NATIONAL OPEN UNIVERSITY OF NIGERIA

TPM 206

BASIC ELEMENTS OF PLANNING

FACULTY OF MANAGEMENT SCIENCES

COURSE GUIDE

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CONTENT

Introduction

The course Basic Elements of Planning (TPM 206) is a second semester core course which carries two credit units for second year level Transport Management students in the Faculty of Management Sciences at the National Open University, Nigeria. This coursework will be useful in your academic pursuit and help to gain in-depth insight into Transport Management and Planning.

This course guide is built partially on prerequisite knowledge (i.e. introductory part in Planning), however, its simplicity will make the student assimilate faster and practice questions at the end of each unit will also prepare the student for the examination purposes. It suggests some general guidelines for the amount of time required of users on each unit in order to achieve the course aims and objectives successfully. It also provides users with some guidance on their tutor marked assignments (TMAs) as contained herein.

Course Content

The course is made up of twelve units (four modules) spread across fourteen lecture hours and covering areas such as definition and objective of planning ,Concepts and Models for understanding and investigating the reality of a given Regional situation, the historical background of planning, Urban Land use types, Concept of zoning and lastly Transport Planning process.

Course Aims and Objectives

The course attempts to explain the concepts and conceptual framework of Planning, the reasons for planning, types and levels of planning, Internal structure of cities, and urban population density. Also, the course is prepared in a way in which the users would easily enhance their previous knowledge. The course aims, is to help users develop critical thinking skills, learn how to evaluate planning matters, and understand the roles of planning in guiding current spatial arrangement process and debates.

However, the overall aims of the course will be achieved by:

i. Evaluating the concept and conceptual framework of Planning.

ii. Establishing distinction between Physical Planning and Economic Planning.

iii. Understanding the theories of internal structure of cities.

iv. Discussing the historical evolution of Planning

v. Explaining the process of Transport Planning

Working through the Course

To successfully complete this course, you are required to read the study units, referenced books and other materials on the course.

Each unit contains self-assessment exercises called Student Assessment Exercises (SAE). At some points in the course, you will be required to submit assignments for assessment purposes. At the end of the course there is a final examination. This course should take about 10 weeks to complete and some components of the course are outlined under the course material subsection.

Course Material

The major component of the course and what you have to do and how you should allocate your time to each unit in order to complete the course successfully on time are listed as follows:

1. Course guide
2. Study unit
3. Textbook
4. Assignment file
5. Presentation schedule

Study Unit

There are 12 units in this course which should be studied carefully and diligently.

Module 1: Introduction to Planning

Unit 1: Definition of Planning
Unit 2: Level of Land use Planning

Unit 3: Master Plan Concept in Planning

Module 2: Internal Structure of Urban Areas

Unit 1: Urban Land use

Unit 2: Theories of Internal Structure of Cities

Unit 3: Models of Urban Population Density

Module 3: Evolution of Planning and Control

Unit 1: Pre-Independence Planning Law
Unit2: Post-Independence Planning
Unit 3: Concept of Zoning

Module 4: Transport Planning and Process

Unit 1: Transport in Society
Unit 2: Transport Planning

Unit 3: Transport Planning Process

References and Other Resources

Every unit contains a list of references and further reading. Try to get as many as possible of those textbooks and materials listed. The textbooks and materials are meant to deepen your knowledge of the course.

Assignment File

There are assignments on this course and you are expected to do all of them by following the schedule prescribed for them in terms of when to attempt them and submit same for grading by your tutor. The marks you obtain for these assignments will count toward the final mark you obtain for this course. Further information on assignments will be found in the Assignment File itself and later in this Course Guide in the section on Assessment.

There are four assignments in this course. The four course assignments will cover: Assignment 1 - All TMAs' question in Units 1 - 3 (in Module 1)

Assignment 2 - All TMAs' question in Units 1 - 3 of Module 2

Assignment 3 - All TMAs' question in Units 1 - 3 of Module 3

Assignment 4 - All TMAs' question in Units 1 - 3 of Module 4

Presentation Schedule

The presentation schedule included in your course materials gives you the important dates for this year for the completion of tutor-marking assignments and attending tutorials. Remember, you are required to submit all your assignments by due date. You should guide against falling behind the schedule.

Assessment

There are two types of assessment of the course. First are the tutor-marked assignments; second, there is a written examination.

In attempting the assignments, you are expected to apply information, knowledge and techniques gathered during the course. The assignments must be submitted to your tutor for formal assessment in accordance with the deadlines stated in the Presentation Schedule and the Assignments File. The work you submit to your tutor for assessment will count for 30 % of your total course mark.

At the end of the course, you will need to sit for a final written examination of three hours duration. This examination will also count for 70% of your total course mark.

Tutor-Marked Assignments (TMAs)

There are four tutor-marked assignments in this course. You will submit all the assignments. You are enjoined to do all the questions thoroughly. The TMAs constitute 30% of the total score.

Assignment questions for the units in this course are contained in the Assignment File. You will be able to complete your assignments from the information and materials contained in your text books, reading and study units. However, it is desirable that you demonstrate that you have read and researched more widely than the required minimum. You should use other references to have a broad viewpoint of the subject and also to give you a deeper understanding of the subject.

When you have completed each assignment, send it, together with a TMA form, to your tutor. Make sure that each assignment reaches your tutor on or before the deadline given in the Presentation File. If for any reason, you cannot complete your work on time, contact your tutor before the assignment is due to discuss the possibility of an extension. Extensions will not be granted after the due date unless there are exceptional circumstances.

Final Examination and Grading

The final examination will be of three hours' duration and have a value of 70% of the total course grade. The examination will consist of questions which reflect the types of self-assessment practice exercises and tutor-marked problems you have previously encountered. All areas of the course will be assessed

Use the time between finishing the last unit and sitting for the examination to revise the entire course material. You might find it useful to review your self-assessment exercises, tutor-marked assignments and comments on them before the examination. The final examination covers information from all parts of the course.

Course Marking Scheme

The table presented below indicates the total marks (100%) allocation.

Assessment	**Marks**
Assignment (Best three assignment out of the four marked)	30%
Final Examination	70%
Total	**100%**

How to Get the Most from This Course

In distance learning the study units replace the university lecturer. This is one of the great advantages of distance learning; you can read and work through specially designed study materials at your own pace and at a time and place that suit you best.

Think of it as reading the lecture instead of listening to a lecturer. In the same way that a lecturer might set you some reading to do, the study units tell you when to read your books

or other material, and when to embark on discussion with your colleagues. Just as a lecturer might give you an in-class exercise, your study units provides exercises for you to do at appropriate points.

Each of the study units follows a common format. The first item is an introduction to the subject matter of the unit and how a particular unit is integrated with the other units and the course as a whole. Next is a set of learning objectives. These objectives let you know what you should be able to do by the time you have completed the unit.

You should use these objectives to guide your study. When you have finished the unit you must go back and check whether you have achieved the objectives. If you make a habit of doing this you will significantly improve your chances of passing the course and getting the best grade.

The main body of the unit guides you through the required reading from other sources. This will usually be either from your text books or from a readings section. Some units require you to undertake practical overview of historical events. You will be directed when you need to embark on discussion and guided through the tasks you must do.

The purpose of the practical overview of some certain historical planning issues are in two fold. First, it will enhance your understanding of the material in the unit. Second, it will give you practical experience and skills to evaluate planning arguments, and understand the roles of history in guiding current planning policies and debates outside your studies. In any event, most of the critical thinking skills you will develop during studying are applicable in normal working practice, so it is important that you encounter them during your studies.

Self-assessments are interspersed throughout the units. Working through these tests will help you to achieve the objectives of the unit and prepare you for the assignments and the examination. You should do each self assessment exercises as you come to it in the study unit. Also, ensure to master some major issues and events during the course of studying the material.

The following is a practical strategy for working through the course. If you run into any trouble, consult your tutor. Remember that your tutor's job is to help you. When you need help, don't hesitate to call and ask your tutor to provide it.

Read this Course Guide thoroughly.

- Organize a study schedule. Refer to the `Course overview' for more details. Note the time you are expected to spend on each unit and how the assignments relate to the units. Important information, e.g. details of your tutorials, and the date of the first day of the semester is available from study centre. You need to gather together all this information in one place, such as your dairy or a wall calendar. Whatever

method you choose to use, you should decide on and write in your own dates for working breach unit.

- Once you have created your own study schedule, do everything you can to stick to it. The major reason that students fail is that they get behind with their course work. If you get into difficulties with your schedule, please let your tutor know before it is too late for help.
- Turn to Unit 1 and read the introduction and the objectives for the unit.
- Assemble the study materials. Information about what you need for a unit is given in the `Overview' at the beginning of each unit. You will also need both the study unit you are working on and one of your text books on your desk at the same time.
- Work through the unit. The content of the unit itself has been arranged to provide a sequence for you to follow. As you work through the unit you will be instructed to read sections from your text books or other articles. Use the unit to guide your reading.
- Up-to-date course information will be continuously delivered to you at the study centre.
- Work before the relevant due date (about 4 weeks before due dates), get the Assignment File for the next required assignment. Keep in mind that you will learn a lot by doing the assignments carefully. They have been designed to help you meet the objectives of the course and, therefore, will help you pass the exam. Submit all assignments not later than the due date.
- Review the objectives for each study unit to confirm that you have achieved them. If you feel unsure about any of the objectives, review the study material or consult your tutor.
- When you are confident that you have achieved a unit's objectives, you can then start on the next unit. Proceed unit by unit through the course and try to pace your study so that you keep yourself on schedule.
- When you have submitted an assignment to your tutor for marking do not wait for its return `before starting on the next units. Keep to your schedule. When the assignment is returned, pay particular attention to your tutor's comments, both on the tutor-marked assignment form and also written on the assignment. Consult your tutor as soon as possible if you have any questions or problems.

