resources Development Problems in Nigeria

Unit Resources Development Problems in Nigeria

Each unit contains tutor-marked assignments which you are to attempt. Expectedly, it is believed that the exercise will assist you to achieve the stated objectives.

Textbooks and References

Agboola, S. A. (1979). *An Agricultural Atlas of Nigeria*. London: Oxford University Press.

Ajaegbu, H. I. (1976). *Urban and Rural Development in Nigeria*. Ibadan: Heinemann Educational Books (Nig) Ltd.

Buchanan, K. M. and Pugh J. C. (1969). *Land and People in Nigeria*. London: London University Press.

Kogbe, C. A. (1976). *Geology of Nigeria*. Lagos: University Press.

Mabogunje, A. L. (1968). *Urbanisation in Nigeria*. London: University of London Press.

Oguntoyinbo, J. S., Areola, O. O. & Filani, M. O. (eds.) (1978) *A Geography of Nigerian Development*. Ibadan: University Press.

Onokerhoraye, A. G. (1984). *An Introduction to the History of Geographic Thought.* Benin City: The Geography and Planning Series.

Udo, R. K. (1970). *Geographical Regions of Nigeria*. London: Heinemann.

Assignment File

The assignment file will be the tutor-marked assignment which will form part of the continuous assessment of the course. There are 15 assignments in this course guide (for your evaluation) with each unit having a tutor-marked assignment for you to facilitate your learning as an individual.

Presentation Schedule

The presentation schedule in this course sets important dates for completion of each tutor-marked assignment. Please try to adhere to the time schedule.

Assessment

The assessment of the course has two parts which include the tutor-marked assignment and written examination. In carrying out the assignments, you should apply information, knowledge and strategies acquired during the course. The assignments must be submitted to your tutor for formal assessment in accordance with the stated presentation schedules. The works submitted to your tutor for assessment will carry 40 per cent of your total course work. At the end of the course you will sit for a final written examination of two hours. This examination will carry 60 per cent of your total course work.

Tutor–Marked Assignments (TMAs)

This course guide contains 15 tutor–marked assignments. You are advised in your own interest to attempt and submit the assignments within the stipulated time in your study center. The information and materials contained in your reading and study units will assist you to

complete the assignments. Try to attempt all and feel free to consult any of the references in order to broaden your view and deepen your understanding of the course. Extensions will be granted for submission after the deadline on exceptional cases.

Unit 1	Define geography and mention its main branches.
Unit 2	Explain the changes that have brought about the present political structure of Nigeria.
Unit 3	Attempt a brief description of the relief of Nigeria and explain its importance.
Unit 4	Discuss the role of ITDZ in the spatial distribution of rainfall in Nigeria.
Unit 5	Describe the location and structure of the tropical rain forest in Nigeria.
Unit 6	Account for the high population density recorded in either south–western Nigeria or Kano close settled area.
Unit 7	Examine the causes of depopulation of rural Nigeria and suggest ways of arresting the situation.
Unit 8	Identify 5 major problems facing urban centers in Nigeria and suggest ways out of these problems.
Unit 9	'Minerals are wasting assets.' Discuss this statement in relation to either coal or tin ore mining in Nigeria.
Unit 10	On a map of Nigeria, locate the savanna belt and discuss the economic significance of this region.
Unit 11	Explain why rain–fed farming is still widely practiced in Nigeria.
Unit 12	Discuss the pattern and importance of cash crop production in Nigeria.
Unit 13	Highlight the features of plantation agriculture and its confinement to the forest zone.
Unit 14	Locate the cattle rearing zone on a map of Nigeria and discuss the major factors that influence pastoral farming.
Unit 15	Enumerate the major problems facing resources development in Nigeria and proffer solution to these problems.

Final Examination and Grading

The final examination of PHS 202 will be a 2–hour paper which will carry 60 per cent of the total course grade. The examination will consist of questions which are similar to the tutor-marked assignments that you have previously come across. Furthermore, all areas of the course will be evaluated. Make sure you create enough time to revise the entire course.

Course Marking Scheme

The following table contains the course-marking scheme.

Assessment	*Marks*
Assignment 1 – 15	15 assignments for the best 4. Total is 10% x 4 = 40 %
Final examination	60 % of overall course marks
Total	100 % of course marks

Course Overview

The table below shows the units and the number of weeks required to complete the assignments.

Unit	Title of Work	Week activity	Assessment
	Course Guide	Week 1	
	Module 1		
1	Meaning and Practice of Geography		
2	Geo–Political Setting of Nigeria		
3	The Physical Structure of Nigeria		
4	The Climate of Nigeria		
5	The Vegetation of Nigeria		
	Module 2		
1	The Population of Nigeria		
2	Settlement in Nigeria Rural Settlements		
3	Settlement in Nigeria: Urban Settlement		
	Module 3		
1	Mineral Resources in Nigeria		
2	Forest Resources in Nigeria		
3	Water Resources in Nigeria		
4	Agricultural Production: Crop Farming in Nigeria		
5	Animal Husbandry in Nigeria		
6	Tourism in Nigeria		
7	Resources Development Problems in Nigeria		

How to Get the most out of the Course

In distance learning, the study units replace the university lecture. This is one of the greatest advantages of distance learning. You can read and work through specially designed study materials at the pace, time and place that suit you best. Think of it as reading the lecture notes instead of listening to a lecture. In the same way a lecturer might set you some reading task; the study units tell you when to read your other materials. Just as a lecturer might give you an in–class exercise, your study units provide exercise for you to do at appropriate points.

The following are practical strategies for working through the course:

Read the course guide thoroughly
Organise a study schedule
Stick to your own created study schedule
Read the introduction and objectives very well
Assemble your study materials
Work through the unit
Keep in mind that you will learn a lot by doing all your assignments carefully
Review the stated objectives
Don't proceed to the next unit until you are sure you have understood the previous unit
Keep to your schedules of study and assignments
Review the course and prepare yourself for the final examination.

Facilitators/Tutors and Tutorials

There are eight hours of effective tutorial period provided in support of this course. Details will be communicated to you together with the name and phone number of your tutor through the study centre.
Your tutor will mark and comment on your assignments, keep a close watch on your progress and any difficulties you might encounter and also provide assistance to you during the course. You must ensure that you submit your assignment as and at when due. You will get a feedback from your tutor as soon as possible on the assignments.
Do not hesitate to contact your tutor or study center on phone or e–mail in case of any of the following circumstances:

you do not understand any part of the study or the assigned reading,
you have questions or problems with an assignment, tutor's comments or grading of an assignment.

You are encouraged to attend the tutorials to allow for face-to-face contact with your tutor and ask questions which you need answers to immediately. It is also an opportunity to discuss any grey area with your tutor. You can equally prepare questions to the tutorial class for meaningful interactions. You are sure to gain a lot from actively participating in the discussions.

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MODULE 1

UNIT 1 DEFINITION AND PRACTICE OF GEOGRAPHY

CONTENTS

1.0 INTRODUCTION

Having gone through the course guide, you should have a general overview of the contents of this unit and how they relate to the course itself. This unit assists you to understand the concept of geography as a discipline and its utilitarian value. By the time you go through this unit, you will learn more on the concept of geography and also about the map as a major tool of geography.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

define the concept ‘geography’
identify the different branches of geography
explain why the geography of Nigeria is important
state the different types of maps and their uses.

3.0 MAIN CONTENT

3.1 Definition of Geography

Geography is derived from the Greek word 'Geo', which means the earth and 'graphie' which means to write. Geography literally means writing about or describing the earth. Modern geography has gone beyond what Fairgrieve (1930) refers to as "the description of the earth's surface." Later definitions emphasise the relationships between man and his environment. As Biddle (1970) points out, Hartshorne's definition of geography has been widely accepted. According to Hartshorne, "geography is concerned to provide an accurate, orderly and rational description and interpretation of the variable character of the earth's surface." This definition is widely accepted because it emphasises the scientific approach through classification and interpretation. It also recognises the dynamic nature of geographical phenomena and the uniqueness of areas. The only shortcoming in Hartshone's definition is its failure to mention man explicitly.

3.2 Branches of Geography

Traditionally, geography is divided into two: physical and human geography.

Physical geography or earth science (in America) studies the spatial distribution and functioning of natural phenomena on the earth's surface. It includes the study of landform, weather and climate, plants, animals and the study of spatial relationship between different things other than man. Under physical geography are sub-disciplines like geomorphology, biogeography, climatology and mathematical geography. Human or cultural geography is concerned with the study of the relationship between man and his environment. Special studies within this branch include:

(a) **Economic geography** - studies man's economic activities viewed spatially.

(b) **Physical geography** or earth science is concerned with the spatial distribution.

(c) **Political geography** is concerned with the study of political activities of man impressed upon the landscape.

(d) **Urban geography** is the study of the forms and functions of towns and cities.

(e) **Historical geography** is concerned with the study of how the geographical changes of the past affect the geography of the present time, especially activities of man.

(f) **Medical geography** which is a relatively new aspect of geography is concerned with the study of effects of location and climate upon health. It is also called health geographics.

3.3 Why the Geography of Nigeria?

The geography of Nigeria is the study of the spatial distribution and functioning of natural and human phenomena such as the landforms, weather, climate, biogeography and human population. The spatial relationships among the various elements are emphasised in the study of geography. The answer to the question of why we study the geography of Nigeria is found in the location and size, relief and drainage, climate, vegetation and animals, and human population because these various elements are unique and important in themselves.

Nigeria is a large country in size and population. The population of Nigeria which is high constitutes about one-fifth of the total population of West Africa. Two out of every three West Africans are Nigerians. The second reason the geography of Nigeria is important is that Nigeria is one of the major oil producers in the world. The country is the major oil producer in West Africa. Another reason for studying the geography of Nigeria is that the country is a free and democratic society. Nigeria leads the Economic Community of West African States (ECOWAS). The country is an important member of the Africa Union (AU) and the United Nations (UN). It is the giant of Africa in terms of wealth, human resources and political status. Nigeria is looked upon as an example and a pacesetter by other African countries.

3.4 Map as a Tool of Geographers

A map is the aerial representation of the earth's surface on paper. Maps can be classified on the basis of subject matter. Different subject matters on maps are used to describe the maps. Thus, there are physical, political, climate and vegetation maps. A physical map of a place shows both its relief (i.e. highlands and lowlands) and drainage (i.e. the river system). A political map depicts an area with its division into different political units like states, provinces, local government areas, etc. A weather map shows the weather chart of a place. This is the type of map that is commonly used by ship captains and pilots. A vegetation map shows different vegetation types of an area.

The second type of map is described on the basis of map scale. Thus, there are large-scale maps (plans), atlas maps, topographical maps and small scale map. Map reading is an important component of geographical studies.

3.4.1 Map Scale

A map scale defines the relationship between the distance on a map and the actual distance on the ground. It is the ratio, proportion or relationship between measurement on the map and the actual measurement on the ground. Thus, there are three types of map scale which include: Statement Scale, Representation Fraction (or R.F.) and Linear Scale.

(a) Statement Scale

This is a scale given in form of statement and figures. For example:

(i) 1cm represents 1km
(ii) 1 inch represents 10ft
(iii) 2cm represents 10 km

The first example means one centimeter on the map represents one kilometer on the ground. This is a small scale. The second example means one inch on the map represents ten feet on the ground. This is a large scale. And the third example tells us that 2 cm on the map represents 10 km on the ground.

(b) Representative Fraction (R.F.)

This is a type of scale that is expressed in the form of fraction or in the form of a ratio. As a rule, both the numerator and the denominator are expressed in the same unit. The distance on the map is the numerator and is always (1) while the denominator stands for the distance on the ground. Below are some examples:

(i) $\frac{1}{1000}$ or 1: 1000 or 1cm: 1000cm

(ii) $\frac{1}{100,000}$ or 1: 100,000 or 1cm: 1km

(iii) $\frac{1}{36,360}$ or 1: 63, 360 or 1 inch: 1 mile

(c) Linear Scale

This is a straight line that has been divided into some parts to show distances on the ground. There are two sides to the scale. The sub-divisions to the left of zero represent the secondary section, while the full divisions to the right of zero represent the primary section.

In order to use the linear scale, straight edges (of paper for example) or any string which does not stretch are used to measure the distances on the map. To find the equivalent distance on the ground, the paper or string is stretched along the linear scale and read off.

3.4.2 Uses of Scales

Apart from the use of scales to measure the distance on the map in relation to the distance on the ground, scales can be converted from one type to another. Any one of the three types of scale can be expressed in any one of the other types, although in standard maps the three types are usually given below the maps.

(a) Conversion of R.F. to Statement Scale

Example:

Convert 1:100,000 to Statement.

The scale can be read as one centimeter represents one hundred thousand centimeters or1 cm represents 100,000cms.

Since the right side of a statement scale is usually in kilometers or miles, conversion into kilometers is the best thing to do, since 100, 000cms equal 1 kilometer. Then we divide it by 100, 000 i.e.

$$\frac{100,000}{100,000 = 1km}$$

Therefore, the answer is 1cm represents 1km.

(b) Conversion of Statement Scale to R.F.

Example:

Convert 1cm represents 1000metres to R.F. since for R.F. both sides of the ratio must be the same unit, then the 100metres must be converted to centimeters.

The scale above can be re-written as 1cm represents 10,000cm.

Expressing this as R.F. reads:

1: 10,000 or $\frac{1}{10,000}$

4.0 CONCLUSION

Geography is the study of the spatial distribution and functions of natural phenomena on the earth's surface. You have learnt the various branches of geography which include physical and human geography. The sub-themes in these two branches which you have learnt include geomorphology, climatology, biogeography and mathematical geography - making up the physical geography; and economic geography, political geography, urban geography and historical geography - making up the human geography. You should also at this point be able to enumerate the major reasons the geography of Nigeria is important. This unit has taught you the major tool of geography, which is map. Different types of maps which include topographical, atlas, and plans have been discussed.

5.0 SUMMARY

This unit has focused on the definition of geography as the spatial analysis of various environmental elements. Geography has two major branches of physical and human aspects. The sub-disciplines of geography are based on the two divisions. The concept of map as a tool for representing aerial unit of things on paper has been explained.

6.0 TUTOR-MARKED ASSIGNMENT

1. Using your own words, define the subject-matter of geography.
2. Mention the major divisions of geography.
3. Describe the major types of maps.

7.0 REFERENCES/FURTHER READING

Abler, R.; Adams, J.S. & Gould, P. (1980). *Spatial Organisation: The Geographer's Views of the World*. New Jersey: Prentice Hall.

Gilson, P. (1980). *Success in Geography: Physical and Mapwork.* London: John Murray (Publishers) Ltd.

Hilton, T.E. (1990). *Practical Geography in Africa.* Essex: Longman Group Ltd.

UNIT 2 GEO-POLITICAL SETTING OF NIGERIA

CONTENTS

1.0 INTRODUCTION

This unit will enable you to understand the position of Nigeria in the world, in Africa and in West Africa. In this unit, you will also learn how Nigeria evolved and how certain government policies have affected the geo-political structure of the country.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

locate Nigeria on the world and Africa maps
name the various states and their capitals
draw a map of Nigeria showing the 36 states and Abuja
state the major changes that have affected the geo-political structure of the country since independence.

3.0 MAIN CONTENT

3.1 The Size and Location of Nigeria

Nigeria is not centrally placed in West Africa because it is in the most easterly coastal location of the region. The country shares boundary with Niger Republic in the north, Republic of Cameroon in the East, Benin Republic in the West and Atlantic Ocean in the south. The country is therefore surrounded almost entirely by the Francophone (French-speaking) countries. The only exception is in the south where the Gulf of Guinea and Bight of Biafra berth the country. Nigeria is located between latitudes 4^0 and 14^0 north of equator and 3^0 and 15^0 E of the Greenwich meridian. The country is located in the tropical region.

The total area of the country is about 923,768 square kilometers or about one-seventh of the total mainland area of West Africa. The greatest distance from east to west is approximately 1,300 kilometers while the distance from north to south is about 1,100 kilometers.

3.2 The Evolution of Nigeria as a Political Entity

Nigeria became a British colony in several stages during the latter half of the 19th century and the early years of the 20th century. The area has a long and complex history dating back many centuries before the earliest Portuguese made contacts by sea with the Nigerian coast in the 15^{th} century.

3.2.1 Pre-Colonial Period

The earliest indigenous states which inhabited parts of the present day Nigeria were found in the north where the Hausa and Kanem Borno states grew up as a result of the Trans-Saharan trade. Later states like Yoruba and Benin developed further in the southern forest. These southern states had early contacts with European traders along the coast. Eventually, these contacts developed into slave trade. After the ban of slave trade, European traders engaged in legitimate trade of ivory and palm oil; traders, missionaries and explorers began to move into the interior of Nigeria. By the 1680s the stage was set for the beginning of true colonial period.

3.2.2 Colonial Era

The colonial era in Nigeria started in 1861 when Lagos was annexed to the British colony. At different stages, Nigeria was acquired as a British colony. The name Nigeria was coined by Flora Shaw in the London Times in 1897 when she used the name to describe the land under the British control around River Niger.

As a political entity, what is known as Nigeria today dates back to 1900 when the northern and southern parts of the country were administered as two separate protectorates. In 1914, the two protectorates were amalgamated into a single entity under the administration of Lord Fredrick Lugard as the Governor-General.

The boundaries of Nigeria were determined by negotiation with the French government in the west and in the north; and with the German government in the East. Many other aspects of life in Nigeria today reflect the colonial legacy. For example, English, the official language; the railway transport pattern and some of the crops that are grown were derived from Britain.

3.2.3 Independent Nigeria

After series of constitutional developments, Nigeria achieved full independence on October 1, 1960. The only major territorial change after independence came when the Northern British Cameroon elected to join Nigeria with Southern Cameroon choosing to be part of Cameroon Republic. In 1963, Nigeria gained the status of a republic. At the time of independence in 1960, Nigeria operated a federal government based on three regions. These regions included the northern region with capital at Kaduna; the eastern region with the capital at Enugu and the western region with capital at Ibadan. In 1963, the mid-west region was created with the capital at Benin City.

At the beginning of a civil war in 1967, the geo-political structure of Nigeria was altered through the creation of twelve states by the Gowon administration. This structure emerged from the division of the Northern Region into six states and both the Eastern and Western Regions into six states.

Table 1: Nigeria's Twelve States and their Respective Capitals (1967-1976)

	State	Capital
1.	East-Central	Enugu
2.	Benue-Plateau	Jos
3.	Kano	Kano
4.	Kwara	Ilorin
5.	Lagos	Ikeja
6.	Mid-Western	Benin-City
7.	North-Eastern	Maiduguri
8.	North-Central	Kaduna
9.	North-Western	Sokoto
10	Western	Ibadan
11.	Rivers	Port-Harcourt
12.	South-Eastern	Calabar

After continued pressure for the creation of more states based on the reason of inadequate distribution of socio-economic activities and political imbalance, the military government under General Murtala Muhammed created seven new states on February 3, 1976, increasing the number to 19.