After completing the last unit, review the course and prepare yourself for the final examination. Check that you have achieved the unit objectives (listed at the beginning of each unit) and the course objectives (listed in this Course Guide).

Tutors and Tutorials

There are some hours of tutorials (2-hours sessions) provided in support of this course. You will be notified of the dates, times and location of these tutorials. Together with the name and phone number of your tutor, as soon as you are allocated a tutorial group.

Your tutor will mark and comment on your assignments, keep a close watch on your progress and on any difficulties you might encounter, and provide assistance to you during the course. You must mail your tutor-marked assignments to your tutor well before the due date (at least two working days are required). They will be marked by your tutor and returned to you as soon as possible.

Do not hesitate to contact your tutor by telephone, e-mail, or discussion board if you need help. The following might be circumstances in which you would find help necessary.

Contact your tutor if.

- You do not understand any part of the study units or the assigned readings
- You have difficulty with the self-assessment exercises
- You have a question or problem with an assignment, with your tutor's comments on an assignment or with the grading of an assignment.

You should try your best to attend the tutorials. This is the only chance to have face to face contact with your tutor and to ask questions which are answered instantly. You can raise any problem encountered in the course of your study. To gain the maximum benefit from course tutorials, prepare a question list before attending them. You will learn a lot from participating in discussions actively.

Summary

This course, Basic Elements of Planning (TPM 206), exposes the users to the rudiments of Planning such as the concepts and conceptual framework of Planning, the reasons for Planning, Historical evolution of Planning, Pre-colonial, Colonial and modern Planning and Development control. It equally explains the theory of internal structure of cities and issues related to Transport Planning Process.

On successful completion of this course, you would have developed crucial thinking skills with the material necessary for efficient and effective discussion of Physical Planning and events both theoretically and practically. However, to gain a lot from the course please try to apply anything you learn in the course to term papers writing in other general and transport planning courses. We wish you success with the course and hope that you will find it both interestingly intuitive and courteously functional.

MODULE ONE

INTRODUCTION TO PLANNING

Unit 1: Definition of Planning

Unit 2: Levels of Land use Planning

Unit 3: Master plan concept in Planning

UNIT 1: DEFINITION OF PLANNING

CONTENTS

1.0 Introduction

This unit is to discuss the meaning of Planning, the need for Planning and types of planning. In other words, the basic idea of Planning and different types of Planning will be fully explored.

2.0 Objective

At the end of this unit student should be able to;

- Define and know the meaning of Planning
- Understand the need for Planning

- Explain the importance of Planning
- Compare the different types of Planning

3.0 Main Content

3.1 Meaning of Planning

Planning is an activity toward a decision making. It is a process involving interaction of advisers and decision makers on a phenomenon or the environment, thus suggesting that planning is a general approach to decision-making and may not be tied to the activities of any profession or department of government.

It is deemed to be concerned with taking an objective and rational views of future conditions, assessing what society desires, its destination and destiny to be, forecasting the amount of change, estimating the degree of control requirement and formulating a policy to take account of this destiny change and control.

Faludi (1973) sees planning as the application of scientific method to policy making with a view to increasing the validity of policies in terms of the present and anticipated future of the environment. A much wider view than Faludi's was advanced by Davidoff and Reiner (1965) when he defined planning as a set of procedures in making choices among alternatives and in determining future actions.

This definition finds the support of Roberts (1974) who views planning as making choices among the options that appear open for the future, and then securing the implementation, which depends on the allocation of the necessary resources.

Adedibu (1995) defines planning as an art and science concerned with the balanced opportunities between various section of the population, and the space available, with a view to matching suitable locations with the right events. Space is seen here with the context of finding the right location for a right activity considered to be a successful enterprise; a suitable location must be a location for the events.

Planning is also concerned with the growth, development and management of physical environment of any geographic space according to the predetermined policies through scientific approaches (Adeniji 1984; Oyesiku 1992).

Self Assessment exercise:

What do you understand by Planning?

3.2 Need for Planning

Need for Planning and Control

Planning is necessary in order to regulate and direct the pattern and direction of development. In a highly populated country like Nigeria, it is virtually impossible to do anything in the way of development without affecting somebody else's interest. There is need for an independent authority to adjudicate and arbitrate in the interest of all concerned parties; hence the need for planning and control.

The need for planning and control can be summarized as follows:

1**. Public Health**: - This emphasizes the fight against diseases; it aims at devising effective approach to deal with the sewerage and sewerage disposal and of introducing to homes and working places, the comfort of been alert against health hazard.

2. **Safety:** - The Safety ideal which in earlier times afforded protection for citizens against outside attack, nowadays seek to protect citizens on foot against citizen's danger on wheels. Increase safety has been achieved in recent times by vast time and expenditure on roads and tunnels which has brought positive improvement in speed and circulation from vehicular traffic, and greater safety and convenience for pedestrians in segregated and precincts.

3. **Economic:** - The economic ideal which is father than others from attainments is demonstrated in positive policy for provision of a wider range of opportunities form and

satisfaction in employment for men and women and all age groups especially in areas which are unproductive to the private investors.

4**. Social:** - There is need for planning for social well being. There is need for good and close spatial interrelationship between homes and other social institutions: shops, open space, places of entertainment. The extent, to which the pleasantness of physical environment can give social satisfaction to its residents, ranks high among the many critical factors in planning.

It has been demonstrated over time that the normal interplay of private actions and market forces often results in situations which is not tolerable and which can only be mitigated by means of control mechanism – planning and control. In a nutshell, the persistent process of urbanization, the worst excesses of industrial plants and the explosion in the population growth and vehicle ownership have in no small way contributed towards a heightened awareness of the need for introduction of some forms of regulation and control.

Self Assessment exercise:

Give a detail explanation of the need for Planning

3.3 Types of Planning

There are different types of planning: **Economic Planning, Physical Planning, Allocative and Innovative Planning.**

Economic Planning: - This is concerned with the economic structure of an area and overall level of prosperity, it works more through market mechanism than physical planning for instance which relies on direct control (State Control or Institutional Control).

Otokiti (1999) defines economic planning as a deliberate control and direction of the economy, by a central authority through various tools and sub-systems within the main system, for the purpose of achieving definite targets and objectives within a specified period of time. Todaro and Smith (2011) define economic planning as a deliberate and conscious attempt by the state to formulate decisions on how the factors of production shall be

allocated among different users, thereby determining how much of total goods and services shall be produced in one or more ensuing periods. Economic planning deals with allocation of resources towards improved welfare for growth and development.

Physical planning: - This is a planning of area structure i.e land use, communication, utilities e.t.c and has its origin in the regulation and control of town development which outstripped the ability of the market mechanism to cope with.

According to Obateru (2004) Physical planning referred to as land use planning is concerned with the spatial arrangement of urban and rural land uses for the purpose of creating orderly, economical, functionally efficient and aesthetically pleasing physical environments for living, working, recreation and circulation.

The spatial arrangement or organization involved two processes :(i) Locating and/or sitting land uses on functional and mutual basis and (ii) allocating land to the land uses. This is the pre-occupation of physical planning at all levels – national, state, regional, urban and local.

Patton and Reed (1988) sees urban and regional planning as a discipline and profession that is concerned with the forces that influence the quality of life from the neighbourhood to the region, state, and nation, using a systematic and creative approach to address and resolve social, physical and economic problems of the neighbourhoods, cities, suburbs, metropolitan areas and larger regions.

There seems to be a commonality in the definitions of physical planning as outlined above. Oyesiku (1998) noted that several definitions on physical planning focus on decision making on the use of land at present and determining appropriate future action in urban and regional areas with a view of satisfying the needs and welfare of the people.

Allocative and Innovative: - These are the names given to two instrumental models of planning divided according to "function" or area of "concern".

Allocative planning is concerned with co-ordination, the resolution of conflicts ensuring that the existing system is ticking over efficiency through time in accordance with involving

policy hence it is sometimes known as Regulatory planning. For instance, in a contest of a small firm, it will involve the planning of deliveries of inputs of raw materials and labour and the distribution of the final goods, but in the national economic contest, it would involve the month to month regulation of the economy.

Self Assessment exercise:

Discuss the difference between Economic Planning and Physical Planning.

4.0 Conclusion

We conclude that Planning is an important activity towards a decision making. Every nation needs Planning because of its importance for the growth, development and well-being of every nation and its citizens.

5.0 Summary

In this study unit we attempt to explore the meaning of Planning, need for Planning and types of Planning. Planning is discussed as an essential process of an informed, meaningful and impactful decisions for the well-being of the people.