Table 2: Nigeria's Nineteen States and their Respective Capitals (1976-1986)

	State	Capital
1.	Anambra	Enugu
2.	Bauchi	Bauchi
3.	Bendel	Benin-City
4.	Benue	Makurdi
5.	Borno	Maiduguri
6.	Cross-River	Calabar
7.	Gongola	Yola
8.	Imo	Owerri
9.	Kaduna	Kaduna
10	Kano	Kano
11.	Kwara	Ilorin
12.	Lagos	Ikeja
13.	Niger	Minna
14	Ogun	Abeokuta
15.	Ondo	Akure
16.	Oyo	Ibadan
17.	Plateau	Jos
18	Rivers	Port-Harcourt
19.	Sokoto	Sokoto

In 1986, two additional states, Katsina and Akwa Ibom were created. In 1991 the number of states increased to 30 with the creation of nine additional states by General Ibrahim Babangida. On December 12, 1991, the federal capital was moved from Lagos to Abuja. In 1997, the government of General Sani Abacha created six additional states to increase the number of states to the present 36.

Fig. 1: Location of States in Nigeria

	States	Capital
1.	Abia	Umuahia
2.	Adamawa	Yola
3.	Akwa Ibom	Uyo
4.	Anambra	Awka
5.	Bauchi	Bauchi
6.	Bayelsa	Yenegoa
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	Dutse
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	Oshogbo
30	Oyo	Ibadan
31	Plateau	Jos
32	Rivers	Port-Harcourt
33	Sokoto	Sokoto
34	Taraba	Jalingo
35	Yobe	Damaturu
3.6	Zamfara	Gusua
	Federal Capital Territory (FCT)	Abuja

The various changes in the geo-political structure of Nigeria have influenced, to a large extent, its socio-economic developments. The creation of new states has led to an increase in development centres as the various state capitals have concentrations of socio-economic activities and infrastructures. There were three centres of development (Kaduna, Enugu and Ibadan) at independence in 1960. The number increased to 12 in 1967, 19 in 1976, 21 in 1986, 30 in 1991 and 36 in 1997. The state capitals have become centres of attractions for numerous government offices; industries, infrastructural facilities such as roads, water, electricity and commercial activities are drawn to these capitals. Large populations are attracted to state capitals.

4.0 CONCLUSION

In this unit you have learnt about the long journey Nigeria has taken to become a nation state. You have learnt about the size and location of Nigeria which is a tropical country. You also learnt about the colonial influence on the naming and organisation of Nigeria into a political unit. The various changes that have affected the political structure of Nigeria since 1960 up to date have been discussed. You have learnt how Nigeria moved from a three-regional structure to a 36-state structure. You have been taught how Nigeria has moved from a mere geographical expression to an authentic nation state.

5.0 SUMMARY

Nigeria is a big country with an area of about 923,000sqkm. It is has experienced political changes which have moved her from a 3-region structure in 1960 to a 36-state structure in 1997.

Nigeria, because of its size and resources, has become the giant of Africa and a pacesetter to other African countries.

6.0 TUTOR-MARKED ASSIGNMENT

1. Discuss the influence of colonial rule on the political structure of Nigeria.
2. Explain the main advantages of state creation and local government reforms in Nigeria.

7.0 REFERENCES/FURTHER READING

Adejuyigbe, O. (1978), "Social Factors in the Development of the Political Map of Nigeria," *In:* J.S. Oguntoyin, *et al*; *A Geography of Nigeria Development*. Ibadan: Heinemann Educational Books.

Filani, M.O. (1995). *The Geography of Nigeria*, Ibadan: Centre for External Studies, Faculty of Education, University of Ibadan.

UNIT 3 PHYSICAL FEATURES: GEOLOGY, RELIEF AND DRAINAGE OF NIGERIA

CONTENTS

1.0 INTRODUCTION

This unit is concerned with the description of the structure, relief and drainage systems of Nigeria. You will learn about the various types of rocks, their formations and characteristics. You will be introduced to the variety of physical conditions in Nigeria.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

state and explain the main features of the relief of the country
identify and locate the major rivers on the map of Nigeria
state the major characteristics of the Nigerian rivers
explain the uses and limitations of the rivers.

3.0 MAIN CONTENT

3.1 The Geology of Nigeria

The major types of rocks found in the country are the Pre-Cambrian, the Cretaceous, Tertiary and Volcanic rocks. These rocks make up the geological structure of Nigeria.

(a) The Pre–Cambrian Rocks

These rocks are also known as the basement complex rocks and cover about 50 % of the country. They consist of hard and old rocks made up of mainly igneous and metamorphic (changed) rocks. They are found in Western, Northern and Eastern parts of Nigeria. The true types of

basement complex rocks which exist in Nigeria are the ancient granites, the undifferentiated basement rocks and the younger metasediments.
The older or ancient granites merge into gneisses and migmatites. The younger granites consist of biotite and riebeckite granites with considerable mineralisation. It is from this rock type that cassiterite (tinstone) is derived. The ancient granites are found in Kogi, Bauchi, Kaduna (around Zaria), Niger and Sokoto States.

The metasediments consist of schist, quartzite, calcisilicate, metaconglomerates, amphibolites and metamorphic iron beds. The quartzites give rise to impressive ridge and hills in Oyo, Sokoto and Benue States.

(b) The Cretaceous Sedimentary Rocks

The sedimentary rocks occur in large basins. They comprise the lower and upper cretaceous, the tertiary marine and continental deposits and the recent or quatemary marine or continental deposits.

The sedimentary rocks are much younger than the basement complex rocks. They consist of hardened sediments deposited some millions of years ago. The lower cretaceous rocks consist of sandstones, shale and thin beds of limestone and extend inland from the Gulf of Guinea up to the Cross River, the Benue and Gongola valleys. The upper cretaceous marine sedimentaries are mainly sandstones, the Lafia sandstones and the Abeokuta and Rima formations.

The tertiary marine deposits consist of the coastal plain sands, the Bende-Ameki formation of clays and clayey sandstones, and the Benin sands. These deposits are thicker in the Niger Delta. The deposits which consist of clays and sandstones covered with wind-laid sand deposits are known as Kerri-Kerri beds around Lake Chad. Tertiary deposits also occur in Sokoto and Kebbi States especially around Gwandu settlement. Recent deposits of sand, fine silt and mud are found along the coast and river valleys.

(c) The Igneous Volcanic Rocks

These rocks cover two major areas where they occur as lava flows on the Biu and Jos plateau. The volcanic rocks of Jos plateau consist of young granite and basalt flows and cones. The Biu plateau consists mainly of basalt flows with cones in large numbers around Mubi and Yola.

3.1.1 Relief of Nigeria

Relief simply means height above sea level. Generally, the country can be divided into lowlands and highlands. Highlands are areas with elevation of over 300 meters above sea level while lowlands are lands below 300 meters above sea level. The relief types of Nigeria are closely related to the underlain rocks from which they are derived.

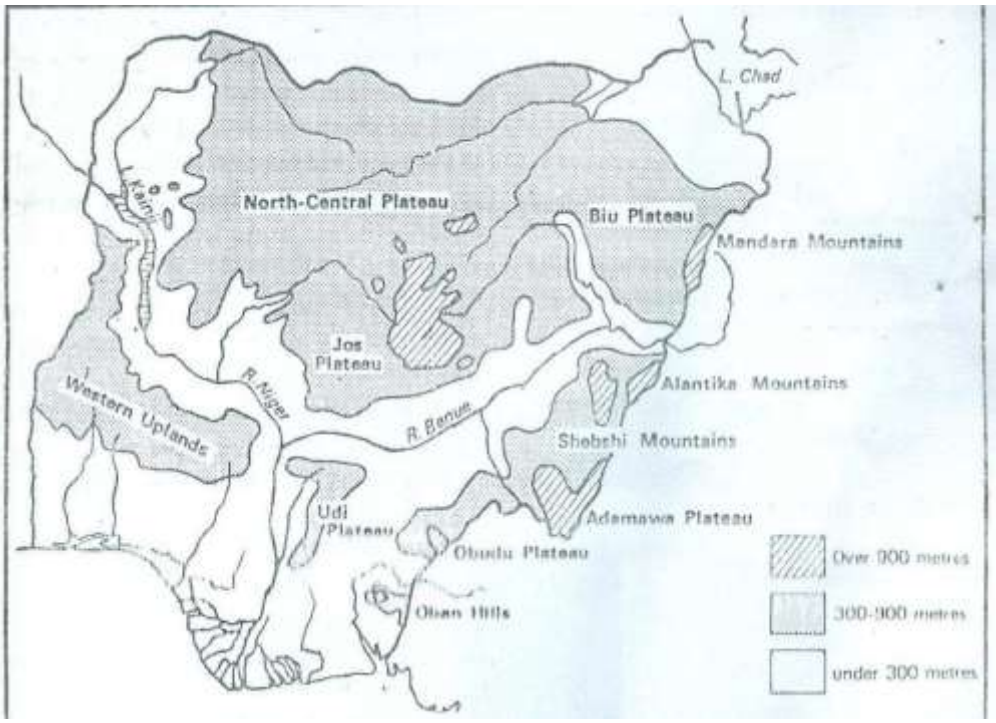

Fig. 1: Relief of Nigeria

(a) Highlands

Nigeria is highest to the east, west and north, where land is generally over 1,500m, 300m and 600m above sea level respectively. In the east, especially along Nigeria-Cameroon border, are the eastern and northeastern highlands which include the Oban hills, Obudu plateau,

Adamawa plateau, Shebishi mountains, Alantika mountains and Mandara mountains. In the northern part of the country are the North Central plateau, Jos plateau (about 1,500m) and Biu plateau. In the Southwest are the Western uplands (about 300 to 600m) with the Idanre hills attaining heights of about 1,000m. The Udi plateau in the east, which is over 300 metres, breaks the monotony of the lowlands in the area.

On the basement complex are the rounded hills known as inselbergs and when eventually broken up by weathering along their joints they

produce groups of hills known as Kopjes which are common around Akure in Ondo State. The inselberg landscapes provided defensive sites for refuge settlements during the period of the slave trade.

In the volcanic areas, the older basalt surfaces have been chemically weathered and decomposed to clays. More recent, volcanic eruptions have produced extensive basaltic flows which have waterfalls such as the Gurara falls in pre-existing river valleys which they have blocked. There are crates around Jos and downstream of the Benue-Gongola confluence. The Biu plateau contains cones which are composed of ash, lavas and tuffs.

(b) Lowlands

The lowlands which are below 300m are found along the coast and along the main river valleys such as the Niger, Benue, Sokoto and Rima. The major lowland areas include the Sokoto plains, the Niger-Benue valleys, the Chad basin and coastal plains. The lowlands fall roughly within the area of sedimentary rocks which have mostly remained stable since their formations. In the south they constitute near-level plains which rise gradually from the coast to the interior. The sea front is characterised by a continuous beach line behind which are low sand ridge and spits. The Niger Delta is the most important landform along the coastline which consists of a series of creeks and channels extending 250 km to the north-west.

3.2 The Drainage System

Nigeria has three distinct drainage patterns which include (a) short swift-flowing coastal rivers, (b) the inland drainage system of the Chad basin and (c) the long plateau rivers.

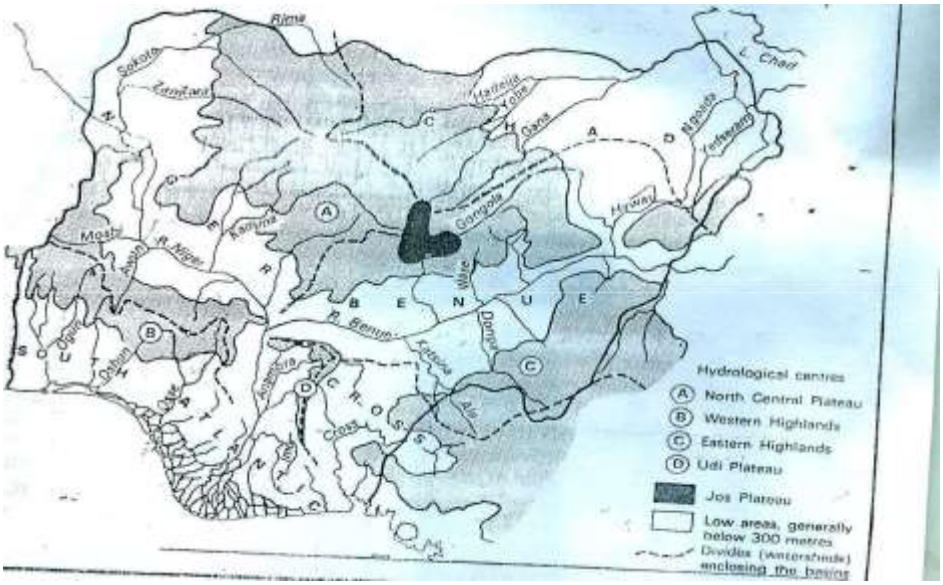

Fig. 2: Drainage System of Nigeria

The main drainage divide for the coastal rivers is the African plateau edge which is about 250km from the coast. West of the Niger are six main rivers which include the Ogun and the Osun and flow across the basement complex for about 80km, cutting down to the hard metamorphic rocks before crossing the sedimentary surface to the sea. East of the Niger are the Imo, Cross and Anambra rivers which flow entirely over sedimentary rocks in cut-out valleys.

The inland drainage system consists of the Yobe and its tributaries which rise from the Jos plateau and flow into the Lake Chad. The Lake also receives water from the Ngadda and Mbuli rivers which have their sources from the Biu plateau. Only about 10 % of the whole Chad basin of about 27,000 square km lies in Nigeria. The lake is very shallow with a mean depth of 1-1.5m. The lake is decreasing in size due to a number of factors which include the location near the Sahara Desert and the seepage of the water into nearby oasis and rivers.

The Niger-Benue river system occupies 65 per cent of Nigeria. The Niger and its tributaries such as the Sokoto and Kaduna are disrupted by rapids and falls. Only about one-third of the total length of about 4,200km of River Niger flows in Nigeria. The Benue which is the second largest river in Nigeria is a tributary of the Niger. The remaining tributaries of the Benue River are the Gongola, the Donga and the Katsina-Ala rivers. The Benue flows into the Niger at Lokoja to form a confluence. The Benue is free from rapids and falls, a situation that makes it navigable to Garua in Cameroon Republic. The Niger Delta is characterised by numerous distributaries, levees and meandering water channels.

The rivers of Nigeria are used for domestic purposes like cooking, drinking and washing. Other uses include irrigation farming, hydro-electricity generation, navigation/transportation, fishing, tourism and recreation. Nigerian rivers are hampered by seasonal flow due to fluctuation of rainfall, rapids and falls, presence of debris and mud, floods and silting. Efforts are being made by the federal government to dredge the Niger in order to improve its use for navigation.

4.0 CONCLUSION

You have learnt in this unit that the major geological structure of Nigeria which consists of the basement complex and sedimentary rocks determines the relief and drainage patterns. You have learnt that relief is a measure of land height while drainage refers to the surface water flow system. This unit has taught you the major relief features which include highlands and lowlands. You have been taught that the highlands include the western uplands, the north central plateau, the Jos plateau,

the Biu plateau, the Udi plateau and a series of plateaus and mountains on the eastern border with Cameroon Republic among which are the Oban hills, Shebishi mountains, Mandara and Adamawa mountains. You have learnt about the three major drainage systems which include the short, swift-flowing rivers of the coastal area, the inland drainage system with Lake Chad as the centre and the Niger-Benue system. Some of the uses of the rivers discussed include domestic, irrigation, transportation, fishing and recreational uses. You have learnt that most of the rivers suffer from seasonality of rainfall, rapids and falls, silting and presence of debris and mud.

5.0 SUMMARY

Nigeria has a variety of physical conditions one of which is its structure, relief and drainage. The main rocks types are the Pre-Cambrian, the cretaceous, volcanic and sedimentary rocks. The well-defined relief units in the country include the North Central Hausa plateau, the Jos plateau, the Niger-Benue trough, the South-Western and South-Eastern uplands, the Cross River Basin and the North-East group of highlands. The major rivers are the Niger, Benue, the Cross River and the Anambra. Some of the relief features affect settlement sites, agricultural practices and fishing.

6.0 TUTOR-MARKED ASSIGNMENT

1. Outline and explain the main features of the relief of Nigeria.

2a. Describe the drainage patterns of Nigeria.
b. Locate the following rivers on a sketch map of Nigeria: Sokoto, Gongola, Ogun, Cross and Benue.
3. Discuss the uses of the major relief features of Nigeria.

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UNIT 4 CLIMATE OF NIGERIA

CONTENTS

1.0 INTRODUCTION

This unit is a continuation of the discussion on the physical conditions of Nigeria. It will enable you to know the climate of Nigeria. As discussed in unit 2, the latitudinal position of Nigeria which extends from latitude 4^0N to 14^0N makes it possible for the country to enjoy a tropical climate which is characterised by two distinct seasons: wet and dry seasons. The duration and intensity of the wet season steadily decreases from the coast to the interior while the dry season steadily increases in the same direction. The discussion in this unit will emphasise the major climatic elements of wind, temperature, humidity and rainfall.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

distinguish the two major seasons in Nigeria
identify and explain the determinant factors of the climate
state the major rainfall zones
mention and explain four specific climatic elements.

3.0 MAIN CONTENT

3.1 The ITD and Climate of Nigeria

Climate is the average weather condition of the atmosphere over a very long period of time. Nigeria enjoys a tropical climate with distinct wet and dry seasons. There is a steadily decrease from the coast towards the hinterland in the duration and intensity of the wet season. The two seasons are influenced by the prevalence of the moist maritime

southwesterly air mass from the Atlantic Ocean and the dry continental north easterly air mass from the Sahara Desert. The boundary zone of the two differing air masses is called the Inter–Tropical Convergence Zone (ITCZ) or Inter–Tropical Discontinuity (ITD). The ITD oscillates between north and south to determine the weather types over the country.

The surface position of the ITD in Nigeria varies both seasonally and daily. The ITD assumes its average northernmost position close to 20^0N latitude in August while the average southern most position is reached in February at about 7^0 latitude. The position of the ITD determines which parts of the country have rainfall and which parts do not have rainfall at a particular period of the year.

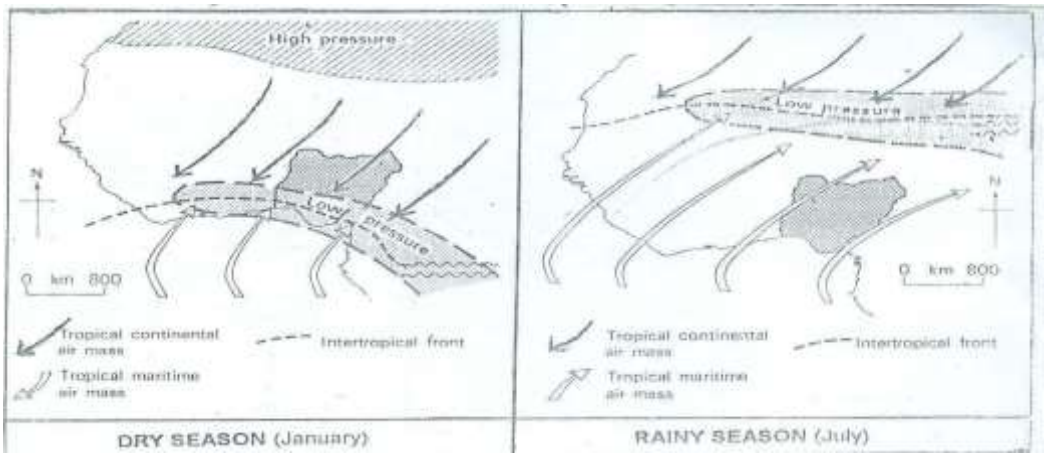

Fig.1: Movement of Air Masses

3.2 Climatic Elements and Types of Climate in Nigeria

The major climatic elements in Nigeria are wind, temperature, rainfall and humidity. Each of these elements is influenced by such factors as latitude, altitude, ocean currents and distance from the sea. All these elements and factors combine to determine the climate of Nigeria.

3.2.1 Temperature

Temperature which is a degree of hotness or coldness of a place varies over the country but is generally high throughout the year. Temperature is low (24^0C) in the south because of the cooling effects of the Atlantic Ocean while it is high in the North with over 28^0C because it is far from the sea. The temperature also varies with altitude. High plateau and mountains like the Jos plateau, Adamawa Mountain and Obudu plateau have lower temperatures (20^0C). Temperatures also vary seasonally being higher during the rainy season in the north but low in the south

during the dry harmattan. The annual range of temperature is between 2^oC and 3^0C in the south while that of the north is 9^0C. Diurnal (daily) variations of temperatures also occur and are more than the seasonal or annual variations. Afternoon temperature may be as high as 35^0C while the night temperature, particularly in the north may be as low as 10^0C in the dry season.

3.2.2 Wind

Wind is air in motion. Four types of air are noticeable in Nigeria. These are:

Tropical Maritime Air Mass (MT): This is also known as the southwesterly trade wind which blows across the Atlantic Ocean towards the coast of Nigeria. The wind is moist and warm; hence it brings rainfall to the country with the wettest part along the coast. It usually starts in March or April and ends in October with a short dry period in August called August break.

Tropical Continental Air Mass: This wind is also referred to as the northeasterly trade wind. It blows across the Sahara Desert; hence it does not bring rain but rather cold, dusty and dry air known as harmattan. It starts in November and ends in February.

Equatorial Easterlies: This wind blows around the equator from the east; it has some influence on the north easterly and southwesterly winds when they meet. The north east and the south west trade winds meet along a slanting surface or inter–tropical front where they continuously rub against each other. The area above the front where the two air masses mix as a result of the rubbing is called the inter-tropical convergence zone. When the equatorial easterlies cut below the south west trade wind, they cause torrential rainfall which is accompanied by thunder and lightning. The rainfall, which is called line squall, usually occurs in the afternoon and lasts just for a few minutes. When the wind cuts below the north east trade winds, it causes whirling, cyclonic winds carrying dusts and pieces of paper. This wind is called dust devil.

Land and Sea Breezes: These are local winds that are restricted to the coastal areas. These winds blow alternately between land and sea on a daily basis due to differential heating of the land and sea. The sea breeze blows from the cooling of the land which is heated. Land breeze blows from the land to the sea during the night when the land becomes cooler than the sea, having lost much of its temperature at a much faster rate than the sea. Due to low pressure on the sea and high pressure on the land, land breeze blows from the land to the sea during the day.

3.2.3 Humidity

This is the ratio of amount of water vapour that the air is holding. Relative humidity has spatial and seasonal variations due to variations in temperatures. Thus, relative humidity is higher in the south than in the north. Relative humidity is higher in the rainy season when it is usually more than 60 %. During the dry season in the south, it is between 40% and 60%; it is less than 40% in the north. The coastal areas usually have monthly mean relative humidity of over 90% in June while in the north, between January and April; the mean values are as low as 20 or 25%. Diurnal values may fall from 30% at dawn to 10% in the afternoon, especially during the harmattan period.

3.2.4 Rainfall

Rainfall in Nigeria is highly seasonal in character. Rainfall is unevenly distributed due to the factors of latitude, the ITD and altitude. Rainfall is higher in the south where it lasts for about 8 months to 12 months than in the north where it lasts just for about 4 months to 6 months. Apart from duration, rainfall generally decreases from the coast inland. The mean annual rainfall varies from more than about 2000mm (80ins) along the coast to less than 600mm (24ins) in the North East and North West of Nigeria.

The effect of altitude is shown in the heavy rainfall in highland areas. For example, on the Jos plateau, rainfall is more than 1,500mm (60ins) which is higher than the values of about 750mm to 1,000mm normally received in other areas along the same latitude.

Relief rainfall experienced in high altitude is also known as orographic rainfall. In the south, there are two peaks of rainfall called double maxima which occur around June/July and September/October. In the north, there is only one peak of rainfall, which is known as single maximum.

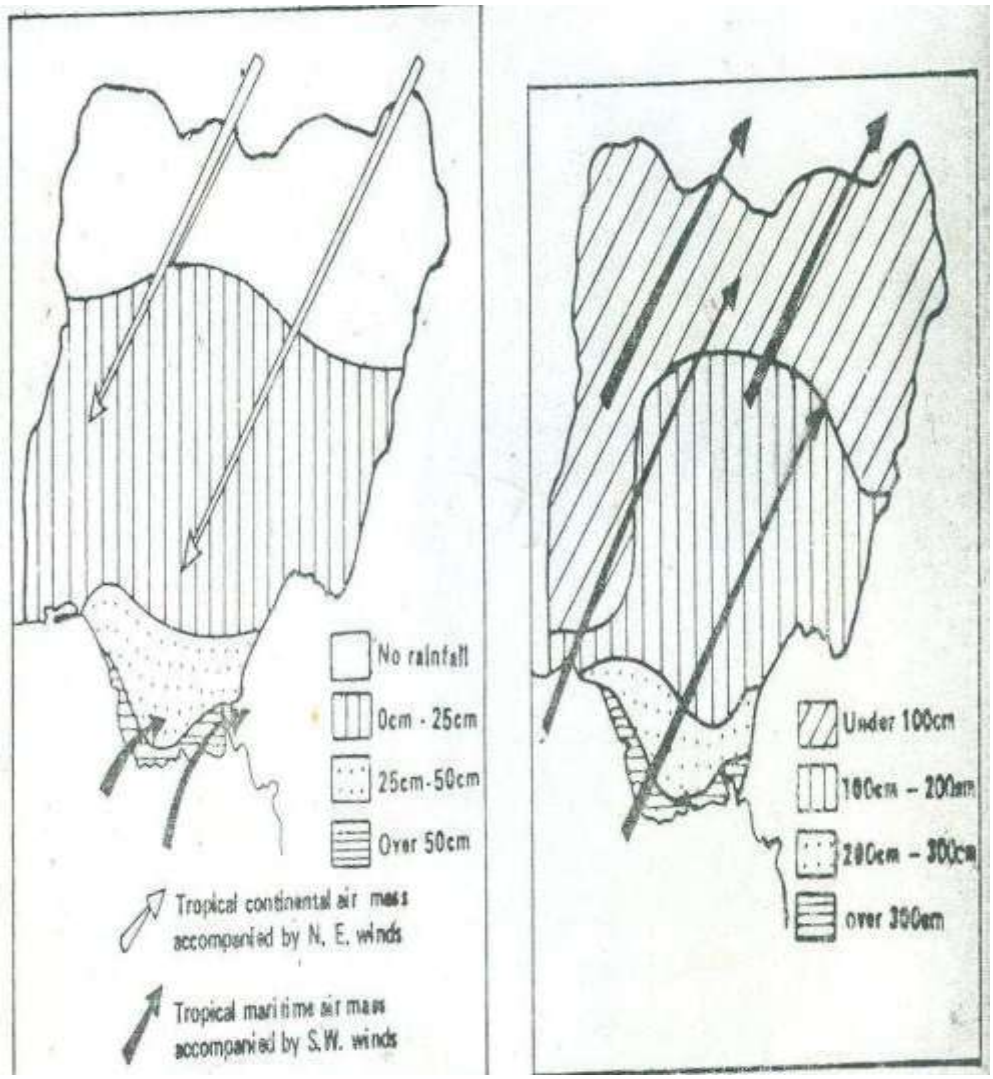

Fig 2 (a) Nigeria: Winds and rainfall; January (b) Nigeria: Wings and Rainfall; July

3.3 Seasons in Nigeria

There are two seasons in Nigeria: rainy season and dry season. The rainy or wet season occurs between March and October. The rainy reason is characterised by high temperatures, which vary between 33^0C in the north and 27^0C in the south due to the effect of the sun. In the south, the ocean reduces the temperatures. Low pressure occurs in the north while high pressure prevails in the south especially in June when the sun is on the Tropic of Cancer. The prevailing wind from the south west blows from the high pressure area to the low pressure area thus pushing tropical continental air mass toward the north where the inter tropical front is formed. Heavy rainfall is recorded during this season due to the factors of latitude, the movement of the ITD temperatures, humidity, etc.

The dry season occurs between November and February when the prevailing wind is the northeasterly wind which brings cold, dry and dusty harmattan. During this season the temperature is lower in the North than in the South due to the position of the sun on the tropic of Capricorn. North has high pressure while low pressure prevails in the South. The North East trade wind pushes the South West trade wind towards the coast. There is absence of rainfall because the northeasterly wind blows from the Sahara Desert.

As it will be shown later, the climatic characteristics influence agricultural practices and natural vegetation in the country. The climatic elements affecting crop production include the duration, variability of rainfall, temperature, moisture condition, insolation and winds.

3.4 Climate Change

The climate of the world has been unstable and unpredictable in recent times. There has been a change in the rainfall pattern, temperature and humidity of the world making weather forecasting more difficult. It has been observed that the world is experiencing great heat due to global warming. Atmospheric pollution has been ongoing since the time of Industrial Revolution in Europe. The last part of the 20th century witnessed unprecedented increase in the amount of wastes emitted into space. Some of the pollutants are in form of gas elements such as carbon monoxide, carbon dioxide, acetaldehyde from burning fuels as well as organic vapour, chlofluoride, fluorine, chlorine and bromine from industrial processes. Other sources consist of suspending particles such as ashes, smokes, lead particles, etc. The emission of pollutants into the atmosphere has led to the depletion of the ozone layer which protects the earth from the great heat coming from the sun.

The effects of increase in atmospheric pollutants include formation of acid rain and increase in ultraviolet rays, hence higher incidence of skin cancers. Nigeria, being part of the larger globe has experienced climatic change over the years. The country had experienced low rainfall and drought conditions in the last 100 years or so. There was a remarkable decline in rainfall between 1903 and 1913 and between 1915 and 1935. There followed a countrywide of low rainfall and drought from about mid-1930s to mid-1950s leading to local famines. Between 1961 and 1970, there was an increase in rainfall especially in the south below latitude 8^0 N. Between 1964 and 1973, Kano had only 80% of its mean annual rainfall and this dropped to about 40% in 1973. The period between 1969 and 1973 was marked by severe drought, which was the worst in the history of the Sahelian region. It is being speculated that the changing pattern of rainfall can be linked to the shifts in the pattern of ITD as part of a worldwide climatic variability.

4.0 CONCLUSION

In this unit you have learnt about the climatic conditions of Nigeria. You have learnt about the various climatic elements of temperature, wind, rainfall and humidity. You have also learnt about the factors which influence the climate such as latitudinal extent and altitude. Rainfall and temperature in particular vary spatially from north to south and some effects of altitude are seen in the amount of rainfall and temperatures on highlands like Jos Plateau and Adamawa mountains. In the south an average annual rainfall is about 2,000mm while it is just about 600mm in the north.

You have learnt about the two major seasons of Nigeria which are wet and dry seasons. You must be able to explain the characteristics of each type of season. You have learnt about climate change which is phenomenon Nigeria is experiencing as part of the global community.

5.0 SUMMARY

The climate of Nigeria is influenced by the country's latitudinal extent which makes it to have tropical climate. The effects of other factors like altitude air masses and the movement of the ITD on the climate are far-reaching. Mean temperature and rainfall increase from the coast to the hinterland. Mean monthly humidity values vary from 90% in the coastal area to between 20 and 25% in the north. The climate change being experienced is as a result of the global warming which results in the disequilibrium of the climatic regime.

6.0 TUTOR-MARKED ASSIGNMENT

1. Define ITD and explain briefly its movement and its effects on the pattern of rainfall in Nigeria.
2. Mention and discuss three major factors that influence the distribution of rainfall in Nigeria.
3. Which of the following aspects of Nigerian climate increase from south to north?

(a) length of the dry season,
(b) average annual rainfall,
(c) relative humidity,
(d) dependability of rainfall.

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UNIT 5 SOILS AND VEGETATION OF NIGERIA

CONTENTS

1.0 INTRODUCTION

Having learnt about the climate of Nigeria in the last unit it is pertinent to know the effects of climate on the physical conditions of Nigeria. Soils and vegetation are direct products of climate. Soils and vegetation are closely associated with each other in Nigeria. Some problems which have arisen from the management of soils and vegetation form part of the discussion in this unit. The expansion of desert to the areas adjoining the Sahara Desert (known as desert encroachment) is included in this unit.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

explain the character of soils in Nigeria
state the uses and problems of soils
identify and locate the major vegetation belts on the map of Nigeria
examine the influence of the major vegetation belts on the socio-economic development of Nigeria.

3.0 MAIN CONTENT

3.1 The Soils

The major soil types in Nigeria are related to four primary factors: climate, vegetation, lithology and topography. Climatic factors determine the rate and depth of weathering and soil formation, which

generally decrease from the humid south to the sub-humid north. The soil moisture content is greatly influenced by the rainfall distribution in the country. The density of vegetation also affects the soil friability and the organic content. The distribution of major soil types is related to the parent rock which influences such properties as soil depth, texture and stoniness, porosity, moisture condition, nutrient status and the proportion of weatherable minerals. At the local level, slope influences soil formation because it has been observed that a sequence of soils known as soil catena is related to local topography.

3.1.1 Soil Types

The generalised main soil groups of Nigeria include:

(a) hydromorphic soil
(b) ferruginous or lateritic soils
(c) ferralitic or rain forest soils
(d) ferrisols
(e) regosols.

(a) Hydromorphic Soils

These are seasonally or permanently waterlogged soils developed on alluvial marine and fluvio-marine deposits. They have whitish or grayish colours due to the reduction of the oxides in the soil. These soils are found in the coastal depression and dominated by the raffia palm. There are also broad flood plains along Rivers Ogun, Osun, Cross and the Enyong Creeks. In the Niger Delta, the soils are covered with the mangrove forests.

(b) Ferruginous Soils

This is probably the most important group of soils in Nigeria because they cover the greatest proportion of the country and support the cultivation of cash and food crops. The soils are derived mainly from the basement complex rocks and old sedimentary rocks. In the north, however, they developed on drift deposit covering these rocks. The soils are generally deeper, moister and distinguished by a marked differentiation of horizons in the more humid forest and derived savanna regions to the south. Clayey soils develop on the low, smooth hill crests and upper slopes while the lower slopes have sandy soils. The ferruginous soils partly make up for their chemical deficiencies by having a strong stable structure arising from high kaolin content and the free oxides and particle aggregation.

(c) Ferralitic Soils

These are old deep, highly weathered red soils of the rain forest. The soils are strongly leached and possess a mixture of hydrated oxides and aluminum. These soils are deficient in weatherable mineral reserves due to weathering and leaching. The clay content is of the kaolin type with low water and nutrient holding capacities. Consequently, the productivity of these soils depends on the supply of organic materials which are lacking due to the reduction in the vegetation arising from clearing. The clayey ferralitic soil has a higher fertility than the sandy type. The ferralitic soils also suffer from erosion especially on the scarp lands of Anambra State.

(d) Ferrisols

These are the deeply weathered red and yellowish brown soils which developed on the sandstone formations in the Guinean savanna zone. They represent transitional soils which resemble the ferralitic soils but having less well-developed profiles, a higher nutrient content, a better structure and higher biological activity. Low rainfall and sparse population in the region reduce leaching and make the soils protected under dense woodland vegetation which ensures high supply of humus. Lateritic iron caps develop on the tops of flat-topped ridges as those found around Bida in Niger State.

The soils which vary from loam sandy loams to sandy clay loams are found in the south-western Nigeria covering the sedimentary rocks in Ondo and Edo States. They are also found in Imo, Anambra and Abia States as coarse sandy soils.

(e) Regosols

These are loose, excessively drained and intensely leached soils which consist of the brown to grey-brown coarse sandy soils found in the Chad Basin and on the coastal ridge–barriers. The soils develop on desert sand drift which is found mainly in central Borno, Jigawa, Kaduna and Kano States. The soils are rich in clay suggesting that some degrees of eluviations occur in the weathered profiles in some places. Most of the groundnut crop produced in Nigeria is grown on these soils.

3.2 The Vegetation of Nigeria

The pattern of vegetation in Nigeria is a reflection of the rainfall patterns, soil types and variation in altitude. The three major vegetation groups of forest, savanna and montane groups reflect these factors of climate, soil and altitude.

(a) The Forest Vegetation

The forest communities include the mangrove and fresh water swamps, the lowland tropical rainforest and the forest regrowth. The mangrove swamp forest is found throughout the coastland and it is fairly extensive in the Niger Delta. The vegetation is characterised by tall woody trees of white and red mangrove, aerial roots, evergreen broad leaves and some raffia palms. Trees attain the height of 50 m and a girth of up to 2.7m in the drier outer margins of the mangroves.

Raffia palm is used for making baskets, and is tapped for local wine. Bags, brooms, cane chairs and roofing materials are produced from the raffia palms. Mangrove trees are used for boat building, firewood and props in the lumbering industry. Swamp rice cultivation is also important.

The tropical rainforest occurs inland from the mangroves. The forest has evergreen leaves, many tree species, wood climbers, creepers and undergrowth. Trees are arranged in storeys or layers: bottom, middle and upper layers. The tree species are heterogeneous woody types like iroko, obeche and mahogany. The upper layer consists of very tall trees of 40-50m in height and is called emergent. The canopy they form is made up of crowns which are wide-spreading. The middle layer consists of trees which are about 16-40m high. The lower layer forms a continuous canopy over the entire forest with trees which are about 10-16m high. Below the tree layers are the shrub and herb layers. Lumbering and tree crop cultivation are the major economic activities. Tree crop plantations which produce cocoa, rubber, kola nut, oil palm, etc. are found in the forest area. The forest also provides wood for fuel while the natives make use of variety of herbs, barks of trees and leaves for medicines.

(b) The Savanna

This vegetation stretches from the northern edge of the rainforest to the northern boundary of Nigeria. The savanna or tropical grassland has three variants of Guinean savanna, Sudan savanna and Sahel savanna. It is the largest vegetation zone in Nigeria. At the northern margin of the tropical rainforest is the derived savanna which is usually regarded as rainforest modified by human activities. Next to this is the Guinea savanna vegetation. It is dominated by tall grasses, and woodland with scattered, deciduous trees. Major trees include locust beans trees, shea butter and isobelina. The Sudan savanna is next to the Guinean savanna. The Sudan savanna is characterised by short numerous grasses scattered and short deciduous trees and thorny bush. Plant species include acacia, date palm, silk cotton and baobab trees which easily adapt to the fairly

dry conditions. The Sahel savanna zone has less than 50mm of rainfall annually and the dry season may be up to nine months. The Sahel savanna is characterised by short scanty grasses, short and rough shrubs or drought resistant plants like acacia, gum Arabic, date palm and baobab.

(c) The Montane Vegetation

It is formed as a result of the effect of altitude. It is found on highland areas like the Adamawa highlands, the Mambilla plateau and Jos plateau. The character of the vegetation shows varied short scattered and deciduous trees on the wind-ward side and grasses on the leeward side. Livestock production is practiced under transhumance.