6.0 Tutor-Marked Assignment

a. Define the term Planning

b. There are some salient features of Physical Planning that makes it different from other types of Planning. What are these features?

c. Discuss how Planning is important to your country.

7.0 References/Further Readings

Adedidu, A.A (1995). The Essence and Scope of Development Control, in Development control within the context of the New Urban and Regional Planning Law – Decree No. 88 of 1992; Proceedings of Workshop, ed. NITP Pp. 1 – 8, Lagos. NITP.

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Department of Urban Planning, School of Architecture and Urban Planning, University of Wisconsin.

Roberts, M. (1974). An Introduction to Urban Planning Techniques, London: Hutchinson Press.

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UNIT 2: LEVELS OF PHYSIAL/ LANDUSE PLANNING

CONTENTS

1.0 Introduction

This unit will look at the different levels of Physical/Land use planning. It examines planning at different spatial unit, thereby giving a wider scope of the subject matter (Planning) that can be used as guide in the planning of environment.

2.0 Objective

At the end of this unit student should be able to

- Know the difference between National and State physical planning.
- Understand the concept of Regional Planning
- Have clear understanding of planning at Urban and Local level

3.0 Main Content

3.1National, State Physical Planning

National Physical Planning

A national physical plan gives guidance on the overall spatial distribution of a country's population and employment opportunities by taking into account the geographical location of its natural resources.

It is desirable for the developing countries of the world in particular to formulate perspective (long-term) national physical plans because of the fundamental need for them to make clear what efforts have to be made not only by the countries themselves but also by those developed countries that are willing to assist them to raise the living standards of their peoples.

State Physical Planning

State physical planning applies only to a federation. The scope and contents of a state physical plan are, by and large, the same as those of national physical plan. In territorial extent, some of the component states of such federations as the USA, Canada and Australia are larger than most of the countries of Europe and West Africa. Ideally, state physical plans should be produced within the framework of a national (federal) physical plan for the purpose of achieving nation-wide integrated physical development.

Self Assessment exercise:

Explain the difference between National and State Physical Planning

3.2 Regional Planning

Regional Physical Planning

Regional planning is the third level of physical planning in a federation. Regional plans are desirable within the framework of national or state physical plans as well as for federal territories. In other words, a country or a state in a federation should be divided into planning regions to ensure a reasonably balanced spatial distribution of population and developmental facilities to achieve maximum social and economic returns. For the purpose

of balanced internal development, it is necessary that the urban and rural areas in a planning region be interrelated and integrated.

To the physical planner, a planning region is an extensive area that is larger than a single community but smaller than a nation or a state (in most cases) in a federation. It is characterized by certain selected physical or socio-economic criteria which are functionally related. From a purely physical planning perspective, planning regions are of two categories: (a) physical regions such as river and lake basins, extensive coastlands, plains, hilly or mountainous areas and (b) socio-economic regions such as metropolitan, industrial complex, depressed and frontier (underdeveloped) areas.

Where a planning region, such as a river basin, is situated over the boundary or boundaries of two or more states in a federation, a joint regional plan should be prepared (by a joint regional planning authority) by the states involved to function within the framework of a national physical plan in pursuance of coordinated and integrated physical development

Self Assessment exercise:

Discuss the concept of Regional Plan from Physical Planning perspective.

3.3 Urban, Local Planning

Urban Planning

Urban planning attempts to solve the problems of urban growth and decay. Precisely, it deals with the future physical form and structure of towns and cities. By physical form is meant their spatial layout and pattern or arrangement of urban land uses on a functional basis. The ultimate aim which urban planning attempts to achieve through the physical planning form and structure of urban settlements is the creation of functionally efficient physical environments for living, working, circulation and recreation.

The main elements of an urban plan are the residential, industrial, commercial, educational, health, public administration, transportation, public utilities and recreation areas. Adequate spaces should be provided for these land uses in appropriate locations

Local Planning

Local (land-use) planning is concerned with the detailed layout of the various local areas (zones) contained in the urban plan. As stated above, such local areas are residential, industrial, commercial and recreation zones as well as the sites for educational and health establishments.

It is at the local level of physical planning therefore that land is subdivided into plots and access (service) roads are provided to buildings, structures and other land uses. As local plans, land subdivision (layout) plans are concerned with the orderly, economical and aesthetic arrangement of roads, buildings and structures, recreation areas as well as of public utilities and community facilities and services for the purpose of creating functionally efficient and aesthetically pleasing physical environments.

It is through land subdivision plans that the general policies and broad proposals contained in national, state, regional and urban plans are detailed out to guide public and private land developers. In other words, national, state, regional and urban plans merely specify the policies and intentions of governments while it is the local plan that sets out how the broad policies and intentions are to be carried into effect by land developers. Apart from being a positive guide for land developers, land subdivision plans are the fundamental mechanisms for development control. In pursuance of planned development, therefore, no building or structure should be allowed to be erected on a plot or parcel of land for which a land subdivision (layout) plan has not been prepared and approved, or for which prior clearance has not been given by the local planning authority

It is noteworthy that land subdivision plans are needed not only for the component local areas of urban plans but also for small towns, villages, holiday areas and other rural spots where there are land development pressures.

In towns and cities where there is effective overall (comprehensive) planning, layout plans are prepared and implemented within the framework of urban master (development) plans. The role of layout plans therefore is to detail out for implementation the broad policies and proposals contained in urban plans. To prevent incompatible use and development of land,

therefore, no layout plans should be approved unless they are in conformity with the provisions of urban plans or planning schemes if there are any.

The problems which beset those urban settlements whose growth and development are not guided by layout plans include;

a) large-scale scattered development in the outer developing areas, a land-use and land development process which town planners sometimes refer to as scatteration and leap-frogging;
b) uncoordinated use and development of urban land;
c) lack of access roads to a larger number of buildings and structures;
d) lack of public utilities, especially water and electricity supplies, to serve the scattered developments;
e) lack of social infrastructures, educational and health facilities, in particular, to serve the scattered and uncoordinated developments; and
f) lack of recreational areas and facilities for the present and future residents of the areas. It is through layout plans therefore that land uses and land developments are co-ordinated at the local level; access roads are provided to all land uses, buildings and structures; and provisions are made for public utilities, social infrastructures and recreation areas and facilities.

Self Assessment exercise:

Discuss the unique focus of urban planning.

4.0 Conclusion

We established the fact that Planning is required at different levels of development such as National, State Region Urban and Local level. ,The land use plans generally are concerned with the orderly, economical and aesthetic arrangement of roads, buildings and structures, recreation areas as well as of public utilities and community facilities and services for the purpose of creating functionally efficient and aesthetically pleasing physical environments.

5.0 Summary

This unit explains the different level of land use planning for the purpose of creating functionally efficient and aesthetically pleasing physical environment. While national, state, regional and urban plans specify the policies and intentions of governments the local plan sets out how the broad policies and intentions are to be carried into effect for functionally efficient and mutual conducive environment.

6.0 Tutor-Marked Assignment

a. Discuss the interrelation between National, State, Regional, Urban and Local plans.
b. What are the main elements of urban plans?

c. Discuss the consequences of physical development of any spatial unit or project without pre-requisite plan

7.0 References/Further Readings

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Onokerhoraye, A.G., and Omuta, G.E (1986). Urban Systems and Planning. Geography and Planning Series, University of Benin.

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UNIT 3: MASTERPLAN CONCEPT IN PLANNING

CONTENTS

1.0 Introduction

This unit is to discuss the concepts of Master plan as a major instrument of planning and development control. It examines the definition and purpose of Master plan, physical elements of the instrument and the characteristics of the Master plan.

2.0 Objective

At the end of this unit student should be able to

- Explain the meaning of Master plan
- Understand the physical elements of Master plan
- Understand the characteristics of Master plan

3.0 Main Content

3.1 Definition and Purpose of Master plan

In some cases, master plans are the off springs of regional plans, although the former do not invariably flow from the latter. The master plan has been defined as the official document of a municipal government which sets forth its major policies concerning desirable future physical development of a community (Kent, 1964). Also according to Black (1967), the comprehensive plan is an official public document adopted by a local government as a policy guide to decisions about the physical development of the community.

The master plan indicates in general way, how the policy makers want the community to develop in the next 20 to 30 years. The published master plan document must include a single, unified general physical design for the communities, and it must attempt to clarify the relationships between physical development policies and social and economic goals

The master plan may be said to serve six purposes as follows:

1. To provide the physical environment of the community as a setting for human activities, to make it more functional, beautiful, decent, healthful, interesting and efficient.
2. To promote the public interest of the community at large, rather than the interest of individuals or special groups within the community.
3. To facilitate the democratic determination and implementation of community policies on physical development.
4. To effect political and technical co-ordination in community development.
5. To inject long-range considerations into the determination of short-range actions, and
6. To bring professional and technical knowledge to bear on the making of political decisions concerning the physical development of the community.

Self Assessment exercise:

(i) What do you understand by Master plan?

(ii) Discuss the purpose of Master plan in Planning.

3.2 Physical Elements of Master plan

The following are the five basic physical elements of the urban region that are treated in all standard master plans.