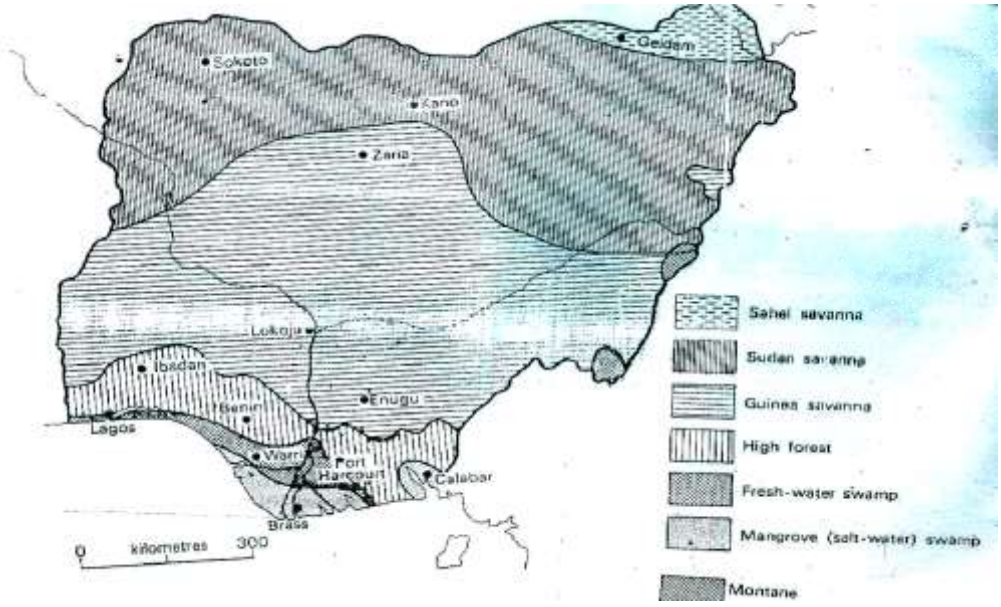

Fig. 1: Vegetation Belts of Nigeria

3.3 The Importance of Soils and Vegetation

The soils and vegetation in the country provide the economic base for farming, limbering and tourism. The soils support growth of crops like groundnut, cotton, cocoa, cassava, rubber, oil palm, kola nut, yams and cereals. Farming is the major occupation of Nigeria employing about 70 % of the population. Vegetation assists lumbering, livestock, farming and tourism. The vegetation is a source of raw materials for local industries like brewery, weaving, cane making, basket making, oil production, herbal medicine, etc.

3.4 Problems Associated with the Soils and Vegetation of Nigeria

Soils suffer from erosion, leaching and desert encroachment. Erosion and leaching cause reduction in the soil fertility. Many states in Nigeria like Sokoto, Edo, Anambra, Plateau and Ekiti have been devastated by gully erosion. In Borno, Yobe, Katsina and Kebbi States, wind erosion and desert encroachment which is the extension or spread of the desert to areas which were not originally desert is on the increase. Desert encroachment causes migration, crop failure, loss of livestock, shortage of water and accentuated wind erosion.

4.0 CONCLUSION

In this unit, you have learnt about soils and vegetation which are parts of the physical environment. You also learnt that the soils of Nigeria consist of five main types which include: hydromorphic, ferruginous, ferralitic, ferrisol and regosol soils. By now you should be able to mention the major types of vegetation which consist of the forest, savanna and montane vegetation. You should have understood the determinant factors which are the climate, the soil and the altitude. You have been taught the variants of the forest which include mangrove swamp and tropical rain forest while that of the savanna include the Guinea savanna, the Sudan savanna and the Sahel savanna. You must have known that montane vegetation is found on highlands like the Adamawa, Jos plateau, etc.

You have also learnt that the soil and vegetation provide the basis for economic activities. By now you must have known the problems facing the soils and vegetation in form of erosion, leaching, desert encroachment, reduction in forest through clearing and bush burning and lack of the same tree species within a small geographical area.

5.0 SUMMARY

This unit has discussed about the soil and vegetation types in the country. The soil types include alluvial soils, forest soil, ferruginous and regosols. The vegetation is composed of the forest and savanna (grassland) mainly but the highlands display unique vegetation. The soils and vegetation provide resource base for economic activities. Vegetation types reflect rainfall patterns, soil types and variation in altitude. Soil types are determined by climate, lithology, parent material and topography. The problems of soils include erosion and leaching while the vegetation is being destroyed due to lumbering, clearing and bush burning.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the relationship between soil types and vegetation belts in Nigeria.
2. On a sketch map of Nigeria, locate the major vegetation zones.
3. Mention 3 major factors controlling soil formation in Nigeria.
4. Describe the location, characteristics and uses of the Guinea savanna.

7.0 REFERENCES/FURTHER READING

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MODULE 2

Unit 1 Population of Nigeria
Unit 2 Settlements in Nigeria: Rural Settlement
Unit 3 Urban Settlements in Nigeria

UNIT 1 POPULATION OF NIGERIA

CONTENTS

1.0 INTRODUCTION

Population constitutes a major factor in the development process of any country. Having learnt about the physical conditions of the country this section will be a follow up to Module I and will enable you see the level of interaction between the various environmental elements and the human society. By the end of this unit you will understand the various demographic elements such as the size, density, growth rates, structure and characteristics of the population of Nigeria.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

list as many ethnic groups in Nigeria as you can
identify the major factors that influenced the population growth in the 20^{th} century
locate the major dense and sparse population areas in Nigeria
state the major population problems of Nigeria and show how these can be solved.

3.0 MAIN CONTENT

3.1 Size and Distribution of Population

The size of the population is the total number of people in a given geographical area such as a country, a state, a town or a community. The actual size of Nigeria's population has been a source of controversy since the colonial era. Nobody can give the exact size of the population because of the failure of successive governments to conduct a successful census in the country. A number of factors, with political factor as the most glaring have made it difficult to carry out accurate head count in Nigeria. Population figures have always been seen and used for sharing national revenue, and social amenities. Population determines the sharing of political power and representation in the National Assembly and State Assemblies. Hence, census has always been politicised by the various governments.

The sample census of 1952 under colonial administration put the population of Nigeria at 30 million people. The first national census to be conducted in independent Nigeria took place in 1963 and a controversial figure of 55.6 million was recorded. The census of 1971/1972 conducted under military administration was cancelled because of the highly politicised nature of the counting and fraudulent practices which were noticed. The census of 1991 put the population of Nigeria at 88.5 million people. The 2006 census put the population of Nigeria at about 140 million. This figure has risen to about 150 million (2011) using an annual growth rate of 1.9 %.

3.2 Population Distribution and Density

This is a measure of the population which relates population figures to the land area. Population density gives the total number of people per square kilometer in any given area. The concept of population distribution assumes that in a given territory, the human population is unevenly dispersed but for some reasons it is concentrated in one or more regions.

There are 3 major areas of population density and distribution in Nigeria. These are areas of high concentration, areas of moderate concentration and areas of sparse concentration.

Table 1: Population Distribution by State in 2006

State	Total	% Of The Nation
Abia	2,833,999	2.02
Adamawa	3,168,101	2.26
Akwa Ibom	1,920,208	2.80
Anambra	4,182,032	2.99
Bauchi	4,676,465	3.34
Bayelsa	1,703,358	1.22
Benue	4,219,244	3.01
Borno	4,151,193	2.97
Cross River	2,888,966	2.06
Delta	4,098,391	2.93
Ebonyi	2,173,501	1.55
Edo	3,218,332	2.30
Ekiti	2,384,212	1.70
Enugu	3,257,298	2.33
Gombe	2,353,879	1.68
Imo	3,934,899	2.81
Jigawa	4,348,649	3.11
Kaduna	6,066,562	4.33
Kano	9,383,682	6.70
Katsina	5,792,578	4.14
Kebbi	3,238,628	2.31
Kogi	3,258,487	2.33
Kwara	1,548,412	2.22
Lagos	9,013,534	6.44
Nasarawa	1,863,275	1.33
Niger	3,950,249	2.82
Ogun	3,658,098	2.16
Ondo	3,441,024	2.46
Osun	3,42,535	2.45
Oyo	5,591,589	3.99
Plateau	3,178,712	2.27
Rivers	5,185,100	3.70
Sokoto	3,696,999	2.64
Taraba	2,300,736	1.64
Yobe	2,321,591	1.66
Zamfara	3,259,846	2.33
Federal capital	1,405,201	1.00
Total	140,003,542	100.00

Source: National Population Commission, Abuja

The greatest concentrations are in the south of the country particularly in the south east and the south west. The third area of high density is the central north of the country around Kano and Zaria. The most densely populated areas (over 250 persons per sq.km) are in southern Nigeria and include the localities of Orlu, Owerri and Okigwe in Imo State, Ikeja and Agege in Lagos State and parts of Osun and Ekiti States. Orlu has the highest density of about 900 persons per square kilometer. Population densities of between 150 and 250 persons per km are recorded around Ibadan, Ilesha, Badagry, Aba, Nsukka, Bende (Abia State), Awgu, Afikpo and Udi. In the northern part of the country, population densities of over 100 persons per sq km are found in Kano close settled area, Katsina and Jos. Other areas with high population densities are Abakaliki, Degema, Enyong, Okene, Abeokuta, Owo, Warri, Asaba and Akure.

Areas of moderate population concentration (50-100 persons per sq-km) are Ahoada, Ilorin, Aboh, Auchi, Ondo, Okitipupa, Ijebu, Epe, Gombe, Idah, Potiskum and Dutse. The population in these places is supported by farming activities. Sparsely populated areas with less than 50 persons per sq km are the Middle Belt of Nigeria especially Kaduna, Niger, Kebbi, northern Kwara, Sokoto, the Niger Delta and the coastal region.

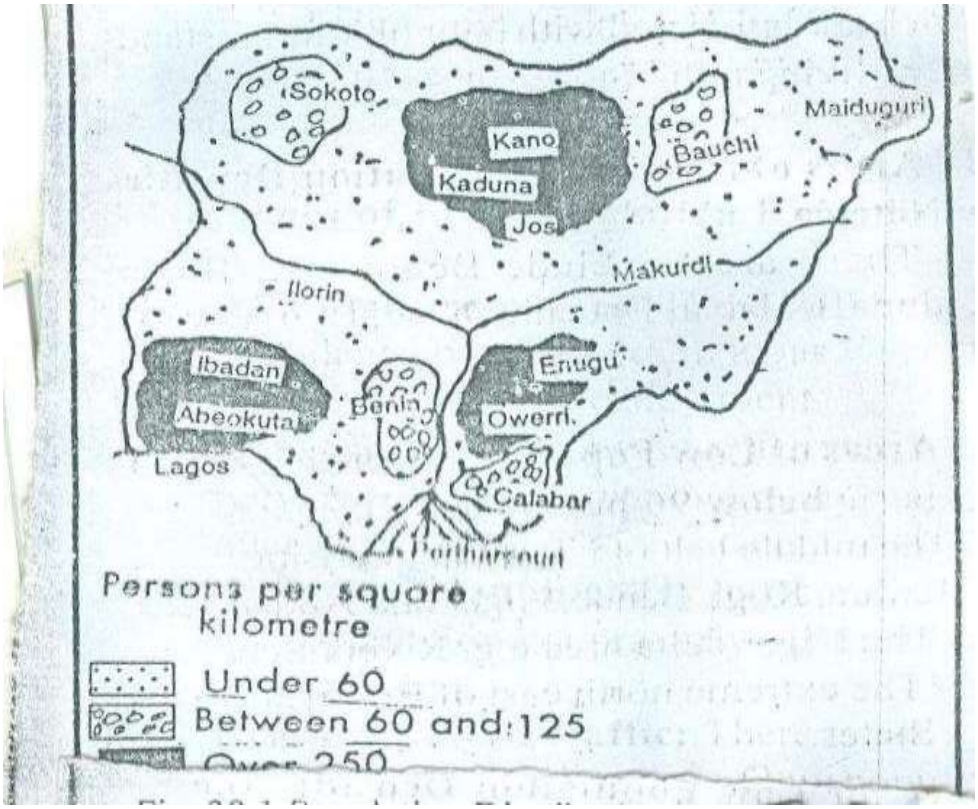

Fig. 1: Population Distribution in Nigeria

3.3 Growth Rates

Nigeria has experienced rapid population growth since the first national population sample of 1921. The annual population growth rate was approximately 5.8% between 1952 and 1963. This rate was higher than the estimated 2.3% for the whole of Africa and has been criticised. The unreliable nature of population statistics in Nigeria has made the planners to adopt an annual growth rate of between 2 and 3%. For example, 1.9% has been adopted by the National Population Commission in projecting the population of Nigeria.

3.4 Age-Sex Composition

The population of Nigeria, like that of other developing countries, is largely composed of young people. The country is just in the incipient stage of the demographic transition theory with control over death but with little or no control over the fertility rates. About 40 % of the total population falls under 15 years of age while those between 15 and 49 ages are about 50 %. The aged or old people constitute about 6 % of the population. Rural-urban differentials are noticed in the sexes of the people. In the urban centres, the proportion of females in each five age groups exceeds that of males in the 15 to 35 age categories. The proportion of urban population in ages 0 to 14 is lower than that of rural population. For ages 15 to 49, the percentage in urban population is higher than the rural population. The rural population is a little higher for ages 50 and above than the urban population.

Ethnic Characteristics

Nigeria is a multi-ethnic society with over 350 ethno-linguistic groups. The three major ethnic groups are the Hausa/Fulani, the Yorubas and Igbos which constitute over 50 % of the total population. Other ethnic groups are the Kanuris, Ibibios, Tivs, Ijaws, Edos, Annangs, Nupes, Igallas, Idomas and Itsekiris which constitute about 25 % of the total population. There are minority groups like the Igbira, Gwari, Ekoi, Mumuye, Ogoni, Isoko, Bura, Efile and Chamba.

The Hausas are found in Kano, Jigawa, Kaduna, Zamfara and Katsina States. The Fulanis are found mainly in Sokoto and other northern states while the Kanuris live in Bornu State. Nupes live in Niger and Kwara States, the Tivs and Idomas live in Benue State, Igalas live in Kogi State, the Igbos in Enugu, Anambra, Ebonyi, Imo, Abia, parts of Delta and Rivers States. The Ijaws live in Bayelsa, parts of Delta and River States. The Yorubas live in Oyo, Lagos, Ogun, Kwara, Kogi, Osun, Ekiti and Ondo States.

4.0 CONCLUSION

In this unit you have learnt about the population of Nigeria which is about 140 million people based on the 2006 national census and is varied in terms of spatial distribution, growth rates, age-sex composition and ethnic-linguistic characteristics. In terms of density, you have learnt that there are three areas of population concentration which include high, moderate and low density areas.

These population concentrations have resulted from socio-economic activities, historical and cultural differences. You have learnt that the high density areas are mainly in the southern part while the areas of moderate population are in the Middle Belt and the Niger Delta. You have learnt that population growth rates vary in different parts of the country. This unit has also made you understand the multiplicity of ethnic groups in Nigeria, the major ones being the Hausa/Fulani, the Yoruba and the Igbo.

5.0 SUMMARY

Lack of reliable demographic statistics makes it difficult to give an accurate population size of Nigeria. Nigeria has a population of about 150 million people distributed over the 36 states and the Federal Capital. The growth rates are between 2 and 3 % per annum. The southern part is more densely populated than the northern part due to ecological and historical differences. Population growth rates also vary from one part of the country due to socio-economic and ecological differences. Nigeria is a country of unity in diversity with over 350 ethnic groups.

6.0 TUTOR-MARKED ASSIGNMENT

1. On the map of Nigeria, locate the high population density areas.
2. Explain the main factors responsible for either population growth or population distribution.
3. Locate on a sketch map of Nigeria, 10 ethnics groups.

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UNIT 2 SETTLEMENTS IN NIGERIA: RURAL SETTLEMENT

CONTENTS

1.0 INTRODUCTION

Settlements indicate man's impression on the landscape. Just as you learnt in the last unit that population densities vary spatially in Nigeria, so are the settlements in which the population is concentrated. It is obvious that different settlement patterns in the country reflect cultural and ecological differences. Two distinct settlements of rural and urban types are discussed for the purpose of building on the last unit on population. In this unit, you will learn about rural settlement which harbours about 70 % of the Nigerian population.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

enumerate and explain the various forms of rural settlements in Nigeria
distinguish the major types, distribution patterns and functions of rural settlements in Nigeria.

3.0 MAIN CONTENT

3.1 The Concept of Settlement

A settlement may be defined as a group of buildings with people living in them. It is a unit of organised group of people making a living out of their surrounding environment. These units vary in size, complexity and stage of development.

Basically, there are two types of settlement which include dispersed and nucleated settlements. Dispersed settlements are dwelling places that are scattered and separated, one from the other. They are separated from one another by open country which is generally one kilometer away from the nearest neighbour. In Nigeria, dispersed settlements dot the forested region inhabited by the Igbos. In the east, the life of the people in dispersed settlements is simple and quiet. Dispersed settlements are usually difficult to administer.

Nucleated settlements are grouping of several family residences. There are collective amenities like water, schools, markets, places of worship and light to serve the community. The settlement is compact, concentrated and distinguishable by features like industry, nodal location, etc. Nucleated settlements are of two types: rural and urban.
Settlements are usually attracted to fertile alluvial plains, coastal low lands, sheltered indented part of the coastline, nodal centre or focus of routes, sites for power generation, river and lake sides, mining centres, and good site for defense.

3.2 Rural Settlements in Nigeria

Rural settlements are usually distinguishable from urban centres on the basis of criteria like size, legal status and functions. Usually, rural settlements are smaller in size than urban settlements. Rural settlements, perform simple functions like primary activities (i.e. farming, lumbering, hunting, mining, etc.) while urban settlements perform complex functions like secondary and tertiary activities such as industry, administration, services etc. In Nigeria, any settlement which has a population of less than 20,000 is regarded as a rural area.

According to the 1921 sample population, about 7 % of the population was urban and 93 % rural. In 1952, the rural population of the country was about 80 %. In 1963, the rural population was about 80 % while the current rural population is about 70 %. The increase in urban population is due to rural-urban migration which has been accentuated by rural poverty and employment opportunities in urban centres. The creation of more states has led to the emergence of more urban centres in the country.

3.3 Distribution of Rural settlements in Nigeria

Rural settlements vary from one part of the country to another in terms of structure, size and distribution. This variation is caused by cultural, economic and ecological factors. Rural settlements are found all over the country. In nucleated villages, houses are grouped into compounds on either side of one or two alleys. Such villages are found in Cross

River, Akwa Ibom, Ogun, Oyo and Lagos States. In the nucleated villages in Igbo land, the compounds are grouped in a circle. Some writers have linked the circular patterns of the villages to defence and trade. The nucleated settlements in the Niger Delta are sited on the limited dry land compelling the inhabitants to pack themselves tightly together. Mutual benefits and ethnic affinity must have encouraged the fishermen to live in closely nucleated settlements.

In Nupeland, the nucleated villages are called Ezhi and usually surrounded by daughter settlements called tungas or farm hamlets. Among the Kanuris, the Hausa and the Yorubas, nucleated villages are widespread. In Yorubaland, nucleated villages usually consist of farming population arranged in compounds composed of family members. Some of these villages have grown so big that if not for their agricultural function, they look like urban centres.