(a) **Land Use**: This refers to the use of private property for commercial, industrial and residential purposes. This section is also called the working-and-living-areas section of the master plan. Residential area proposals must indicate the population densities, and local and district residential area boundaries used in the determination of the densities and holding capacity proposals. The proposals for the industrial areas should be sufficiently described in the explanatory text and on the plan drawings to indicate plainly, the character and intensity of industrial development intended. The business-and-commercial district proposals must be described, and whatever special proposals have been decided upon with regard to the Central Business District should be set forth here. The general location, character, and extent of the primary and secondary shopping centres must be described and related to the residential population density proposals.

(b) **Circulation:** This section of master plan is concerned with the street-and-highway system, as well as public transportation routes and stations, and the servicing infrastructure. The major circulatory requirements of the community are determined by the spatial relationships between the primary urban activity centres, and by the proposals expressed in the living-and-working areas as well as the community facilities and civic-region sections of the plan. The circulatory system of the master plan is made up of a hierarchy of streets and related facilities, including primary and secondary streets systems, the regional freeway, the parkways, major off street parking facilities, and air, rail and water terminals and routes. It also should include the local and metropolitan public transport systems, truck terminals, and routes, and the system of pedestrian ways. Usually more than 25 percent of the total land area of the community is required to accommodate all the circulatory systems.

(c) **Community Facilities**: this section deals with all those public activities that involve physical environment, including schools, parks, playgrounds, and civic centres. They should also include libraries, police stations, hospitals, health centres, art galleries, fire

stations, churches, stadia, golf courses, and cemeteries. The plan must endeavour to relate these facilities to the major physical design proposals made in the working-and-living areas section of the plan.

(d) **Civic Design**: The section of civic focuses in the major features and policy decisions of the plan which are the result of aesthetic judgments. The civic design section of the plan is concerned with certain kind of aesthetic experiences: it is the overall structure and form of the city which creates in the minds and emotions of the citizens, a sense of individual dignity and well-being, experience which the individual has, and his reactions to his immediate surrounding as he moves about in the city. The civic-design section attempts to bring out the major physical design proposals that have been made concerning the form of the city, as a whole, considered in relation to its site, and the key features and parts of the city that are individually of special significance to the overall design. Landscaping is usually an element of the civic design section.

(e**) Utilities:** Every modern city depends on an extensive, costly, fixed network of utilities. The utilities section includes primarily, those community services that are, or should be provided in pipelines, conduits, or wires, that could be over-head or underground. These include the water distribution networks, storm drainage, and sewage disposal systems, as well as gas, electricity, and telephone. There is usually an overlapping with the community facilities section, regarding those services that require relatively large land areas, such as sewage disposal plants, refuse dumps, pumping and generating/generator stations and water storage reservoirs

Self Assessment exercise:

Identify and discuss the physical elements of Master plan

3.3 Characteristics of Master plan

The characteristics of master plans are:

(a**) Focus on Physical Development**: The document focuses only on physical development and ensures that this focus is not confused by combining physical development

considerations with others. The financial and social problems of the city are to be handled by other more specialized organs of government, leaving the planning office to focus its attention on physical development.

(b) **Long-Range Perspective**: The master plan is future-oriented and forward looking. It seeks to anticipate the future and provide for the future needs of the community in so far as it is possible to make reasonable judgments as to what these needs will be. Long range in most communities means not less than a 20 years plan period. In reality, the time scale of the plan will be determined by a combination of the population and economic forecasts and the predictability and stability of the subject matter relevant to each of the major physical elements dealt with in the plan. Usually, since land use which is the basic aspect of the plan depends on population projection, forecasts on residential uses and areas, as determined by population forecasts continue the dominant time scale of the plan. However, although the plan will be made with respect to a target and date, the plan must not be seen as a picture of an end-state, but a statement of end directions, which must be continuously adjusted as time passes. As a rule the plan must be reviewed every five years.

(c) **Comprehensiveness:** There are three aspects to the comprehensiveness of the master plan. First, it must deal with all of the essential physical elements of the urban environment, within the boundaries of the city. Second, it must take into account, the development trends in the larger geographic setting within which the city is situated. Third, it must consciously relate to the social and economic forces that it proposes to accommodate and are themselves affected by the plan.

In other words, comprehensiveness means that the master plan, in order to logical, reasonable and useful, must recognize and define its relationship with all significant factors, physical and non-physical, local and regional, that affect the physical growth and development of the city.

(d) **Generalness:** The master plan be must general and remain general. By this it meant that the master plan must focus on the main issues and the big ideas. The plan must not include any details that will tend to obscure or distract attention from the major policies.

The master plan must be distinguished from those specific documents that are intended to implement it. These include subdivision regulations; zoning or ordinates, and local plans.

(e) **Clear Relationship of Physical Design Proposal to Basic Policies**: Every plan for the physical development of a community is an expression of value judgments. These value judgments are determined when community objectives are being articulated and also when assumptions are being made regarding governmental, economic and social as well as physical factors. Value judgments are also reflected in the planning principles and standards that are adopted. The master plan should, therefore, endeavour as far as it is possible, to relate the physical design proposals to the major policies, to the extent that these policies are an embodiment of societal value positions.

Self Assessment exercise:

Discuss the characteristics of a Master plan

4.0 Conclusion

We conclude that the instrument of Master plan is very vital in physical planning.

We equally established the fact that the physical elements of Master plan as well as characteristics of Master plan are major substances that shape the organization of land use in an ideal society.

5.0 Summary

In this study unit we attempt to explore the instrument of master plan in the control of physical development. This unit further explains the purpose and physical elements of Master plan.

6.0 Tutor-Marked Assignment

a. What do you understand by Master plan and discuss its purpose in Physical Planning

b. Discuss the Physical elements of a Master Plan

c. Attempt a critical assessment of the use of Master plan in urban physical development in Nigeria.

7.0 References/Further Readings

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MODULE TWO

INTERNAL STRUCTURE OF URBAN AREAS

Unit 1: Urban Land use

Unit 2: Theories of Internal Structure of Cities

Unit 3: Models of Urban Population Density

UNIT 1: URBAN LANDUSE

CONTENTS

1.0 Introduction

Urban centres are characterized by a set of activities which actually account for the concentration of people in them. Therefore; this unit introduces the students to internal

structure of urban centres. In the same vein, factors influencing internal structure of cites as well as problems associated with urban land use are discussed.

2.0 Objective

At the end of this unit student should be able to

- Discuss factors influencing internal structure of cities
- Understand the components of urban centres
- Explain the problems of urban land use.

3.0 Main Content

3.1 Factors Influencing Internal Structure of Cities

A variety of factors influence the expansion of urban land use as well as changes within the existing land use structures in towns and cities. These factors have been traditionally classified as operating under the influence of two forces**: centrifugal and centripetal**.

Centrifugal forces: - Centrifugal forces encourage the outward movement of people and businesses thereby causing the dispersal of human activity and the relocation of urban sectors and zones. The reasons behind the operation of these forces include:

(i) Traffic congestion, noise and pollution at city centres which tend to drive people away to the suburbs.
(ii) High land value at the city centre tends to drive people to the suburb where it is cheaper.
(iii) Poor houses in city centre
(iv) High building densities at city centres

All these factors push people to the suburbs where there are low density development, better housing and space for movement.

Centripetal forces: - These forces encourage the inward movement of people and businesses, causing a concentration of human activity. These include:

(i) Site attractions like route junctions at city centres
(ii) Increased accessibility for businesses at city centres
(iii) Functional linkages of businesses at city centres
(iv) Locational prestige at certain strategic points in the city centres
(v) Entertainment and cultural facilities at city centre
(vi) Desire of some people to live near their place of work at city centre.

On the basis of the above, different land use are bond to locate at different section of the city since the centre has potential for outward movement as well as concentration.

Self Assessment exercise:

Explain the centrifugal and centripetal factors influencing location of urban landuse.

3.2 Urban Land use Types

Urban areas are characterized by a variety of land use types. The most important of these are discussed below.

Residential Land Use: Residential areas constitute a major component of the overall land use activities in most urban areas. The proportions of the developed urban land devoted to residential use vary from one part of the world to the other and also from one urban area to another. However, in some cases over 50 percent of the total land use is devoted to residential areas. Residential land use within an urban area also varies in terms of density, quality, racial or ethnic occupancy and age.. In other words there are various types of residential districts within the city and these have distinct economic, social, physical and cultural characteristics.

Commercial Land Use: Commercial land uses constitute an important component of urban land use from historical times. This is because commerce is an essential aspect of any urban economy. Commercial activities require easy access and high visibility. The centre of transport network and other major intersections create the central business district and the major shopping centres and routes serving them are sought by arterial-oriented

businesses. Generally, the complexity and extent of land use devoted to commercial activity depend on the size of the urban area concerned. In the major urban centres five levels of commercial structure are commonly identified. These include:

(i) The central business district
(ii) Major outlying shopping centres
(iii) District shopping centres
(iv) Neighbourhood shopping centres
(v) Local stores or market places

However, smaller urban centres may not have all the above types of commercial areas. Of all the five types of commercial structure identified above the most complex is the central business district (CBD) which is known to have certain district characteristics. Some of these are outlined below:

(i) Concentration of shops, offices, public buildings, hotels and places for entertainment. These functions tend to draw people from within and outside the city and hence generate high traffic within and between it and other parts of the city.
(ii) Beyond the CBD land use changes drastically, for example, land becomes less intensively used, car dealers, garages, warehouses and workshops begin to appear in greater profusion. Thus extensive land use begins to appear.
(iii) A high land value of the CBD often leads to buildings which are very tall and multifunctional. For example, ground floors are used as retail shops while higher floors are used as offices by professional and office workers such as accountants, lawyers, printers, hairdressers etc.
(iv) CBDs are also characterized by the internal zoning of the land use which is a reflection of the changing value of land from the innermost core to the periphery of the CBD.
(v) The limited residential use of the CBD gives rise to the desertion of the area at night and weekends while being very busy during the day time.

(vi) Finally, CBDs are generally subjected to rapid changes which are a reflection of the continuing pressure on land use in the area. Thus they are characterized by urban renewal, new buildings springing up new roads, new population and old shops being replaced by new office blocks and old theatres by new departmental stores.

Industrial Land Use: Many urban areas have some form of industries which are reflected in the urban space. The degree of land devoted to industry is dependent on the economic base of the urban area. Towns which developed as industrial centres are dominated by large factories while other towns which developed manufacturing functions recently do not have many factories hence much land is not devoted to industries. The location of industrial land use within the urban areas in influenced by transport or communication networks hence they are located nearer to roads, railways, canals or coastlines. Industries can also be found in clusters where there are mutual economic benefits to be derived. However, small scale industries tend to be scattered over the urban space since they require small amounts of power and raw materials. Generally, heavy industries which require large amounts of raw materials or which produce bulky goods are usually in need of cheap transport and are therefore commonly located near harbours, canals, railways and major roads. On the other hand, light industries are more likely to be located nearer to residential areas since they have less demanding site requirements and are less destructive to the local, social and aesthetic environment.

Other Urban Land Uses: Other activities which utilize land in the urban areas include transport, public services of various types and open space. Urban transport is quite important in this respect because it is through transport routes that internal circulation is generated in the urban area. In an ideally planned urban area, about 20 to 25 percent of the total land use should be devoted to transport.

Self Assessment exercise:

Discuss the land use types of an urban centre and examine the unique characteristics of each of them.

3.3 Urban Land use Problems

In a planned built-up urban environment, the land resource is budgeted, planned and allocated in such a way that incompatibilities are prevented and a conducive environment is created for living and working among others. In a planned urban environment, the land uses should complement one another rather than conflicting. The land use should be arranged in a harmonious manner such that enough space is provided for each of the fundamental activities of the urban system.

It is against this background that the landuse problems especially in Nigerian cities can be examined. Many Nigerian cities predate any attempt at landuse planning, such cities include: Ibadan, Benin city, Abeokuta, Kano and Ife. The central parts of this class of cities were developed without regards to any type of systematic layout. The primary concern of physical development was the development of residential structures. Consequently, all available space covered with the residential buildings. Physical development did not ensure that adequate allocation was made for such other essential land uses as circulation and transportation, community services and facilities, commercial facilities, open spaces and recreational facilities. The consequence of this is that the central part of most pre-colonial cities like Ibadan, Benin and Abeokuta are largely inaccessible by vehicles; and community services as well as open spaces and recreational facilities are lacking.

In the colonial era, some forms of regulation were introduced to address land use problems. Their impact can however be said to be limited, because segments of the city such as the European quarters (now Government Residential Areas (G.R.A)) were created and treated to some land use regulation. The rest of the city except the areas declared as ‘schemes’ were left largely unregulated. The colonial ordinance did not provide for comprehensive land use development of the entire city, and the standards prescribed were basically alien. Consequently, the standards were unrealistic and were largely undetermined.

The major land use problems in post colonial Nigerian city are that of uncontrolled sprawling and suburbanization (Onokerhoraye, 1988). Most of the statutory regulatory

instruments cannot keep pace with the rate of development at the rural-urban fringe the land use is always in a state of flux (Omuta, 1985). Thus, rather than being a zone of homogenous, high grade residential area, urban fringe in the country is characteristically highly differentiated. This according to Wehrwein (1942), is because suburban areas are "institutional deserts" where land use is not under rigorous development control because the area is for the most part, outside the declared planning area of the city. The physical environmental problems of suburban areas have arisen, therefore because such areas are usually regarded as "no man's land" (Golledge, 1960) hence the management of the environment is no man's business. Not only are land uses in suburban areas incompatible and in conflict, there are serious problems of the lack of amenities.

Self Assessment exercise:

Discuss the urban land use problems in the colonial and post colonial Nigeria

4.0 Conclusion

Structurally, urban centres are characterized by a set of land uses, (residential, commercial, industrial etc) all of which combine to generate the spatial configuration of the city. The spatial configuration of city is products of long process of development and also associated with certain problems both in the colonial and post colonial era.

5.0 Summary

The urban land use types, characterized by residential, commercial, industrial and others are influenced by centrifugal and centripetal forces The emerging spatial configuration determine the quality of life experienced. In both the colonial and post colonial era, urban land uses are characterized by certain fundamental problems that affect quality of life in different urban centres.

6.0 Tutor-Marked Assignment

a. Discuss the factors influencing internal structure of cities.

b. Discuss the basic features of central business district as an important component of urban land use.

c. Explain how harmonious relationship can be achieved among different land uses of an urban centre.

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UNIT 2: THEORIES OF INTERNAL STRUCTURE OF CITIES

CONTENTS

1.0 Introduction

Analysis of urban land use structure has attracted the attention of researchers in different parts of the world for a long time. One outcome of the various studies conducted on the nature of urban land use structure has been the emergence of models based on internal structure of cities. Three descriptive and classical theories: the concentric, sector and multi nuclei have been suggested in explanation of actual urban land use patterns and are discussed in this unit.

2.0 Objective

At the end of this unit student should be able to

- Understand and explain the Burgess Concentric zone theory of land use.
- Explain the Hoyt's sector theory
- Discuss the Harris and Ullman Multiple-Nuclei theory of land use

3.0 Main Content

3.1 Burgess Concentric Zone Theory

This theory emerged from a study of Chicago by Burgess in1925 (Onokerhoraye and Omuta,1986). It was essentially an application to urban land use of Von Thune's earlier theory relating to rural land around a city. The theory suggests that the pattern of growth in the city can best be understood in terms of five concentric zones and a sixth lying beyond the immediate confines of the urban area.

The six concentric zones are:

1. The central business district (CBD): which is considered to be the focus of commercial, social, and civil life, and of transportation. This area contains the department stores, smart shops, huge office buildings, clubs, banks, hotels, theaters, museums, and so on, which are of importance to the whole urban area.

2. The fringe of the CBD: This second zone surrounds the CBD and is an area of wholesaling, truck, and railroad depots.

3. The zone in transition: This is a zone of residential deterioration that used to be quite wealthy but, as the city expanded and immigration occurred from rural areas and from overseas, this area became filled with low-income families and individuals. As a consequence, it contains the slums and rooming houses that are so common to the peripheral areas of the CBD. Business and light manufacturing encroach into this area because of the intensive demand for services and supply of cheap labor.

4. The zone of independent workingmen's homes: This zone consists primarily of industrial workers, who have escaped from the zone of transition. It might be regarded,

therefore, as an area of second generation immigrants and families who have had enough time to accumulate sufficient wealth to be able to purchase their own homes.

5. High-class residences: This is a zone of better residences containing single-family dwellings and exclusive restricted districts. There are a few high-Income apartment buildings.

6. Commuters' zone: This is the outermost zone containing a broad commuting area. These are the suburban areas containing satellite cities and middle and upper-class residences along rail lines or rapid transit. (See Fig 1)

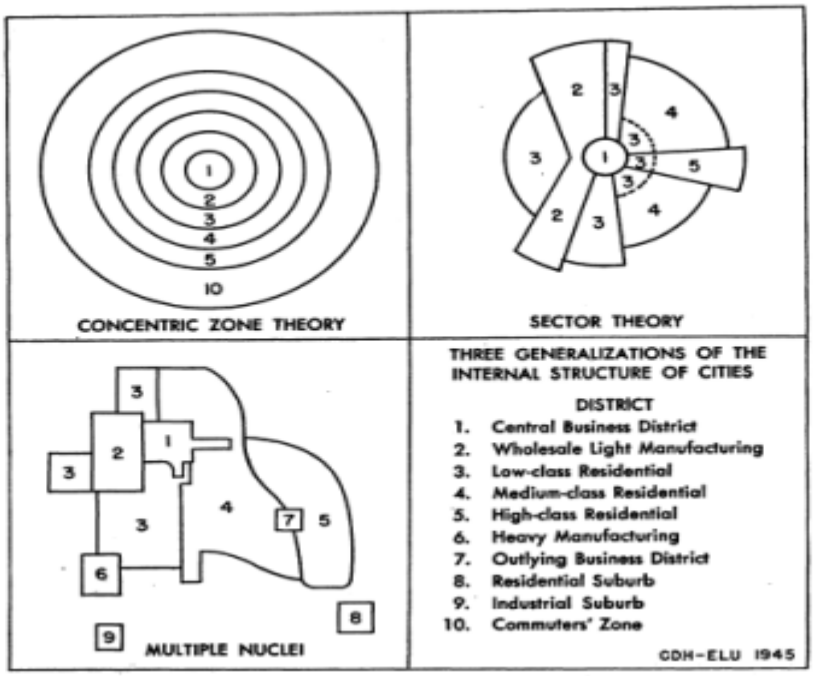

Fig. 1: Concentric (A) Sector (B) and Multiple Nuclei (C) Models of Urban Structure

The main process operating in Burgess' theory was the tendency for the people living in an inner zone to invade and eventually succeed to the next outer zone. The energy to maintain this dynamic system was the continuing growth of the city's population by means of immigration to the centre (Bradford and Kent, 1978). Two other factors operated to

induce rapid changes in urban land use according to this theory. The first is the big growth which took place in service employment in the 1920s in American cities. Although this made it possible to build street-famed skyscrapers, there had been strong outward pressure from the central business 'district to expand into the adjacent zone of mixed land use. Secondly, the car, bus and train way were providing mobility on a scale which now made it possible, not only for the rich to live in the outer suburbs, but for poorer sections of the population to attain to the inner ones.