Dispersed settlements are the consequence of the gradual disintegration of nucleated settlements. The disintegration must have been caused by population pressure, kinship inheritance and historical or political events. Dispersed settlements are found mainly in Igbo land, Ibibio area of Akwa Ibom State and greater part of the Middle Belt. The Tivs and Idomas of Benue State, the Jukuns of Taraba and the Ogoja people of Cross River State live in dispersed settlements.

On the Jos plateau dispersed settlements are sited on the available plains around Livre, Kagoma and Kudaru scarps.

4.0 CONCLUSION

You have learnt in this unit that population of Nigeria is found in different settlements. This unit has taught you the meaning of settlements and the two main types of settlements which include nucleated and dispersed settlements. You have learnt that rural settlements may fall under either nucleated or dispersed category while urban settlements belong to the nucleated group. The unit has made you understand the nature, types and functions of rural settlement. You have learnt that nucleated rural settlements are all over Nigeria just as dispersed settlements are also widespread. You have learnt in this unit that rural settlements are mainly farming, fishing, mining and lumbering centres with different forms and population. This unit has made you aware that the rural population has been declining gradually since the colonial period.

5.0 SUMMARY

Rural settlements constitute about 70 % of Nigeria's total population. The different types of rural settlements in the country include nucleated rural settlements, hamlets, fishing camps and dispersed homesteads. The spatial distribution pattern of rural settlements can be explained by cultural, economic and ecological factors.

6.0 TUTOR-MARKED ASSIGNMENT

1. What is a settlement?
2. Discuss the types of rural settlements and mention their unique features.
3. Explain the major factors responsible for different rural settlement types in Nigeria.

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UNIT 3 URBAN SETTLEMENTS IN NIGERIA

CONTENTS

1.0 INTRODUCTION

This unit will enable you understand the concept of settlement or population concentration because it treats urban settlement which is the second type of settlement mentioned in the previous unit. Urban settlements as major geographical features in Nigeria are discussed in terms of spatial distribution, growth rates and problems facing the major towns and cities.

2.0 OBJECTIVES

By the end of this unit, you will be able to:

identify the major characteristics of urban settlements in Nigeria
locate on the map of Nigeria, some urban centres in different ecological zones
examine the major problems arising from urbanisation in Nigeria.

3.0 MAIN CONTENT

3.1 Nature of Urban Settlements in Nigeria

Urbanisation, which is the growth of towns and cities in terms of number and size, predates the European colonisation of Nigeria. It has been observed that urbanism or town life has always been a way of life among different ethnic groups in Nigeria especially in Yoruba and Hausa communities. The definition of urban settlement is not only controversial but also varies from one country to another. In Nigeria, population size of settlement is used to define an urban centre. Thus, any settlement with a population of more than 20,000 is regarded as an

urban centre. The number of 20,000 people is adopted in Nigeria because it agrees with the United Nations Organization's standard. The addition of administrative function (either at the state or local government level) recognises the importance of the functions of the urban settlements.

3.2 Growth of Urban Centres

Between 1921 and 1963 Nigeria experienced urban population growth of between 7.2 % and 19 %. The number of urban centres (i.e. places with about 20,000 people and above) increased from 29 in 1921 to about 180 in 1963. The post-independence era witnessed an unprecedented rapid urban population growth due to political reforms and accelerated economic growth. As a result of the creation of states, the number of states increased from 4 in 1963 to 36 in 1997. Abuja, which was non-existent in 1960, has emerged as the Federal Capital. The number of local government headquarters has increased to 774 from the few provincial headquarters due to government's reforms. Initially, 302 local government areas were created but due to the increase in the number of states, more local government areas have been added.

3.3 Spatial Distribution of Urban Settlement

In terms of spatial distribution, there are regional variations the south-western part of Nigeria is the most urbanised accounting for about 40 % of urban population in Nigeria. The northern part particularly the Hausa/Fulani occupied area is next to the southwestern part with about 35 % urban population. The eastern part is the least urbanised accounting for about 24 % of urban settlements in the country.

Most urban centres in Nigeria were in existence before the colonisation. The colonial rule, however, led to the emergence of new urban centres, which were created as administrative centres especially in the eastern part of Nigeria.

Some of the old cities that developed as headquarters of old kingdoms and empires include Kano, Kaduna, Sokoto, Benin, Ile-Ife, Maiduguri and Oyo. During the colonial period, new administrative and industrial centres emerged leading to an increase in the number of urban settlements. Some examples of new urban centres include Lagos, Port Harcourt, Kaduna, Enugu, Jos and Calabar. Colonial trading activities led to the emergence of Warri, Opobo, Badagry, Lokoja and Aba trading centres and Abeokuta was a place where missionary activities thrived.
The post colonial period witnessed massive rural-urban migration which led to influx of rural population to the major urban centres. Independence gave educated Nigerians an opportunity to replace the

out-going colonial civil servants. The creation of many states in 1967, 1976, 1988, 1991 and 1997 led to an increase in the number of administrative centres which are being transformed to urban centres. Some of the newly emerging urban settlements in Nigeria include, Minna, Benin, Kebbi, Damaturu, Dutse, Gombe, Jalingo, Lafia, Awka, Yenegoa, Asaba, etc. The various religious crises in some northern states have caused southern indigenes to flee to their respective states or other southern states; thus, causing an increase in the urban population in various destination centres. The creation of Abuja as the federal capital and the creation of 744 local government areas have added impetus to the expansion in the number of urban settlements.

Revenue from oil and gas has boosted industrialisation, trade and transport leading to the expansion of the existing cities and increase in the number of urban settlements. For example, new industrial cities of Bonny, Aladja, Warri, Eket and Kainji have been added to the growing number of urban centres in Nigeria.

3.4 Problems and Prospects of Urban Centres

Urban centres perform certain functions which help in the socio-economic transformation of Nigeria. Urban settlements have become centres of activity and of innovation, focal points of transport networks, locations of effective accessibility of which industries most easily reap scale economics of localisation and urbanisation. Agricultural enterprises thrive in the vicinity of cities. Some of these advantages associated with urbanisation have made some people to conclude that the growth of urban centres is beneficial to the economy of the country. As good as these functions are, they have their drawbacks especially in a Third World country like Nigeria where urban development preceded physical planning.

Some of the major problems arising from rapid urbanisation in Nigeria include:

(a) Dual Morphology

Most cities in Nigeria have both traditional and modern structures. The internal structures of cities like Ibadan, Lagos, Kano and Ilorin show a decaying central area with old buildings, narrow streets, poor drainage and unsanitary surrounding. The peripheral part is modern with good networks of roads, good sanitation, water supply and good layout of buildings. The traditional areas constitute serious problems for planners who face serious agitation from the indigenes or the “sons” of the soil.

(b) Inadequate Infrastructure

The urban centres in Nigeria lack efficient water supply, adequate transport facilities to cope with traffic during the peak periods, standard schools and shopping centres. Recreational facilities are non-existent in some urban centres.

(c) Unemployment

Due to large influx of people from the rural areas into the cities to seek non-available jobs, there is a high rate of unemployment. Unemployment leads to crimes and other social vices like prostitution, financial fraud and kidnapping. The economy of the urban centres is not growing as fast as the number of immigrants from the rural areas or other urban centres. There is a culture of poverty in most urban centres leading to the creation of squatter settlements or slums.

(d) Congestion

Congestion in all its ramifications like traffic congestion, over population in schools, inadequate facilities in hospitals, inadequate housing, etc. constitutes a serious problem in the urban centres of Nigeria. Traffic congestion on Lagos roads during the peak period or rush hours may last for over 6 hours. Schools are inadequate for school children leading to the accommodation of over 100 pupils in a class built for 40 pupils. Room density in Lagos is about 10 while that of Ilorin is about 4. The solutions to these problems include effective planning, provision of more jobs, expansion of existing facilities and creation of satellite settlements. Improvement in the public transport as it is done in Lagos will reduce the number of private vehicles on the road; thus, ameliorating the worsening traffic problem.

4.0 CONCLUSION

This unit has taught you about urban centres (i.e. towns and cities) in Nigeria with particular reference to their structure, distribution and growth. You have learnt that the urban centres are products of Nigeria's history, culture and ecology. You have been taught the history of the urban centres which pre-dates colonisation. The influences of the colonial rule and the political reforms after 1960 on the forms, distribution of urban centres have been discussed with a view of making you see how these factors affect the morphology and functions of various urban centres. You have learnt about the major problems facing urban centres which include bad or no planning, congestion, unemployment and the existence of a culture of poverty side by side with urban wealth.

5.0 SUMMARY

Urbanism has always been a way of life in Nigeria most especially among the Yoruba in the south west and the Hausa/Fulani in the north. Urban settlement with population of 20,000 and above has increased from 29 in 1921 to over 600 in 1991. Due to the creation of new states and local government areas after 1991, the number of urban centres rose to about 800. Urban development in Nigeria has passed three phases of pre-colonial, colonial and post independence eras each with its own unique pattern of urban development. The major problems facing the urban centres in Nigeria are varied and include lack of planning, unemployment, pressure on existing infrastructures, poor sanitation, traffic congestion, and rising waves of crimes.

6.0 TUTOR-MARKED ASSIGNMENT

1. On a map of Nigeria, locate 10 major cities in different ecological zones.
2. Compare and contrast the pre-colonial cities with those of post-independent eras.
3. Discuss the major problems associated with the rapid rate of urbanisation.

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MODULE 3

UNIT 1 MINERAL RESOURCES OF NIGERIA

CONTENTS

1.0 INTRODUCTION

The natural resources of Nigeria include all environmental elements like the lithosphere of minerals, the biosphere of plants and animals, the hydrosphere of rivers and oceans, plus the atmosphere of weather and climate. Human resources are crucial for the transformation of potential resources to actual resources. Utility is what matters in resource development. In this unit, only mineral and energy resources will be discussed because in the previous units other resources have been given attention.

2.0 OBJECTIVES

By the end of this unit, the learner should be able to:

list and locate at least 10 major minerals on a map of Nigeria
explain the location and exploitation of major minerals like petroleum, coal, tin, and iron ore

discuss the economic importance of either petroleum oil or coal in the development of Nigeria
list and explain the problems facing mining.

3.0 MAIN CONTENT

3.1 The Nature of Mineral Resources

Nigeria is endowed with many minerals and energy resources. The list of economic minerals is long but only a few of the known minerals have given the country its prosperity. The minerals can be classified into fossil fuels, metallic minerals and others.

3.1.1 The Fossil Fuels

The fossil fuels consist of oil and gas, coal and lignite. The Niger Delta is composed of thick sediments of tertiary age in which considered amounts of hydrocarbons have accumulated giving rise to large deposits of petroleum oil and natural gas. The first oil in Nigeria was mined on the continental shelf or on-shore and in the bed of the oceans or offshore. The first oil well in Nigeria was drilled at Oloibiri in Rivers State in 1957 and since then production and export have increased. Nigeria possesses about 3 % of the world's oil reserve. Less than 15 % of the crude oil is refined in Nigeria because petroleum in Nigeria is export-biased. Until recently, much of the natural gas produced is lost through flaring but much has been done to utilise the natural gas through the Nigeria Liquefied Natural Gas (NLNG) project.

Coal occurs in abundance in the upper cretaceous sediments of south-eastern states of Enugu and Anambra; as well as in Benue, Kogi and Edo States. The major coal reserves are located in Enugu (Enugu State), Inyi and Ezimo (Anambra State), Okaba, Orukpa, Ogboyago and Odokpono (Kogi State), Afuze (Edo State) and Lafia (Nasarawa State). Coal has been mined in Enugu since 1915. The total reserves of coal are about 160 million tonnes. The coal weathers easily during transportation or storage and is non-coking unless blended with other substances like pitch. The high content of sulphur in coal is suitable for use in the chemical industry but unsuitable for metallurgical purposes. Lignites are located at Ogwashikwu and Asaba in Delta State, Oba and Nnewi in Anambra State and Orlu in Imo State, Umu-Ezeala and Umuahia in Abia State. Reserves of lignite exceed 30 million tonnes. The lignites are brown to black, generally structureless and compact. They also break easily when exposed. The nature of lignites makes them rich in hydrocarbons, waxes and resins and is good for the production of liquid fuels and chemicals and for raising steam.

3.1.2 Metallic Minerals

Metallic minerals include tin, lead, zinc, gold, silver, copper and iron. Tin has been the country's most important metallic mineral since 1940. The tin ore (cassitirite) occurs in alluvial beds at or near the surface of the Jos plateau. There are minor occurrences in Kano, Bauchi, Zaria, Kabba, Ondo and Calabar. Reserves exceeded 65,240 tonnes in 1969 and much more is buried under the basalts of the Jos plateau. There has been a decline of output since 1969 when a record level production of 13.839 tonnes was reached. Production fell to under 4,000 tonnes in 1976. The open cast method is used for mining tin ore. By this method, tin is mined by using shovels to scoop the tin from the alluvial beds. Once the tin wash is accomplished, it is piled up in heaps by a powerful machine called a dragline. Many other minerals like columbite, thorite, wolframite, tantalite and molybdenite are associated with tin (cassatirite) as by- products. Nigeria accounts for about 95 % of world's production of columbite with an annual output of about 900 tonnes. Wolframite is almost depleted while molybdenite reserves are lean.

There are deposits of lead as galena and zinc as sphaerite which occur together as veins in the cracks of the cretaceous sediments of the Benue valley covering about 560 kilometers. Local mining of galena for cosmetic production started in the 1940s but commercial exploitation has been irregular due to technical problems and unstable market trends. The current production rate is about 230 tonnes per annum. Silver is found along with lead, zinc and gold but the quantity is so small that Nigeria has never been an exporter.

Lead is distributed as placers in alluvial channels in the basement complex area of the country. There are deposits of gold in Sokoto and Ilesha. Copper is found in small quantity and is associated with lead and zinc.

Iron ore is found as sedimentary deposits in Agbaja, Itakpe, Itobe and Shintaku in Kogi State, and Nsude in Anambra State. The iron content ranges from 29-50 % per metric ton. Iron ore is found in the basement rocks around Birnin Gwari in Kaduna State. The Nigerian Steel Development Company has been established at Ajaokuta in Kogi State but management problems have crippled the activities of the company. Many steel rolling mills have been established at Osogbo, Katsina and Aladja but have not been in production for years due to technical political and management problems. Other metallic minerals in the ferro-alloy category found in Nigeria include manganese, titanium, ilmenite and rutile. Manganese occurs in small amounts in the Oban hills in Cross River State and at Elebu around Ilorin in Kwara State.

3.1.3 Other Minerals

There are other minerals in Nigeria such as uranium, zircon and limestone. Uranium and zircon are found in the Jos plateau, uranium also occurs in Sokoto State where it may be related to the uranium-rich region of the Niger Republic.

Limestone is the most widespread of the non-metallic minerals. Most of the deposits are used to produce cement at Nkalagu (Ebonyi State) Ewekoro, near Abeokuta (Ogun State), Calabar (Cross Rivers State), Yandev near Gboko (Benue State) Ukpilla (Edo State), Kalambaina near Sokoto (Sokoto State), Gombe (Gombe State) and Obajana, near Lokoja (Kogi State). Limestone is mined by quarrying method which involves the removal of the overburden by mechanical excavators. The limestone is shattered with explosives and scooped out with excavators. Limestone is also used as a fluxing agent in tin smelting in Jos and iron smelting at Ajaokuta.

Marble is found in many locations in the basement areas such as Jakura (Kogi State) and Igebti (Oyo State). Clay is widespread but there are concentrations in Oyo, Anambra, Imo, Edo and Kwara State. There are ceramic factories at Umuahia (Abia State) and Abeokuta (Ogun State) and native potters make use of locally sourced clay in different parts of the country Suleja in Niger State is the home of traditional potters. Glass sand is sourced from some rivers for the manufacture of glass in Rivers and Delta States.

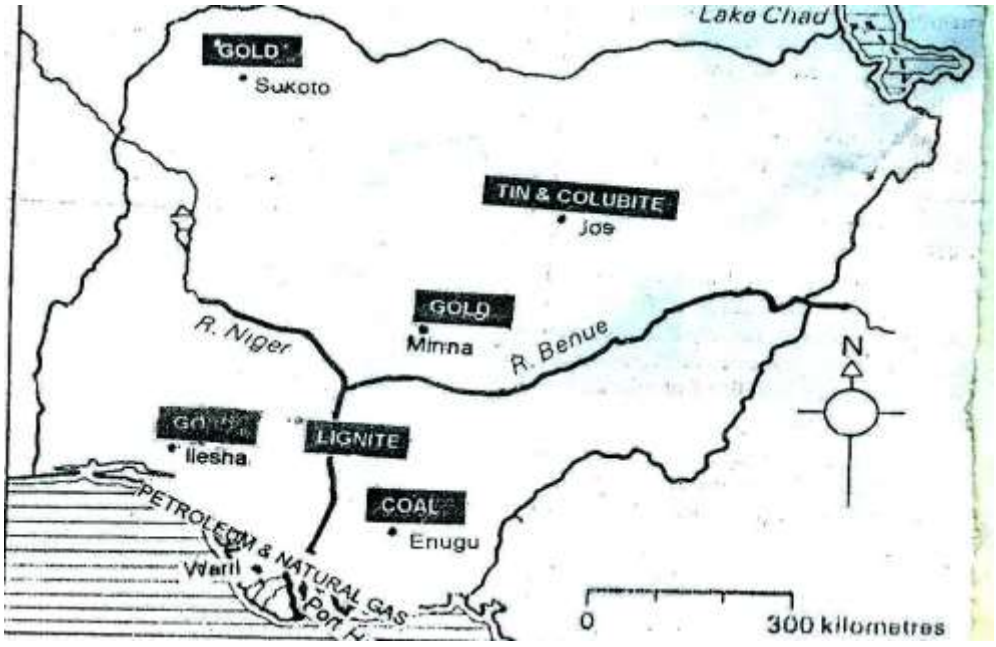

Fig.1: Mineral Resources in Nigeria

3.2 Problems of Mineral Exploitation

The major problem facing mineral development in Nigeria is the lack of technological base to ascertain the actual reserves of the various minerals and to carry out exploitation with little capital. Geological survey has not covered most parts of Nigeria due shortage of manpower and costly equipment. Another major problem is the fact that the minerals are non-renewable resources which cause a decline in production. Erratic power supply is hamstringing production of the minerals. Coal is beset with the problem of depreciation in value due to the alternative sources of power such as petroleum oil, natural gas and hydroelectric power. Lack of capital is slowing down the prospecting for and exploitation of minerals. The difficult terrain makes exploitation difficult and costly. The fluctuation in the process of these minerals makes investment in the mineral sector to be limited. Pollution caused by flaring of gas, oil spillage and soil spoilage is a big problem in the oil producing areas. The activities of militants in the coastal areas are causing serious damage to oil pipes and slowing down production. Constant conflict between the local communities and the oil companies are causing disruption of production. Corruption is also a major problem causing loss of revenue through illegal exportation of crude oil. Poor transportation is also causing problem to mineral exploitation. Rapid technological advance could transform the country from an exporter of mineral to an exporter of finished industrial goods. Improved energy supply could be a panacea to some of the problem facing the mining sector. Corruption at all levels of administration should be minimised if Nigeria wants to succeed in developing her mineral resources.