Self Assessment exercise:

Discuss the Burgess Concentric Zone theory of land use

3.2 Hoyt's Sector Theory

Hoyt's sector theory is another model of urban land use structure. The theory is essentially complementary to that of Burgess rather than mutually exclusive. Burgess and Hoyt approached their study of the city from different viewpoints. For Burgess, the sociologist, the city was a laboratory for observing social behaviour, whereas Hoyt, an economist was concerned with discovering how the 'housing market operated in order to advise the American government on mortgage policy (Scargill, 1979). Although Hoyt is primarily concerned with the movement of high-rent neighbourhoods, it has implications for other types of housing as well. Using rental value as a surrogate of housing quality, Hoyt demonstrated how residential land uses tended to be arranged in sectoral fashion, radiating outwards from the city centre along transport routes. Among the most important conclusions which Hoyt outlined are:-

1. The highest rental' area is Located in one side of the city'. Generally, these high-rent areas are in peripheral locations, though there are instances when a high rent sector extends continuously' out from the centre of the city.

2. High-rent areas often take the form of wedges, extending in certain' sectors along radial lines leading outward from the centre to the periphery of the city.

3. Middle-range rental areas tend to be located on either side of the highest rental areas.

4. There are some cities in which large areas of middle-range rental units tend to be found on the periphery of low-rent residential areas as well as high-rent areas.

5. All cities have low-rent areas, and these are frequently found opposite to the location of the high-rent areas, and usually in the more central locations.

Hoyt criticized the concentric circle theory of city structure proposed by Burgess for implying that there is a progression from run-down property occupied by the poor near the city centre to expensive new housing for the wealthy on the fringe. Thus, Hoyt arranged the rent areas of 30 American cities in an ideal pattern of concentric circles in order to show that the greatest variation is not between concentric circles but between sectors. Hoyt argued that sectoral; location and extension of high-rent areas tended to be related to established lines of travel especially along routes of fastest transport for ease of movement into the Central' Business District (CBD); to waterfronts not used by industry and to high ground, open country and the houses of community leaders. He observed that high and low-rental areas repelled one another

Self Assessment exercise:

Explain in details the Hoyt's sector theory of urban land use

3.3 Harris and Ullman Multiple-Nuclei Theory

On the basis of the shortcomings of the concentric zone theory and the sector theory, Harris and Ullman suggested that the city has developed a number of areas that group around separate nuclei. The emergence of these separate nuclei is a response to four major factors:

1. Certain activities require specialized facilities, for example, a port district needs a suitable waterfront.
2. Similar functions group together because they profit from juxtaposition, for example, office districts.
3. Certain unlike activities are detrimental to each other, for example heavy industry and high-class residential development, repel one another as suggested by Hoyt.

4. Certain activities cannot afford the high rents of the most desirable sites, for example, a modern one-storey factory cannot afford the high rents that office functions are prepared to pay for certain sites.

The theory articulates that as a city grows, it absorbs existing nuclei and others are created, increase in the number of nuclei usually involving greater specialization.

Self Assessment exercise:

Discuss the Harris and Ullman Multiple-Nuclei theory of landuse.

4.0 Conclusion

We conclude that the three classical theories of internal structure of cities offer varying explanation that attempt to explain the spatial organization of the cities The theories being complementary to each other to a great extent provide an insight to the arrangement of land use pattern as we have in our cities today.. However, the theories are not without some shortcomings as cities respond to human dynamism in different parts of the world.

5.0 Summary

We discussed three classical theories of internal structure of cities. The relevance of each of these theories to the present urban centres are discussed to guide students towards clear understanding and application.

6.0 Tutor-Marked Assignment

a. Compare and contrast Burgess and Hoyt's Theories of urban structure.

b. Discuss the major criticisms of the classical theories of urban structure especially in developing world.

c. With reference to a chosen urban centre in Nigeria, to what extent do the classical theories of urban structure explain the spatial organization of land use in the city?

7.0 References/Further Readings

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UNIT 3: MODELS OF URBAN POPULATION DENSITY

CONTENTS

1.0 Introduction

This unit will look at the Models of urban population density as means of further understanding of internal structure of cities. The distribution of population within a given urban space provide an insight into its spatial organization and hence its structure.

2.0 Objective

Under this unit student should be able to

- Understand Population density gradients as apply to urban centre
- Discuss land value theory in relation to urban land use

- Appraise the theories of urban structure with respect to their merits and shortcomings

3.0 Main Content

3.1 Population Density Gradient

Another very simple descriptive model of city structure has been constructed from observations of the population densities of many cities. One of the most stimulating attempts at postulating a general mathematical statement concerning the distribution of population densities within urban areas has been presented by Colin Clark (1951). On the basis of data which he collected from many urban centres throughout the world, he concludes that urban population density decrease in a negative exponential fashion (that is decrease at a 'decreasing rate) with distance from the CBD.

The formulation of this model is presented in equation form as follows:

$D_x = D_o e^{-b x}$

Where: D_x is the population at distance, x from the city centre,

D_o is the interpolated (estimated) population density at the city centre,

b is a parameter indicating the rate of decrease of population with distance, i.e., the slope of the curve.

x is the variable distance.

e is base of the natural logarithms.

Generally, therefore, the model indicates that population densities decrease with distance from the CBD and then tend to flatten out.

Another feature of the data presented by Clark relates to the fact that the, densities not only decline with distance from the city centre but that the lines are generally steeper in the early

period of urban development than in the later period, apparently as a result of improved transport facilities. Newling (1966) regards this as one of the most interesting features of Clark's data, and after examining information from other urban areas, he concludes that the population density gradient decreases' through time in a constant, systematic fashion. In fact, he suggests that the mathematical form of this relationship is the same as that suggested by Clark relating population densities to distance from the centre of the city.

Explanations of the negative exponential decline of density with distance and time usually involve a balance of two desires, one for access to the city centre for employment the other for abundance of living-space. Those who can afford to pay commuting costs can therefore live on larger areas of land (that is lower densities) on the periphery of the city. Changes in the density curve over time depict the growth of cities. The area of maximum density moves outwards from the city centre as the commercial core expands and redevelopment of old central housing occurs. The peak density also typically declines as it moves outwards while densities rise on the periphery as the city population increases. This model describes only the night-timer distribution of population and, like Burgess and Hoyt, assumes a single centre of employment. Most modern cities now have more complex patterns of population density around nuclei of employment similar to those suggested by Harris and Ullman (Bradford and Kent, 1979).

Self Assessment exercise:

Explain the population density model of an urban centre as presented by Colin Clark (1951)

3.2 Land Value Theory

A further model of urban structure involves land values. The earliest variant of this theory is Alonso's theory of land rent (Alonso, 1960, 1964). His general model follows Von Thunen, Haig and Hurd in seeking to relate the intensity of land use to transportation costs, though Alonso is concerned to extend Von Thunen's model of agricultural land use to the spatial structure of the city. In the urban case he develops an abstract model applicable to both firms and individual households as consumers of space {Ley, 1983). The theory

assumes that the centre of the city is a highly desirable location, that land here is in short supply, and that users of urban land will make competitive bids for a site here. The user willing to pay most will be the one who will obtain the greatest returns from the site. Since the central parts of cities command high prize, it is occupied by high order retail functions like department stores which need to be central to their market, and offices which need to be easily accessible to the Labour pool. The market and Labour pool are most accessible from the centre because Public and private transport systems are focused here. 'Industrial and residential uses place less value on centrality. Fig. 2 shows the locational rents that different activities will bid for locations at various distances from the centre. Just as in Von Thunen's concentrical model, rings emerge that are characterized by certain Land uses.