4.0 CONCLUSION

You have learnt that Nigeria is a major producer of some minerals like petroleum oil, natural gas, tin, and columbite, coal and limestone. This unit has made you know that the rock types determine the location the minerals. You have learnt that the mineral are crucial to the socio–economic development of Nigeria leading to the development of towns like Enugu, Jos and Port Harcourt and the prosperity of the country through revenue generation. In this unit you have learnt that the major mineral ores consist of metallic, non–metallic ores and radioactive minerals. You have learnt that some limiting factors to mineral development include insufficient capital, inadequate manpower, foreign-oriented management and market, pollution and sabotage by militants.

5.0 SUMMARY

Nigeria is endowed with many mineral resources which can be grouped thus:

Fossil fuels, which include petroleum oil and natural gas, coal and lignite.
Metallic ores, which consist of lead, gold, zinc silver, iron and copper.
Non–metallic minerals like limestone, marble, clay and glass sand; and
Radioactive minerals comprising uranium, zircon and thorite.

There is a close relationship between the occurrence of minerals and rock types discussed under relief of Nigeria in the earlier unit. The minerals are great contributors to the development of Nigeria but with attendant problems of pollution, poor management and neglect of the mineral producing areas like the Niger Delta.

6.0 TUTOR-MARKED ASSIGNMENT

1. Identify and locate 5 major minerals and their centres of production on a map of Nigeria.
2. Describe and explain the spatial distribution of mineral resources in Nigeria.
3. Discuss the importance of mining to the Nigerian economy.
4. Mention 4 major problems facing mineral resources development in Nigeria.

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UNIT 2 FOREST RESOURCES

CONTENTS

1.0 INTRODUCTION

This unit is a follow-up to unit 5 of module 1 which discusses the vegetation and soil of Nigeria. In this unit, the discussion will be on the remaining areas of natural climate and vegetation because they provide tangible resource materials and suitable for environmental research and education in resources management and conservation.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

identify the major wood species in the forest areas of Nigeria
describe the distribution of sawmills in the country
discuss various uses of the forest vegetation other than timber source.

3.0 MAIN CONTENT

3.1 The Nature of Forest Resources

The forest environment of Nigeria has a great diversity of tree species. The high forest reserves in southern Nigeria harbour most of the timber species but cover less than 10 % of the country's total land area. The main forest vegetation consists of tall, woody trees with aerial roots. The leaves of these trees are broad and green. Most of the trees are supported by buttress roots. The trees exist in different heights varying between 15m (50 feet) and over 60 m (180 feet) where there is little undergrowth due to the canopy of the trees which prevents the penetration of light. The trees with tall heights include iroko, obeche, ebonyi, Sapele wood,

African walnut and mahogany. Other tree species are opepe (*nauclea diderrichi*), apa (*afzelia africana*) and omo (*coroia platythyrsa*).

3.2 Distribution of Forest Resources

The forest area of Nigeria is limited to the coastal areas and about 200 kilometers into the hinterland. The forest vegetation covers the Niger Delta, Ondo, Edo, Delta, Cross River, Imo, Abia, Anambra, Ebonyi, Oyo, Ekiti and Ogun States. In the savanna belt, there are riparian vegetation communities in the forest reserves which contain timber species suitable for exploitation.

The forest area has reduced in size both as a result of indiscriminate forest clearance for cultivation, and selective logging by timber companies. The rate of tree felling has not been matched with the regeneration of the natural forests. In the north, some exotic species of trees like teak and neem (*dongo yaro*) are planted in the forest reserves while in the south, *rectona grandis* (teak) and *Gmelina arborea* are popular trees in the forest reserves.

3.3 The Uses and Problems of Forest Resources

Wood is the main product obtained from Nigeria's forest. It is widely exploited throughout the country as timber, poles, scaffolding, planks and stakes. It is also used as firewood or for burning charcoal. Tree species of value such as lumber are widespread in the secondary forest and savanna zones where they are deliberately preserved. The importance of the forest zone to the timber trade is evident from the concentration of about 98 % of the total number of sawmills in the country. The forest vegetation produces fruits, nuts and seeds. The most notable of these trees are the oil palm (*elaeis guineensis*) the locust bean tree, the Shea butter tree, the silk cotton tree, the coconut palm, wild kola (*kola nitida*), the star apple and the bush mango. Some tree species are exploited for their sap, tannin, latex or wax. The oil and the raffia palms produce palm wine, an alcoholic drink which can also be used in distilling a spirit called native gin or *ogogoro*. Rubber latex is obtained from indigenous wild species such as fantumia elastica. The red mangrove tree produces valuable tannin and *lonchocarpus cyanescens* produces the indigo which is used locally in cloth dyeing. Gum Arabic is obtained from acacia Senegal in Jigawa and Borno States.

Leaves are used for wrapping food items and some are used together with roots and barks in medicinal preparations. Many of these materials are used in the modern pharmacopoeia. The leaves of oil and raffia palms are used for making mats, baskets, brooms, roof-thatching and

rafters. In northern Nigeria, ginger is produced on a commercial basis for its hot spicy roots which are used for cooking and medicine.

The forests have a wide variety of woody lianas which are used to produce ropes, scouring pads, twine and cordage. Raffia palm leaves have fibres which are good for making rope and embroidery. Coir, which is the fibre of coconut husk, is used in cordage and mat making. Silky fibres produced from the seeds of the silk cotton tree are used for kapok mattress materials and can be used in life jackets.

The plant communities harbour many wild animals and birds which are valuable both as human foods and tourist attractions. Hunting is an important traditional occupation in every part of Nigeria. Bush meat accounts for a large proportion of the protein supply in the diet of most rural dwellers in Nigeria.

The major problems facing forest resources in Nigeria include dwindling timber and animal resources, the heterogeneous nature of tree species, over-hunting of animals and lack of strong policy on forest resources management. The disappearance of wild life is affecting the diets of the rural dwellers who largely depend on bush meat as a source of protein. The lumbering activities are being hampered by poor transportation and shortage of hard wood. Lack of hard wood for construction has led to the felling of less valuable but strong trees.

4.0 CONCLUSION

This unit has discussed the forest resources of Nigeria which consist of the biosphere of plants and animals. You have learnt about the structure of the forest resources which include woody trees of different species like iroko, obeche, mahogany, walnut etc., fruits and seeds leaves, barks and roots, fibres and game. You have learnt that the resources are not only dwindling but some trees and animals have gone into extinction. This unit has also taught you about the uses of the forest for lumbering, tree crop cultivation, and raw materials for medicine, provision of bush meat and of local crafts like rope-making, broom, baskets, twine and cottage.

5.0 SUMMARY

Nigeria is blessed with a variety of forest resources which are found in the forest and Guinea savanna vegetation belts. These resources provide revenue through the exploitation of timber, tannin, wax and fibres. The major trees felled for timber include iroko, obeche, mahogany, Sapele wood, ebony and African walnut. In the southern part of Nigeria, there

is a large concentration of sawmills. The products of the forest include different fruit species, seeds, leaves, barks, roots, fibres and wild life.

6.0 TUTOR-MARKED ASSIGNMENT

1. Discuss the extent of the forest area in Nigeria.
2. Mention and explain the major problems facing the timber industry in Nigeria.
3. Explain the importance of wild life in Nigeria.

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UNIT 3 WATER RESOURCES

CONTENTS

1.0 INTRODUCTION

This unit deals with the water potentials of Nigeria based on precipitation of the ocean and the river systems. You will learn about the spatial variation of rain, which is the major source of water and the unreliability of the other sources of water like rivers, streams and lakes due to the vagary of weather conditions. There will be a discussion on the uses of water for transportation, irrigation, fishing, domestic purposes and tourist attractions.
The major problems of seasonal and regional variation and lack of a policy to develop surface and underground water are discussed.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

identify major sources of water in Nigeria
list and explain the water resources in the country
mention 4 major uses of water in Nigeria
identify the problems of water development in the area of either transportation or Agriculture.

3.0 MAIN CONTENT

3.1 The Nature of Water Resources in Nigeria

Water is one of the most essential resources. There is generally an abundance of water resources because about 71 % of the earth's surface area is made up of water of which 97 % is salt water in the oceans. Most of the 3 % of the fresh water is locked up in the polar regions as ice caps.

In Nigeria, the main source of water supply is precipitation that varies from an annual average of about 1000mm in the north to about 4000mm in the south. The distribution of rainfall in Nigeria has been described in module 1 under climate. There is regional variation in water supply. Rainwater is more in the south than in the north due to climatic and geological factors. The other sources include 500 kilometers of the country's coastline, Lake Chad which has about 10 % of its area in Nigeria, rivers and underground sources.

In the vicinity of Lake Chad in the north eastern part of the country, there are wells which tap perched aquifers and draw water from beneath the thick clay bed. The water supplies can be described as sub artesian in that pressure is sufficient to carry water in some area up to the level of the groundwater above the clays. Sub-artesian streams are also found around the Oji River, east of Onitsha but exploitation in this area is minimal, as normal sources are adequate.

Nigeria has an extensive network of rivers, creeks, lagoons and streams which provide ample water. River Niger, with its tributaries and its delta is the most important system. Its tributaries, apart from the Benue are the Sokoto, the Kaduna and the Anambra Rivers. About a third of River Niger's length of about 4,200 km is within Nigeria. The Benue River, with its main tributaries of Gongola, Taraba, Dongo and Katsina Ala also forms another important water system. The coastal area has several small rivers and lagoons some of which are associated with the draining system of the Niger Delta. The major rivers are Ogun, Osun, Owena, Benin, Ethiope, Imo and the Cross which is the largest of them all.

3.2 The Utility of Water Resources

The uses of water in Nigeria vary spatially as the urban centres require more water than the rural areas. Piped-water supply was prominent in meeting urban water needs until the last two decades when incessant power supply and poor management crippled supply. Packaged water in sachets and bottles is taking over from piped-water supply. The producers of packaged water rely more on boreholes to remain in business. The supply of packaged table water has spread to the rural areas surrounding most of the major urban centres. Urban centres use water for industrial and domestic purposes while rural areas require water mainly for farming and domestic activities like cooking and washing.

Inland waterway transportation is being developed to enhance rural productivity and assist in the movement of urban dwellers especially in Lagos. The Niger, the Benue, the creeks and lagoons are important waterways which promote interaction, tourism and trade. The Niger is

navigable up to Jebba in Kwara State while its tributary, the Anambra River is navigable up to Aguleri about 24 km from Onitsha. The Benue River is navigable up to Garua in Cameroon. The navigable sections of Rivers Donga and Katsina-Ala during the rainy season are 80km and 112km respectively. The Gongola is navigable for about 240km from its confluence with the Benue while Taraba is navigable for only 32km. The Niger and the Benue are not navigable all the year round due to the drop in the volume of water during the dry season and the presence of rapids and falls especially on the Niger River. The coastal system is made up of many inter-connected lagoons, creeks and rivers that provide links between the western and eastern borders of the country. The entire system of inland waterways is one of the longest found within any country in the world. Many ports have developed and include Port Harcourt, Warri, Onitsha, Calabar, Lokoja, Baro and Burutu.

The best developed urban water transportation system in the country is that of metropolitan Lagos. There are two basic routes. These are Apapa-Marina (Lagos Island) route and the Mile Two (near Festac Town) - Marina route. Even with its impressive performance, the inland waterway development in Lagos has been criticised. As Bolade (1996) puts it, "despite the fact that about 40 % of metropolitan Lagos is composed of water, only a very minimal use of water transport is made for urban transport."

Apart from the riverine states like Lagos, Rivers, Delta, Ondo, Ogun, Cross River and Akwa Ibom which have developed effective river transportation systems some states in the hinterland like the Niger, Imo and Adamawa also give attention to river transport system which is focused on the development of the rural areas.

Fishing is a major occupation which is linked with water resources. Fishing involves the catching of fishes in rivers, lakes, ponds or oceans either for local consumption or for export. There are three major fishing zones in Nigeria. These are the inland fishing, lagoon and creek and deep sea fishing areas. Inland fishing is carried out in rivers, streams, lakes and ponds all over Nigeria. Rivers Niger, Benue, Cross, Ogun; Lake Chad and Kainji Lake are major fishing centres. Catching of fishes in lagoons and creeks along the coasts of Nigeria is prominent among the Ijaws, Ewe migrants and the Ilajes. Deep sea fishing in the oceans and seas is undertaken by individuals and companies. Popular fishes usually found in the Nigerian waters include tilapia, mackerel, shark, carps and claries. Other species include crabs, crayfish, etc. The major problem facing the fishing industry is that modern technology is not available to the indigenous fishermen while the companies which are foreign make use of modern technology. Capital which is not readily available to the local fishermen is also a serious problem.

Irrigation farming which involves the use of water for farming is also recognised in Nigeria. In the dry north, fadama or flood plain farming is widely practiced. The local farmers usually practice dry season farming on river valleys for maximum result. The importance accorded irrigation farming led to the setting up of the River Basin Development Authority in 1976 by the Federal Government. Various state governments in the north particularly Kano, Bauchi and Sokoto have embarked on the construction of dams to boost irrigation farming. Tiga Dam in Kano is a good example.

Power is generated in Nigeria through hydro-electric schemes. Many dams have been built for the purpose of generating power. Some of these dams are at Kainji, Shiroro and Jebba. Many of these dams are suffering from inadequate maintenance.

3.3 Problems Facing the Development of Water Resources

The development of water resources in Nigeria is being hampered by a number of problems. Some of the problems are political while some are technical. Lack of capital is a major problem delaying the implementation of some water projects in various parts of the country. Even when money is released for the execution of some projects, corruption may not allow the funds to be used appropriately. Lack of technology is slowing down the development of dams, waterways, etc. The dredging of the River Niger to enhance transportation is not being given adequate attention. Most of the dams in Nigeria are lagging behind in terms of engineering design and function. The low exchange rate of naira in relation to other foreign currencies is affecting contract costs.

4.0 CONCLUSION

Water is an important resource which is crucial to the development of Nigeria. This unit has discussed the sources of water in Nigeria which include rainfall, ocean, rivers, lakes and underground water.
Rain water is most reliable source but it varies from one part of the country to another. Rivers, streams and ponds are widespread but of different sizes. For example, River Niger and Benue are the major rivers. The rivers and lakes are used for domestic purposes, transportation, irrigation and hydro-electric power generation.

5.0 SUMMARY

Water resources in Nigeria vary from precipitation to surface water source from rivers, oceans, lagoons and lakes. Underground water is also important in the northeastern and the eastern parts of Nigeria but it

is less developed. Water is relied upon in the farming, industrial, transportation and fishing activities. The major problem facing the development of water resources is lack of technology.

6.0 TUTOR-MARKED ASSIGNMENT

1. On a map of Nigeria, mark two major sources of water.
2. Name 5 uses of water resources in Nigeria.
3. Explain the problems facing water transport in Nigeria.

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UNIT 4 AGRICULTURAL PRODUCTION: CROP CULTIVATION

CONTENTS

1.0 INTRODUCTION

In this unit you will learn about agricultural activities in Nigeria. First, you will learn about different types of farming which are about seven in number. You will then learn about the characteristics, methods and products of the various types of farming. You will also learn about the problems facing different types of agricultural practice.

2.0 OBJECTIVES

By the end of the unit, you will be able to:

mention and locate at least 5 types of agricultural practices in Nigeria
explain the features of at least 4 types of agricultural production in Nigeria
discuss the major crops raised under each type of agricultural practice.

3.0 MAIN CONTENT

3.1 Agriculture in the Country's Economy

Agriculture can be defined as the cultivation of crop and rearing of animals for man's use. Agriculture is a function of physical factors such as climate, soils, relief and vegetation. Other factors which influence agricultural production include economic and social factors such as market, transport, labour, capital, management, technology, land tenure system and cultural practices.
Agriculture is the mainstay of the Nigerian economy due to its great share of the labour force. The contribution of agriculture to the nation's Gross Domestic Product (G.D.P.) has declined since the 1970s when oil became the major source of revenue to the country. However, about 70 % of the country's labour force is either directly or indirectly engaged in agriculture. The situation went badly in the last three decades that agriculture, which in the early 1960s contributed more than 50 % of Nigeria's foreign exchange earnings now contributes less than 10 %. Today, Nigeria's import bill of foods has gone up due to the neglect of agriculture. Rice, vegetable oil and meat form part of the bulk of Nigerian import goods.

Recent efforts to revive agriculture have not yielded the desired fruits because young people are more interested in making money through oil bunkering, money- laundering, etc. than in working in the agricultural sector. Some of the programmes like Operation Feed the Nation, the River Basin Development Authority and Directorate for Food, Road and Rural Infrastructure have not succeeded in enhancing agricultural productivity. Agriculture provides raw materials for industries, food and cash crops.

3.2 Types of Agricultural Practice in Nigeria

There are different classifications of agriculture but the major ones which are practiced in Nigeria include bush fallow, shifting cultivation, crop rotation, irrigation, terrace agriculture, commercial farming and plantation farming. Some of the agricultural types are determined by the ecological and cultural factors while some cut across ecological zones. The various types are discussed below:

3.2.1 Bush Fallow System

This is carried out extensively in the forest and Guinea savanna zones. The farm is rotated rather than the crops. It is practiced by peasant farmers whose farm size is small varying in size between 2 and 8 acres. The farmer cultivates his farm for about 1 to 3 years and this is followed

by 5 or more years of fallowing. This system of farming involves the use of traditional equipment such as the hoe and cutlass. The forest clearing is done through slash and burn method whereby the forest is cleared, left to dry and later set on fire before cultivation begins. It is a subsistence system of cultivation which is characterised by poor productivity per unit area of land.

3.2.2 Shifting Cultivation

This is the oldest system of farming in Nigeria. It involves the shifting of crop field and the entire settlement when it is observed that the fertility of the soil or the productivity is low. The farmer then moves to a new settlement around which he resumes farming. This system is subsistence in nature. It is no longer widespread in Nigeria.

3.2.3 Crop Rotation

Under this type of farming, the crops are rotated from one plot to another. Crop rotation allows for permanent cultivation on a piece of land. About 3 to 5 different crops are grown on the same piece of land but on different plots. This is an example of intensive cultivation which relies on the application of fertilizers and manure. It is practiced in the various compounds and gardens in large cities. The major areas where this type of cultivation is prominent include Kano closed settled area and parts of eastern Nigeria.

3.2.4 Irrigation Farming

It involves the use of surface water from rivers and lakes to supplement water from rainfall in agriculture. It may involve a natural irrigation system whereby seasonal flooding provides fadama land or swamps with water especially during the dry season. In some instances, dams are constructed to store water and such water is distributed through canals and pipes to irrigate farmlands. Examples of such dams are the Bakolori dam, Tiga dam, Shiroro dam, and Kainji dam.

3.2.5 Terrace Farming

This cultivation is associated with hills and mountains where the use of terrace minimises the danger of erosion. This system of farming is also known as contour farming whereby ridges are made to cut across the slope of the hills or mountains rather than down the slopes. The cultivation is supported by the animal and human waste to increase fertility of the soil. It sometimes involves crop rotation to reduce the loss of soil fertility. This type of cultivation is practiced on the Jos plateau, Udi hills near Enugu and Mambilla plateau.

3.2.6 Mechanised Agriculture

Under this system the farms are large and successively cultivated from year to year with the support of fertilizers and machinery. Crop rotation method is applied and production is on a large scale. Examples are Obasanjo Farm at Otta in Ogun State, Ogbemudia Farm near Benin City in Edo State, Nefraday Farm near Ilorin in Kwara State and Amoje Farm at Awe near Oyo in Oyo State.