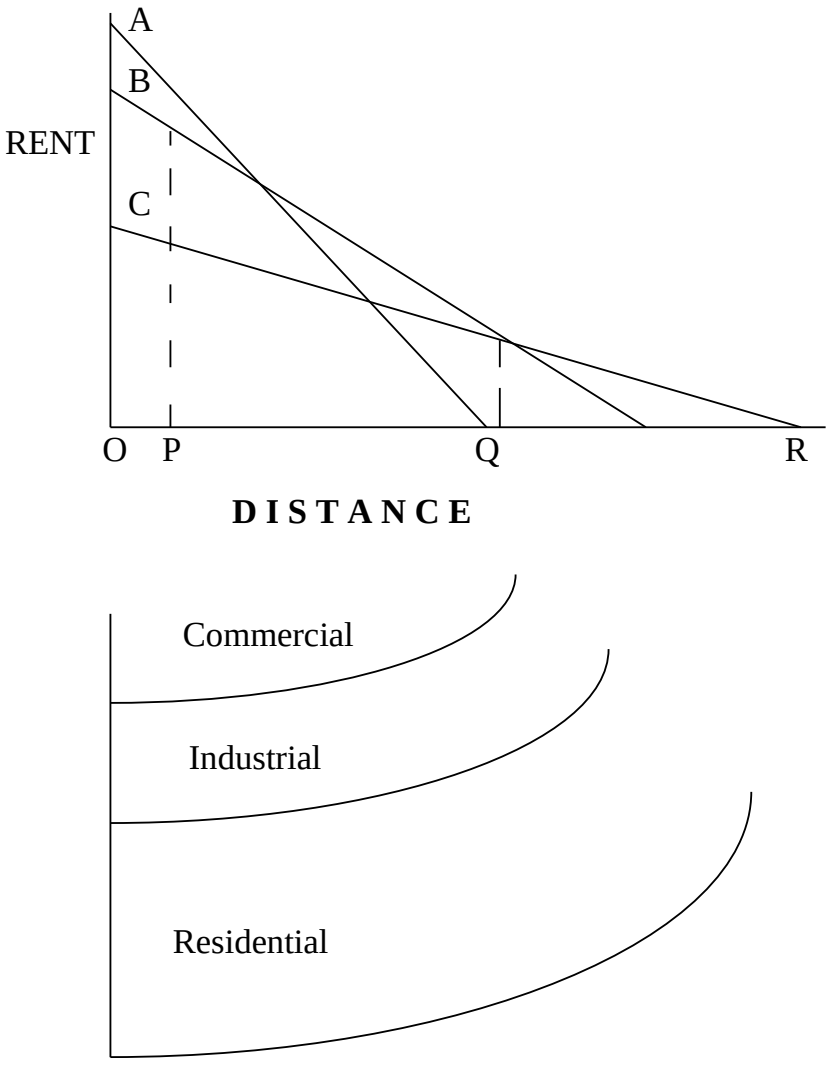

Fig. 2. Hypothetical rent-distance relationships within a city.

Thus, the concentric zone model of Burgess derives support from the theory of urban land rent as outlined above. The model shows the basic patterns of commercial and residential land use suggested by Burgess. It also helps to explain the population density model. Those who can afford commuting costs can buy a larger amount of land on the periphery for the same money as a smaller unit nearer the centre (Bradford and Kent, 1978).

Self Assessment exercise:

Discuss the influence of land value on urban land use.

3.3 Appraisal of Theories of Urban Structure

The concentric zone, multiple nuclei and sectoral theories of urban land use as well as the land value and population density models have been subjected to much empirical analysis in the literature. Consequently, a number of criticisms have been put forward against these theories. Some of these are outlined below:

i) Burgess has been criticized for ignoring the effects of topography and of geographic inertia, although he shows that he is not unaware of the unique elements of a city structure such as the complications introduced by the lake front, railroad lines and historical factors.

ii) Burgess has also been criticized for assuming equal access to the city centre from all directions. This criticism is significant because under normal conditions of route ways radiating from the centre, the accessibility in terms of time or cost extends outwards along these routes.

iii) Burgess has also been criticized for implying that there is a progression from run-down property occupied by the poor near the city centre to expensive new housing for the wealthy on the fringe. Although it is usual for housing to filter down the social scale as people move further out, there are areas of old housing maintained in good repair by the wealthy close to the city centre as there are lower income groups living in new housing on the fringe. Some central high-class areas have persisted through time, neither being invaded nor filtering down. Beacon Hill in Boston is an often-quoted example. The prestige of living in the area continues to attract high-class people, although eventually invasion or downward filtering usually takes place.

iv) Burgess and Hoyt's processes are typical of growing western cities. Such processes, especially invasion are not so prevalent in cities with static or declining populations.

(v) With respect to the land value theory, it has been criticized because many modern cities have lost some of the accessibility they formerly possessed as a result of traffic congestion as well as restrictions on vehicular access and parking.

vi) Accessibility to the urban resident is not limited to journey to work but also access to schools, shops neighbourhood facilities such as parks, recreation centres and place of worship. For many people, the physical and social characteristics of neighbourhoods influence their choice of residential areas more than accessibility to work place.

(vii) The concentric land value model assumes competition for central sites, but changes in the nature of manufacturing or retailing make suburban or urban fringe locations more attractive to many forms of economic activity than congested urban centres. Such decentralization, with its further implication for the other forms of accessibility considered above, distorts still further the theoretically smooth curve of land values.

Self Assessment exercise:

Identify and discuss a theory of internal structure of urban centre with emphasis on its strength and weaknesses

4.0 Conclusion

We conclude that the various theories of urban land use structure are interrelated. They are characterized by strength and weaknesses and this influence their level of application to different category of urban centre. This unit has however been written in a way that learner will find it easy to understand, retained and applied.

5.0 Summary

We explained various theories that are related to urban land use structure and where necessary indicate similarities and differences between them. The criticisms of each of the theories were discussed to aid student understanding.

6.0 Tutor-Marked Assignment

a. Urban population densities decrease in negative exponential fashion with distance from the CBD; Discuss.

b. Outline and discuss the major criticisms that have been put forward against the Burgess concentric circle theory of urban structure

c. Growth by the outward expansion of the built-up area has contributed largely to the evolution of the contemporary land use pattern in most Nigerian cities--Discuss

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MODULE THREE

HISTORICAL EVOLUTION OF PLANNING AND DEVELOPMENT CONTROL

Unit 1: Pre-Independence Planning

Unit 2: Post-Independence Planning law

Unit 3: Concept of Zoning in Planning

UNIT 1: PRE-INDEPENDENCE PLANNING

CONTENTS

1.0 Introduction

This unit examined the practice of land use /physical planning in the time past, especially prior to modern time. The unit looks at land use planning before and during the colonial

rule as an antecedent to the contemporary physical planning practice and land use planning in the country. The unit provides adequate background information for student to understand the journey towards the present-day approaches to planning and development control of our urban centres.

2.0 Objective

At the end of this unit student should be able to

- Understand pre-colonial planning administration
- Discuss the colonial planning law
- Make substantive remarks on colonial planning and development control.

3.0 Main Content

3.1 Pre-Colonial Planning Administration

Urbanization in Nigeria predates the advent of colonial administration. Extensive development in Nigeria may be considered as a feature of the nineteenth century. However, many parts of the south western and northern Nigeria are known areas of major urban development during the pre-colonial times. In the Hausa-Fulani empire of the northern areas, growth and development of few large cities were noticed. The cities serve as the administrative and religious centres of the large emirates.

Notable cities in that part of the country during the pre-colonial era include: Kano, Zaria, Sokoto, Yauri, Gummel, and Kastina. Various historical accounts on the cities attributed trade and administration as crucial factors to their growth and development.

Urban development in south-western Nigeria began in the eighteenth centuries with the founding and growth of the kingdoms of the Yorubas and the Edos. This was attributed to depopulation of surrounding villages and forced movement of their population into the new towns (Mabogunje, 1968).

To a great extent, Yoruba cities were used for colonization and consequently, like the situation in the Hausa-Fulani empire, trading, marketing and administration were attributed to the growth and development of Yoruba towns. Such towns included Ibadan, Abeokuta, Ogbomoso, Ijaiye, Ilorin, and Iseyin which some missionaries estimated their population at 100,000; 60,000; 50,000 70,000; and 24,000 respectively (Ayeni, 1978).

The administration of these towns then rested with the traditional rulers who ensured that physical and socio-economic developments were in accordance with existing tradition and custom of their subjects. In a nutshell, Native laws and customs were the framework for planning and physical developments at this period. The traditional rulers are the administrative heads and they exercised control of their subject through Native laws and customs.

Self Assessment exercise:

Discuss the framework for planning and physical development in the pre-colonial Nigeria.

3.2 Colonial Planning Law

1863 Town Improvement Ordinance

This ordinance represents the first ever and the origin of urban planning or related legislation in what is now known as Nigeria. It was published in Lagos for Lagos colony by the colonial government. The objective of the Ordinance was to control development and sanitation in Lagos. Enforcement of the Ordinance rested with Health Department of the defunct Lagos City Council. Because the focus of the Ordinance was urban sanitation, many planners regarded it as health regulation rather than an urban and regional planning legislation as such.

1904 Cantonment Proclamation

Although there had been earlier statutes dealing with various aspects of physical planning in Nigeria, particularly in Lagos State (for instance Lagos Improvement Act, 1863; Swamp Improvement Act, 1877,), it was not until 1904 that the first planning legislation sort of emerged. The earlier concern for land use and environmental sanitation was derived from

attempts to protect Europeans from health hazards so prevalent in the 19th and early 20th centuries (Mabogunje, 1968). Thus, in 1902, the governor in southern Nigeria was empowered to declare any area a European Reservation within its own Local Health Board. This was aimed at improving and preserving the health of the Europeans in the reservation. The Lagos Municipal Health Board was set up by the governor under this ordinance in 1908, but the power of the board was extended to cover such items as sales by auction, licensing of spirits (alcohol), markets, dogs and vehicles for the purpose of generating more revenue.