3.2.7 Plantation Agriculture

This is a system of farming under which a single crop, usually a tree crop, is cultivated on a large scale for commercial purpose. It is a monoculture which involves the use of modern equipment and permanent cultivation on the same plot of land for a long time. A modern factory is usually attached to process the products into basic raw materials for industries. Most of the plantations in Nigeria are located in the forest zone. Examples are cocoa and kolanut plantations in Ogun, Oyo, Ondo, Osun, Lagos and Ekiti States. There are rubber and oil palm plantations in Edo, Cross River, Abia and Delta States. PAMOL palm oil estates at Jagbodudu near Sapele (Delta State) and Okitipupa in Ondo State are quite prominent. Plantation farming helps the local people to acquire modern skills. It also provides job opportunities which prevent rural-urban migration.

3.2.8 Others

Market gardening or truck farming is an intensive type of agriculture which is practiced around big urban centres. The crops which are raised under crop rotation method include vegetables, flowers and fruits. These crops have to be produced near the market because they are perishable. This type of farming is common around Lagos, Kaduna, Jos, Kano and Ibadan.

3.3 Food Crops Farming

The major food crops in Nigeria include root crops like yam, cassava and cocoyam; grains such as millet, guinea corn (sorghum) and maize; as well as fruits. Among the root crops, yam is the most important. In recent years, cassava is becoming more suitable to the soil. Factors which influence the rapid displacement of yam by cassava include, (i) low cost of cassava cuttings used for planting compared with yam seedlings (ii) cassava can be left in the ground unharvested for months and therefore provides a good security against famine and (iii) recent expansion of foreign trade for cassava especially during the Obasanjo regime.

Yams are widely cultivated in the Middle Belt region of Nigeria around Minna in Niger State, Lafia in Nassarawa State and Ogoja in Cross River State. In the southern forest belt where soils are deep, root crops like cocoyam and cassava are grown along with yams.

Grains are cultivated in different parts of the country. Guinea corn (sorghum) and millet are restricted to the grassland areas while maize is cultivated mostly in the forest and the Guinea savanna areas.

Rice is cultivated in different parts of the country either as upland or swamp crop. Swamp rice is grown in the mangrove areas along the coast and the fadamas in different places. The major rice producing states are Niger, Kwara, Ebonyi, Kogi, Sokoto and Delta.

Fruits such as banana, plantain, mango, carrot, orange and pineapple are cultivated in the country. Carrot is popular in the north while others are grown in the forest zone.

The food crops are grown mostly by the peasant farmers who own small farms and depend on tools like hoe, axe and cutlasses. The food crops are produced for local consumption and form part of items for internal trade.

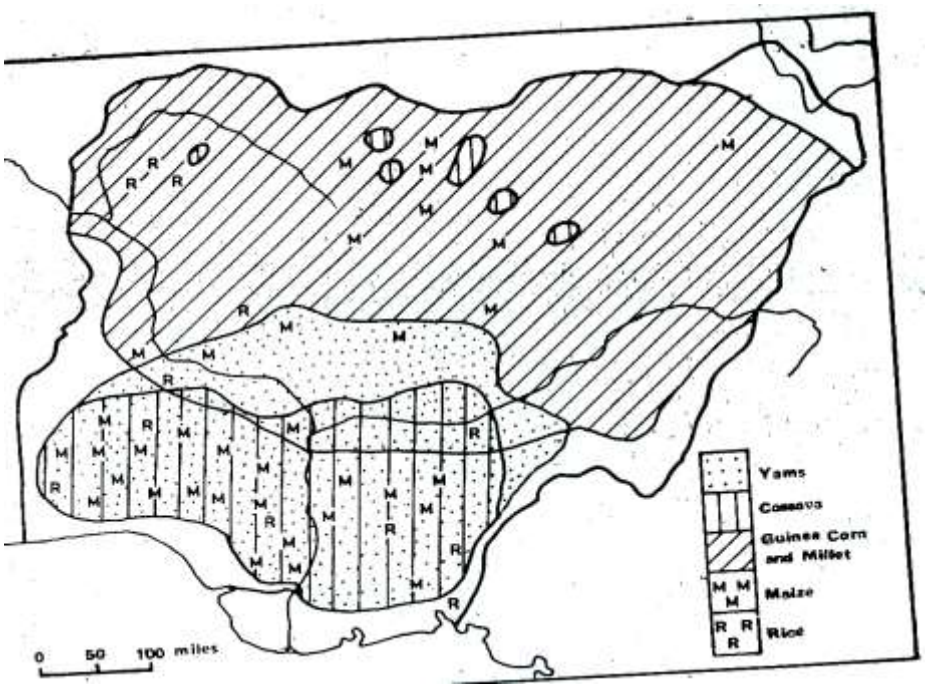

Fig. 1: Nigeria: Sources of Main Food Crops

3.4 Commercial or Cash Crop Farming

The major commercial and industrial crops include tree crops such as oil palm, cocoa, cotton, groundnuts, rubber, coffee, tea, beniseed, wattle, ginger and kolanut. Most of these crops are produced by small-scale farmers. Only a small percentage is produced from large commercial plantations. The tree crops are cultivated in the southern forests while cotton, groundnuts, beniseed, wattle and ginger are cultivated mostly in the grass land areas. Tobacco and sugarcane are also grown in some parts of the country. Figure 1 above shows the distribution of the major food crops.

4.0 CONCLUSION

This unit deals on agricultural activities which are varied and based on the ecological and cultural considerations. You have learnt about eight types of agricultural practices. The various features, methods and products of the different types of agriculture in Nigeria have been discussed. You have seen that agriculture is important in the economy of Nigeria because it engages about 70 % of the population; provides food and income to both the government and the people. You have learnt about food and cash crops of the country.

5.0 SUMMARY

As in most West African countries, agriculture is the mainstay of the Nigerian economy, providing jobs to many people. The major agricultural types are the shifting cultivation, bush fallow system, crop rotation, irrigation, plantation and commercial farming. Minor type like market gardening is also discussed. Food crops and cash crops are products of different types of agriculture.

6.0 TUTOR-MARKED ASSIGNMENT

1. On a map of Nigeria, locate 5 cash crops.
2. Explain the factors that influence either bush fallow or crop rotation farming in Nigeria.
3. Discuss the advantages and disadvantages of plantation farming.

7.0 REFERENCES/FURTHER READING

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UNIT 5 ANIMAL HUSBANDRY

CONTENTS

1.0 INTRODUCTION

In this unit, you will learn about animal husbandry or animal farming which is a major occupation of the people in the northern part of Nigeria and parts of the forest area. You will learn about the physical and cultural factors which influence animal production. The place of livestock farming in the economy of Nigeria will be discussed. You will also be exposed to the problems facing agriculture generally as a way of concluding our discussion on agriculture production in Nigeria.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

describe the location of animal production in Nigeria
discuss the major physical and cultural factors that influence animals production
identify the major problems facing agricultural practices in Nigeria
state the direction of movements of cattle rearers during the year.

3.0 MAIN CONTENT

3.1 The System of Animal Production in Nigeria

Animal husbandry or animal production is the traditional occupation of a large and distinct ethnic group called the Bororo Fulbe (Fulani) and the Shuwa Arabs of Borno State.

Animal farming in Nigeria is mostly extensive rather than intensive because it depends mainly on rangeland, crop residues and collected nomadic cattle. Breeding whereby cattle and subsidiary livestock are moved about to where natural grazing is available and to avoid the attack of trypanosomiasis caused by the tsetse fly is widely practised.

The major animal breeders are the Bororo Fulani who keep cattle, sheep and goats and live in temporary settlements from July to December. They operate in the northern Sudan savanna to the Guinea savanna zone from December to June. The distance covered by the rearers ranges from 100km to about 500km. The cattle breeders practise mixed farming which combines livestock breeding with small-scale farming. During the wet season, shortage of water and tsetse fly infestation tend to restrict livestock breeding in a few suitable places in the northern grasslands, some of which are suffering from over-grazing and periodic droughts. Provision of rural water supplies by many northern state governments is creating new pastures for grazing, for instance, the Borno State government has dug many artesian wells south and west of Lake Chad.

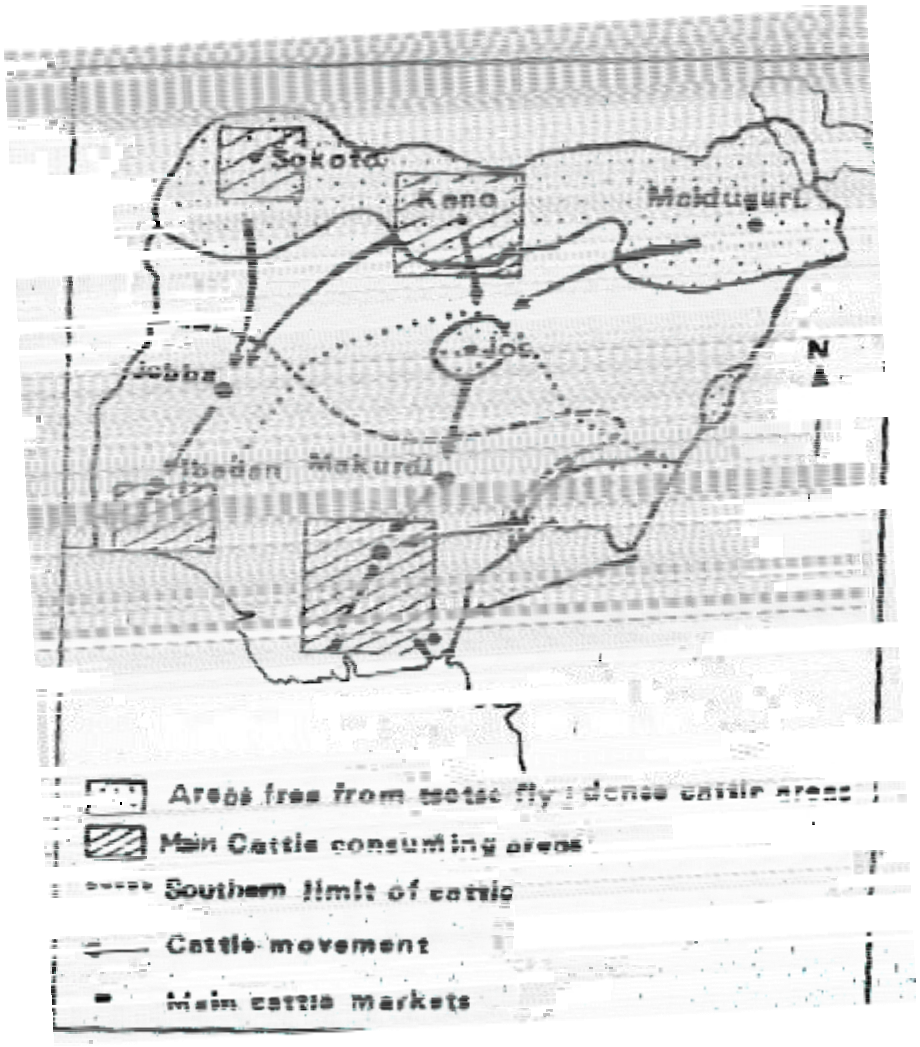

Fig. 1: Cattle and their Movement in Nigeria

The cattle rearers are found on the Mambilla plateau and parts of the extension of Cameroon Mountains which are free from tsetse fly. Here, there is intense competition for land between the cattle rearers and the farmers. Other animals breeding areas are Kano closely settled zone, Funtua in Katsina State and Sokoto State. In other parts of Nigeria, animal husbandry is a subsidiary activity to agriculture because only small herds are kept for sale and local consumption. There are some state-owned cattle ranches like those at Gombole near Maiduguri, Manchok and Mokwa in Niger State, Obudu in Cross River State and Upper Ogun in Ogun State. Dairies producing fresh milk are found near major urban centres like Lagos, Ibadan, Kano and Vom near Jos.

3.2 Types of Animals Bred in Nigeria

The most important types of cattle in the savanna is the hardly Zebu. Four breeds of Zebu cattle are widespread in the north. These are the Sokoto Gudali which are docile and good milk producers as well as the Adamawa Gudali. The Buhaji or white Fulani cattle and the Ranaji or red Fulani cattle of the north east yield less milk but are adapted to the harsher conditions. The Shuwa Arabs keep the smaller red-brown Wadara cattle which are good milk producers.

In the humid tsetse fly infested south of the country, the Mutaru or dwarf, short- horned cattle and the larger humpless Ndama make up the greater proportion of cattle population. These cattle are immune to trypanosome infection but with lower quality of milk and meat when compared with the Zebu breeds. The Fulani cattle rearers who live in the derived savanna of Oyo and Kwara States keep a muturu-Zebu crossbreed known as the keteku both for themselves and for the local farmers. In the ranches, foreign breeds have been introduced and crossbred with the local stock. There are about 9 million herds of cattle in Nigeria.

Sheep and goats are kept for the supply of meat, especially during Muslim festivals. The sheep in Nigeria is more than 8 million; they do not provide wool but meat. The goats which are over 22 million are browsers and like the sheep form part of the diets. The main three types of sheep found in Nigeria are the yankasa, the long-legged ouda and the dwarf sheep. There are also three types of goats which include the Kano brown, the Sokoto red and the hardy, short-legged dwarf goat usually black and white. The dwarf sheep and goats are reared in the humid south and are tolerant of trypanosomiasis. The Kano brown and the Sokoto red goats have high quality skin from which the popular morocco leather is produced. Goats are kept by the women in the north for the supply of milk.

Pigs are also bred in the country. About 70 % of Nigeria's 1. 8 million pigs are concentrated in the south and in the Middle Belt. Pig population in the Muslim populated north is low. Most of the pigs roam freely in the villages but some are raised on government-owned and commercial farms. Camels, horses and donkeys number about 3.1 million and are used as beasts of burden.

In most urban centres in Nigeria, poultry or keeping of birds has become lucrative venture. Most of the chickens raised in the poultry farms are foreign but efforts are on to raise local varieties for intensive breeding. Local chickens are of the hardy free-range type and are poorly fed, consequently they produce smaller eggs.

3.3 Economic Importance of Animal Husbandry

Animal husbandry in Nigeria is important not only for its contribution to the country's internal economy and food resources but also because of its impact on the landscape. It is the occupation of a large and major ethnic group, the Bororo Fulani.

Cattle, goats and sheep form the major source of food because they provide meat and milk which are the major proteins in Nigerian diets. Unlike other animals like pigs, sheep and donkey, there is no religious or cultural taboo in eating beef or cow meat. Cattle provide dairy products such as cheese, milk and butter. There are many industries which produce tinned and powdered milk in the major urban centres. Cattle are also used for pulling carts and ploughs. They therefore play a significant role in agricultural mechanisation, particularly in the north. Cattle, sheep, goats, chickens and pigs provide income to the farmers and the government when they are exported. Pastoral farming provides jobs for the cattle rearers who rely on their animals for survival. Cattle provide raw materials such as hides and skins for tannery industries and local shoe-making industries in the north where leather, bags and shoes are produced.

3.4 Problems of Agriculture in Nigeria

Agricultural production in Nigeria reached its nadir in the 1970s when the index of output of export commodities stood at 52.8 % as opposed to 100 % in 1960. The major problem facing agriculture is the negative attitude of farmers and the government because of the high revenue generated from oil. Oil has replaced agriculture as the backbone of the Nigerian economy. Nigeria is blessed with vast land resources. There are 91.2 million hectares of land out of which three quarters are cultivable; yet, at present, only a third of this is under cultivation. Apart

from lack of concerted effort to revolutionise agriculture, there are other problems which are physical, cultural and economic in nature.

The reason for low productivity in Nigeria is partly because the greater part of the country's soil is infertile and requires inputs of fertiliser, improved seed varieties and use of pesticides. There is also the problem of leaching and erosion in different parts of the country especially in the southern humid rainforest areas. Erosion problems are compounded by rural poverty, ignorance of many farmers and lack of adequate extension workers to advise on the best methods of combating erosion. There are also problems of flood and water logging which make the soil unsuitable for growing many crops.

The economic problems facing agriculture include rural-urban migration, poor transport facilities, lack of capital and credit, limited market, vagaries of commodity prices in the world market and poor saving habit of the farmers. Rural-urban migration has led to the depopulation of the rural areas whereby the farm labour is left to the old people. Transportation is becoming worse as a result of the bad conditions of the road. The rail transport and the bad conditions of road have contributed to high transport costs. The farmers lack the collateral which is required for the granting of loans and other bank credits. The farmers rely on the periodic traditional market for the disposal of their produce traditional storage methods are inadequate to preserve farm produce for long; hence the need to dispose the farm harvest at a giveaway price. The various commodity markets are controlled by agencies without the representation of the farmers. The prices are externally determined and forced down the throats of the farmers.

Climatic problems which limit agricultural production include seasonal, unreliable and inadequate rainfall, high temperatures and adverse effects of wind. Farms along river valleys are sometimes washed away during high floods. Heavy rainfall often causes leaching which leads to the impoverishment of the soil due to loss of nutrients.

Many of the farmers are not educated enough to embrace modern techniques of agriculture. Many of the farmers are conservatives who depend on the use of traditional farming implements, magic and superstition. Many of them are opposed to the use of insecticides, improved seedlings and fertilizers. The land tenure system which vests the ownership of land in the family makes large-sale farming impossible.

The biotic problems include frequent weed growth, difficulty in clearing the thick forest, prevalence of diseases, insects and birds and poor quality of grasses for the animals. The use of traditional farming

methods makes the control of weed and the clearing of the land difficult. There are three major problems facing animal husbandry in Nigeria. These are trypanosomiasis or sleeping sickness, rinderpest or cattle plague and dovine pleuro-puemonia. There are others like tuberculosis, anthrax, blackquarter, heartwater and rabies.

Some of the solutions to enumerated problems include removal of stiff conditions for granting loans and credit facilities to farmers and the use of irrigation techniques to reduce the problem of water shortage. Others include the provision of basic amenities in the rural areas to check rural-urban migration, improvement of the rural roads, the provision of incentives to attract young and educated people to farming. Furthermore, the training of more extension workers, control of crop and animal diseases and pests through provision of cheap and affordable drugs and distribution of cheap and affordable fertilizers, herbicides and pesticides will make agriculture the mainstay of the country's economy.

4.0 CONCLUSION

This unit has taught you about animal production in Nigeria which is largely traditional in practice. You have learnt that animal rearing is the major occupation of the Bororo Fulani and Shuwa Arabs who live in the grassland of Nigeria. Animal rearing is largely nomadic or semi-nomadic and dominated by cattle, sheep and goats, pigs, horses, donkeys, camels and chickens. The unit has made you understand that trypanosomiasis or sleeping sickness is one of the diseases of cattle. You have been taught that agriculture is faced with a number of problems which include climatic, edaphic (soil), economic and social problems. Some of the solutions to these problems that you have learnt include the use of irrigation, improvement of transport, etc.

5.0 SUMMARY

Animal husbandry is a major occupation mostly carried out by a group of people who live in northern part of Nigeria. The major animals bred include cattle, sheep, goats, pigs, donkeys, camels and chickens. Cultural and ecological factors influence pastoral farming. Animals provide meat, milk, cheese, butter, hides and skins for domestic consumption and industrial uses. Agriculture in Nigeria is faced with institutional, economic, physical and social problems which include poor transportation, lack of credit and capital, soil erosion, leaching and rural depopulation which causes labour shortage.

6.0 TUTOR-MARKED ASSIGNMENT

1. Locate the major cattle production zone on a map of Nigeria.
2. Discuss the major factors influencing animal husbandry in Nigeria.
3. Identify and explain the major problems facing agriculture in the country.

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UNIT 6 TOURISM IN NIGERIA

CONTENTS

1.0 INTRODUCTION

This unit will teach you another environmental resource which is not yet well developed in Nigeria. You will learn about tourist resources which fall into three main groups thus: (a) natural environment areas and features (b) cultural sites and (c) man-made recreation centres and features. You will learn about the pattern of tourism, which is largely unorganised, but with a wide range of potential tourist attractions. This unit will also teach you the benefits of tourism and the problems affecting tourism in Nigeria.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

describe the patterns of tourist attractions in Nigeria
list at least 10 tourist centres in the country
highlight the importance of tourism as a commercial venture.

3.0 MAIN CONTENT

3.1 Tourism as a Commercial Venture in Nigeria

The World Tourism Organization (WTO) defines tourism as "comprising of activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year and not less than 24 hours for leisure, holiday, business and other non-remunerated purpose" (WTO, 1996). Goodman (2002) has observed that tourism is the only sector where the good is at the point of production,

remains at the point of sale, and in addition, it affords several buyers the opportunity to buy the same product over and over again.

Tourism in Nigeria today is in a state of transition from all essentially alien activity, involving a very small number of persons, whether as suppliers or consumers to an industry designed to serve both Nigerians and foreign visitors. In much large number, Nigeria possesses a very wide range of potential tourist attractions but the contribution of tourism to the national income is minimal. The World Tourism Organization (WTO) has affirmed tourism to be the world's most important source of employment, stimulant of investment in infrastructures and provider of substantial tax revenues (WTO, 2004). The International Monetary Fund (IMF) puts the figure for global tourism receipts at $504 (US) billion compared with the $435 (US) billion gained by oil and gas sector (a small part of which it contributed.) At present, tourism is contributing very little to the Nigerian economy because it is not as well developed as it is in South Africa, Kenya and Senegal.

3.2 Patterns of Tourism in Nigeria

Nigeria is a big and blessed country in terms of tourist potentials. Nigeria has a massive land area of 923,760 sq km comprising forest of about 9.61 %, grassland of 48.53 %, wetland (fresh water) of 20.18 % and coastal, marine and farmland of about 20.3 %. The World Resources (1992) puts Nigeria coastline to be 853km in length bordering the Atlantic Ocean within the Gulf of Guinea. Nigerian coastal and marine resources include plants, fish, shellfish, marine mammals and reptiles. Nature has complemented the Nigerian ecosystem with surface and growth water of over 250 billion cubic metres which is 2,300 cubic metres per capita and is considered to be adequate to support Nigeria's ecosystem needs.

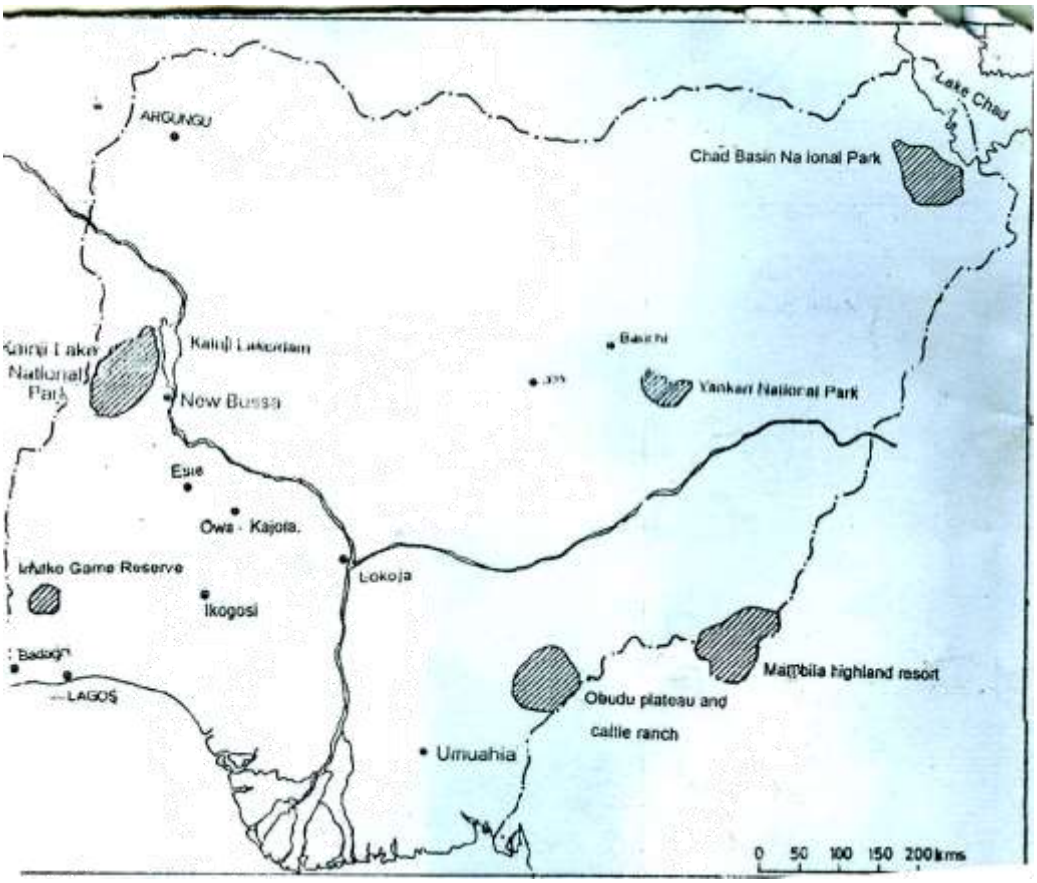

Fig. 1: Tourist Attraction Sites in Nigeria

There is no part of Nigeria which is not endowed with tourist attractions sites. From the southern forest to the northern grassland, Nigeria has diversity of wildlife reserves, landscape features and cultural life which can be harnessed for tourism development. The major tourist attractions in the country include:

(a) Wildlife conservation areas such as the Kainji Lake National Park in Niger State. The Ghashaka Gumti National Park in Taraba State, the Omo Biosphere Reserve in Ogun State, the Pai River Game Reserve in Plateau State, the Okomu National Park in Edo State, the Old Oyo National Park in Oyo State, the Kamuku National Park in Kaduna State and Ifon Game Reserve in Ondo State among many others.

(b) Landscape features such as the Mambilla plateau, Olumo rocks, Zuma rocks (Niger State) and Patti hills (Kogi State).

(c) Drainage features which include Lake Chad, Bagauda, Tiga and Kainji springs; like Ikogosi Warm Spring (Ekiti State), Wikki Warm Spring (Bauchi State) and the Ogbunike cave near Onitsha in Anambra State.

(d) Historical features such as the National Museum in Abuja, Lagos and Esie; historical monuments like Oranmiyan's staff at Ife (Osun State), War Museum at Umuahia, Mungo Park's Tomb of Jebba and the National Theatre (Lagos).

(e) Cultural festivals such as Osun festival at Osogbo, Argungu fishing festival (Kebbi State), Calabar cultural festival and Eyo masquerade festival (Lagos State).

(f) Architectural features in Abuja, Kano, Oyo and Lokoja.

(g) Traditional arts and crafts in Benin, Oyo, Ilorin, Bida, Kano, Sokoto, Suleja and Lagos.

3.3 Benefits of Tourism

Tourism is in its incipient stage of development. It is largely controlled by the private-government partnership with the government providing infrastructural facilities such as roads, security and communications and the private sector providing hotels. The physical quality of life index in Nigeria was put at 38 % in 1991 making Nigeria to be in the 151st position among the 174 countries surveyed (UNDP). Available statistic show that the level of poverty increased from a low 28.1 % in 1980 to a high 65.5 % in 1996.

Tourism is capable of reducing rural poverty if well developed since most tourist facilities are based in the rural areas. Tourism is capable of generating employment because it cuts across all sectors of the economy, tourism provides opportunity for relaxation and this is good for the physical and mental health of the people. Tourism generates foreign exchange through foreign visitors. It helps to foster national and international cooperation. Tourism also helps in raising the value of marginal land which is not suitable for farming but put to profitable use as tourist sites.

3.4 Problems of Tourism in Nigeria

The inability of the successive governments in Nigeria to implement various policies on tourism is a serious handicap to tourism development. There are many government agencies and institutions which have been put in place to enhance tourism promotion and development but very little has been achieved in terms of structural transformation. Some of the agencies and statutes are the National Park Service, Natural Resources Conservation Council, National Commission for Museums and Monuments and the Nigerian Tourism Development Corporation.

Other major problems facing tourism development in Nigeria include:

(a) Insufficient transportation and communication facilities due to bad roads, comatose railway transport, un-coordinated water transport, inefficient and high cost of air transport and unreliable telephone systems.
(b) Low incomes among the Nigerian populace due to uneven distribution of wealth, unemployment and poor saving habit.
(c) Limited resources for developing tourism and patronizing it. Capital is in short supply.
(d) High costs of hotels facilities and poor management of the available hotels and holiday resorts.
(e) Fear of tropical diseases and unstable political conditions.
(f) Large family - which is the characteristic of many people in Nigeria inhibits effective planning for recreation and holiday travel.
(g) Ignorance on the part of many Nigerians as to the importance of organised recreation.

The solutions to some of these problems include improving transport and communication facilities, reducing costs of hotel facilities, enlightening Nigerians on the importance of tourism and positive effort to develop tourist attraction sites.

4.0 CONCLUSION

You have learnt about the importance of tourism as a commercial venture but which has been neglected in Nigeria due to over-reliance on oil revenue. You have been taught that tourist sites and attractions are widespread in Nigeria with different cultural and ecological zones depicting what can be admired locally and internationally. This unit has taught you about different tourist attractions which include landscape and drainage features such as Idanre hills, Zuma rocks, warm springs, etc, historical features like the museums (Lagos and Esie), monuments like the Oranmiyan's staff at Ile-Ife, cultural festivals like Argungu fishing festival and traditional arts and crafts. This unit has taught you that tourism is not well-developed in Nigeria due to financial limitation, poor infrastructure, lack of awareness and poor income.

5.0 SUMMARY

Tourism in Nigeria is just being given attention due to lack of effective organisation and planning over the years. A number of tourist attractions abound in Nigeria but they are underdeveloped and underutilised. Few ones like cultural festivals at Osogbo, Lagos, Obudu and Argungu attract foreigners. Tourism development is hindered by inadequate

infrastructural facilities, ignorance and uncoordinated policies of the government.

6.0 TUTOR-MARKED ASSIGNMENT

1. Name four examples each of the following types of tourist attractions (a) Landscape features (b) Traditional arts and crafts and (c) Historical features.
2. Mention and explain four problems facing the development of tourism in Nigeria.

7.0 REFERENCES/FURTHER READING

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UNIT 7 RESOURCES DEVELOPMENT PROBLEMS IN NIGERIA

CONTENTS

1.0 INTRODUCTION

In the last fourteen units an attempt has been made to present in a simple and explicit way, the various geographical aspects of Nigeria. The units have discussed the country's geo-political structure, physiological features, socio-cultural, political and economic characteristics. The various discussions have shown that there has been rapid economic growth but little economic development in terms of new technologies and diversification of productive activities. In the last 10 years, Nigeria has experimented with democratisation of the political system but the journey is still long. Nigeria is faced with many political, socio-cultural and infrastructural problems.

2.0 OBJECTIVES

By the end of this unit, you should be able to:

list the major problems facing resource development in Nigeria
state the limitation set on the development of Nigeria by it mono-cultural economy
explain why Nigeria is a country of great diversity and contrasts.

3.0 MAIN CONTENT

3.1 Problems of Development

Nigeria is faced with inadequate statistical data which can be used to measure the level of development. The inadequacy results from the dynamics of change in the country's different facets of life. For instance, Nigeria's geo-political structure has changed several times since independence. It has been explained how the three regions at the time of

independence have increase to 36 states in 1997. In the last three decades Nigeria has transformed from a purely agrarian economy to a mineral-dominated economy. The country has moved from agricultural-export based economy to that of mineral-export based economy.

In the last 40 years, Nigeria has experienced a bloody civil war, post-war reconstruction efforts, and military rule for over 20 years and three attempts at civil rule. The true position of the population is still unknown. The figure of 140million people recorded during the 2006 census is still being challenged in court by some state governments. The late Chief Obafemi Awolowo once declared that, "the nation has achieved rapid economic growth but very little economic development." The situation observed by the late sage in 1975 has greatly worsened in the last two decades with high rates of graduate unemployment, total breakdown of infrastructural facilities like roads, water supply; we have comatose railway transport, inefficient air transport services, very low energy output, corruption in high places and a gross imbalance of money and investment. If development refers to desirable social and economic progress, improvement in living standards through the use of modern technology and industrialisation and reduction in the gap between the poor and the rich, then Nigeria has not achieved economic development but rather economic growth. High inflation and expensive essential goods are the characteristics of the Nigerian economy. The energy output generated for the country stands at about 2000mw which is grossly inadequate for a population of about 150 million. Many foreign companies have started relocating to other countries where there is steady power supply.

One of the most celebrated economists in Nigeria, Professor Sam Aluko once commented, "Nigeria is less developed in terms of physical, human and even monetary resources than those countries like the U.S.A and Canada were in 1875" (Aluko, 1980). Today, Nigeria is worse off due to low energy supply and reliance on goods exported from China, Malaysia, Singapore and Korea. These countries belonged to the same class of developing countries many decades ago but have overtaken Nigeria in area of industrialisation and export trade. The contribution of industry to the total economy in 1980 that stood at about 8 % is now below 5 %. Most industries have either been closed or operate at below production capacity.

The educational sector which seems to be improving in terms of increasing number of tertiary institutions is beset with the problem of lack of quality teaching and research. Most graduates being turned out by the universities, polytechnics and colleges of education cannot perform in terms of job placement. Possession of certificates is what is cherished rather than work output.

The financial sector is passing through a difficult period as a result of the capitalisation policy. Out of 25 banks that passed the recapitalisation screening of the capital bank of Nigeria in 2006, only about half of the number was adjudged to be doing well in a recent assessment by the apex bank. The conditions of the ailing banks portend danger for those involved in financial investment and funds saving. It is Herculean task to obtain loans and credits by potential investors, contractors and companies. This situation has crippled the flow of capital to various sectors of the economy.

The political structure is not only weak but also shaky due to the dubious manner in which many politicians were elected through rigging. Money still determines who occupies what political post in Nigeria; the perceived slogan is, "power to the wealthy and the highest bidder." The federal government is in full control of the purse strings in order to get more fiscal power into the hands of the central government. Federal character only appears in the constitution without full adherence to it when it comes to control of resources.

Development in Nigeria is lopsided because the major resources for development are still being controlled by foreign companies like the Shell-BP, Chevron, Mobil Lever Brothers, Leventis, UAC, etc. The indigenisation policy of 1974 only succeeded in producing neo-colonial domination of the Nigerian financial, insurance, oil and allied institutions. South African companies now dominate the communications industry. The German, Lebanese and the Chinese have been of major importance in the commercial and construction industries. In the oil industry, refined oil is imported because less than 30 % of the crude oil is refined locally. The four oil refineries in Nigeria are not working at full capacity despite the huge amount of money spent on their turnaround maintenance. Natural gas that has been wasted for years through flaring is just being developed through the Nigeria Liquefied Natural Gas (NLNG) project. The fact that less than 30 % of Nigeria's petroleum is refined locally means the loss of numerous by-products such as lubricants, plastic and insecticides. Corruption in the oil sector makes the government to lose much revenue through bunkering; illegal export and insincerity on the part of the Nigerian National Petroleum Corporation and foreign oil Companies.

Social instability in form of religious and ethnic crises, youth restiveness in the Niger Delta, kidnapping, political thuggery, political assassination and armed robbery is a serious problem affecting resource development. Youth militancy and oil theft through bunkering have sent many oil companies packing. Until recently, the militants in the Niger Delta caused serious disruption in the mining activities of the oil companies. Agitation for resource control by communities and the militants have

wrecked havoc on oil production causing a fall in daily crude oil output. Religious and ethnics killings in the north are on the increase. This social menace is making the southerners living in the north to flee to their states of origin leading to disruption in the economy of the country. Oil wealth has brought to Nigeria vast possibilities of breaking out of an old poverty and bring development to all its people, but it has also brought with it many problems such as mal-distribution of incomes and rewards with their accompanying costs, widespread corruption; violent crime and a spirit of indiscipline that may easily arise where a country thinks it can solve all its problems with money from oil. The attitude of many Nigerians to honest work and living is at best negative; hence, many want to make money through dubious means like money laundering, embezzlement and armed robbery.

3.2 Prospects for Development

In spite of a myriad of problems enumerated above, the physical and human resources in Nigeria are still many and varied. The various resources provide a framework for the country to launch forward in its quest for becoming an industrial giant by 2020. The large reserves of petroleum in the Niger Delta and a possible striking of oil in the northeastern part of the country will continue to be a major source for government revenue. A sincere and concerted effort by the government to develop iron and steel industry through the vast quantities of medium to low grade iron ore may transform the country into a major industrial country among the developing countries. As units 4 and 5 under module 1 have shown, Nigeria is endowed with varied climatic, vegetation and land resources, which have encouraged complementarities in the agricultural sector of the economy. The various agricultural production zones can be harnessed to improve the existing internal trade patterns.

If the various governments in Nigeria can upgrade infrastructural facilities like transportation, communications, power, water, schools and hospitals, the country will be able to develop the massive resources the country is blessed with. The revival of the ailing industries depends on the uplifting of roads, water, health centres and job creation in the rural areas. Regional inequalities in terms of wealth, amenities and power will be reduced if rural development is given a serious attention.
The future of Nigeria is hinged on true practice of federalism as entrenched in the Nigeria constitution. Access to power, education and appointments should be based on merit.

4.0 CONCLUSION

It is obvious that you have learnt in this unit the potentials of Nigeria as a great country. You have learnt the problems of resource development

in the country which cut across social, economic, political and historical boundaries. You also learnt that the socio-political and economic problems could be traced to the colonial period. This unit has revealed that oil has brought great wealth as well as problems to Nigeria. You have learnt that some of the problems arising from oil wealth include over-reliance on oil at the expense of other resources like agriculture, rising waves of crime, corruption and indiscipline. The future of Nigeria is bright if only the government addresses the problems identified.

5.0 SUMMARY

Nigeria has experienced rapid economic growth but without cumulative transformation of the economy. Many problems face Nigeria in the areas of instability of the country's statistical base, reliance on oil export and declining agricultural output, regional inequalities creating poor rural sector and rich urban economy. All the problems notwithstanding, Nigeria's prospects for development are enormous because of abundant physical and human resources, which if well tapped, can transform the country into a major world economic power by 2020.

6.0 TUTOR-MARKED ASSIGNMENT

1. Examine the various problems facing Nigeria and suggest possible solutions.
2. Why is the economy of Nigeria described as "growing and not developed?".

7.0 REFERENCES/FURTHER READING

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