Around 1904 the Cantonment Proclamations and Regulations were established in the northern Nigerian with regulations similar to those of the Health Boards in the south. The regulations gave guidelines on the layout, sanitation and administration of the Government (European) Reservation Areas. The regulations were to be administered by a Magistrate, who was also to fix minimum levies on all houses and issue permits to persons other than government employees to reside in the cantonments. The Magistrate was also charged to see to buildings and open spaces, protection from fire, control of market and so on.

The Cantonment Proclamation of 1904 was concerned with the land use and the need to improve health conditions within the cantonments. The proclamation also provided for improved environmental sanitation outside the European areas. An interesting aspect of the provision was that large cities were to be divided into wards (Ungwa) and the chief of each ward responsible for its sanitation. In addition, the proclamation stated that incineration and latrine pits should be introduced and cemeteries should be established where they do not exist (Oyesiku,1998).

Township Ordinance of 1917

The very first statute on town and country planning in Nigeria was the Township Ordinance No. 29 of 1917. The aim of the Ordinance was to establish the broad principles of municipal responsibility, graduated according to the importance of the community and measure of its ability to accept and discharge satisfactorily independent or quasi-independent powers. The Ordinance not only served as the legal basis of development of towns for most part of the

colonial administration but also gave guidelines for the construction of buildings, control of development and finance of land in the urban areas.

More importantly, the Ordinance attempted a categorization of cities in the country into first, second and third class townships. Lagos was designated a first class township, while Ibadan, Kano, Kaduna along with other fifteen cities were designated second class township and forty-nine others as third class township (see table 1). The designated towns were those given greater attention by the colonial administration more than those not in any of these classes.

Table 1: Township Classification of Cities in Nigeria, 1919

Class	Cities
First Class	Lagos
Second Class	Aba, Abeokuta, Calabar, Enugu, Forcados, Ibadan, Ilorin, Itu, Kaduna, Kano, Lokoja, Minna, Onitsha, Opoko, Port-Harcourt, Sapele, Warri, Zaria
Third Class	Abak, Abakaliki, Abiusi, Ado, Afikpo, Agbor, Ahoada, Ankpa, Arochukwu, Asaba, Awka, Badagri, Baro, Bauchi, Benin, Bida, Bonny, Brass, Burutu, Degema, Eket, Epe, Ife, Ijebu-Ode, Ikom, Ikorodu, Ikot-Ekpene, Ilaro, Jebba, Koko, Kontagora, Kwale, Maiduguri, Obubra, Obudu, Offa, Ogoja, Ogwashi, Okigwe, Omohia, Ondo, Oron, Owerri, Sokoto, Ubiaja, Uyo, Uzuakoli, Zungeru

Source: Mobugunje (1968)

1928 Lagos Town Planning Ordinance

The 1928 ordinance provided for the creation of Lagos Executive Development Board (LEDB) as the town planning agency for Lagos in response to an outbreak of bubonic plaque. The ordinance also made provisions for slum clearance, land reclamation,

residential and industrial estates, and undertake comprehensive land use planning and development in Lagos (Onibokun, 1986). LEDB operated as a federal government planning authority responsible for planning and development of Lagos but without local representation. The Board had no representative from Lagos Town Council unit until in 1946 when the Lagos Town Planning Commission in its recommendations emphasized that the authority most concerned with development of Lagos is Lagos Town Council and it is indispensable that the Lagos Town Council should be fully represented on the Lagos Executive Development Board in order that a close liaison shall be established between the Board and Council and that the Board should have the advantage of the advice of the council on all matters concerned with the development of Lagos. The 1928 Lagos Town Planning Ordinance was in place for eighteen years and served as the basis for the framework of 1946 planning law.

Town and Country Planning Ordinance 1946 (Cap 155)

The most ever significant development in the field of planning legislation in Nigeria in the colonial era was the enactment of the Town and Country Ordinance of 1946. This legislation is cited as Cap. 155 of the 1948 edition of the Laws of Nigeria, with the commencement date of 28th March, 1946. Following the introduction of federal structure, the Ordinance became a regional (later state) laws. For instance it is also Town and Country Planning Law of Western Nigeria – W.R. 1959 Cap. 128, Town and Country Planning (Amendment and Validation Acts) Law, 1975, former Western Nigeria – Gazette No. 2 Vol. 24 of 9th January, 1975 - applicable to Oyo, Ondo, and Ogun States, Town and Country Planning Law of Ogun State (Cap. 127) of 1978; Town and Country Planning Law of Ondo State, 1978; Town and Country Plan Law of Bendel State, 1976 – applicable to Edo and Delta States; Town and Country Planning Law of Eastern Nigeria, 1963 – applicable to Anambra, Imo, Enugu, Abia, Cross River, Rivers and Akwa Ibom States; Town and Country Planning Law applicable to all the Northern States, including Federal Capital, Abuja, and Town and Country Planning Edict of Lagos State in 1985.

It is pertinent to remark that this planning legislation was in force in the country almost 50 years after enactment. This law was also applicable (with minor amendments by some states) to all states of the federation till December of 1992(Oyesiku,1998).

In its preamble, the 1946 Ordinance noted that it was a law to make "provision for the replanning, improvement and development of different parts of the states". Its origin is traceable to the emerging planning problems of the Nigerian cities in the early 1940s. As noted in the Ten Years Plan of Development and Welfare for the country in 1946, approved by the colonial administration, there is scarcely a town in Nigeria that is not in very serious need for replanning and the proper laying out of further extensions. This Ordinance was modeled on the United Kingdom Town and Country planning Act of 1932: an Act which was observed to have outlived its purpose in 1938, when only 2 percent of the country was covered by planning schemes due to administrative procedure for preparing a scheme and obtaining approval was considered time consuming (Oyesiku, 1998)

The Ordinance covered a wide area of planning operations ranging from planning schemes and planning authorities, preparation and approval of schemes and supply of schemes; executions of schemes; acquisition and disposal of land for schemes; compensation and betterment; the legal procedures for the operations of the schemes; and the financial matters for successful implementation of the scheme. The principal focus of the Ordinance was the improvement and control of development by means of planning schemes to be prepared by the planning authorities appointed by the Governor .According to Olawoye (1982) control of development is still by the adoption of an approved scheme, over an area declared a planning area, to which all development within the area must conform.

Self Assessment exercise:

Discuss the Town and Country Planning ordinance of 1946 in Nigeria

3.3 Remarks on Colonial Planning

Physical planning as earlier noted is an art and science of organizing the use of land and the character and the sitting of buildings, services and communication routes so as to secure the maximum practicable degree of economy, convenience, health and beauty. Socially,

successful planning is designed to make people's lives happier because it results in physical environment which is conducive to health, which allows convenient and safe passage from place to place, which facilitates social interaction and which has visual attractiveness and play a catalystic role in national development.

The foundation of urban planning in Nigeria which was laid during the period of British colonial administration was not designed to achieve the above comprehensive objectives of urban planning (Onokerhoraye, 1986). During the period of the British colonial rule, urbanization as a way of life was not deliberately encouraged among Nigerians since one of Britain's major interests in Nigeria as in her other tropical African countries, was to encourage production of raw materials for export, little attention was paid to the existence of the urban centres as socio-economic systems which are expected to provide places of residence for a large proportion of Nigerians.

The pre-colonial urban centres were regarded as the seat of their traditional rulers who are expected to see to the welfare and development of their subjects. On the other hand, the new towns that were developed during colonial period served essentially as administrative centres or places for the collection and distribution of exports and imports. Thus, it can be said that the foundation of a comprehensive approach to urban development planning was not effectively laid by the British colonial administration in Nigeria.

Self Assessment exercise:

Write short notes on colonial land use planning and development control

4.0 Conclusion

We conclude that the physical planning and development control were emphasized during the colonial era through series of ordinances and pronouncement aimed at orderliness, healthy environment as well as replanning, improvement and development in different parts of the country. The nature of planning made for the country were discussed and we equally conclude that physical planning and development control before the independence were tailored more towards the interest of the colonial masters.

5.0 Summary

We examined land use planning in pre-independence era in the territory now called Nigeria. Native laws and customs were the framework of planning and control prior to colonial administration. The colonial masters instituted land use planning and development control through series of ordinances and proclamations. However, the colonial planning and development control were fashioned more in the interest of the colonial masters than the general development of the country. Hence land use planning and development control could not really progressed that much before independence.

6.0. Tutor-Marked Assignment

a. Discuss the importance of native law and customs to land use planning and development control in the pre-colonial era.

b. Compare and contrast Lord Lugard's Township ordinance of 1917 and the Nigeria Town and Country Planning Ordinance of 1946

c. Attempt a critical assessment of Nigeria's Urban land use planning and development control during the colonial era. what is meant by potential gains?

d. Discuss the 1863 Town improvement ordinance in the colonial period.

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UNIT 2: POST-INDEPENDENCE PLANNING LAW

CONTENTS

1.0 Introduction

This unit examines the instrument of land use planning and development control after independence. The modern planning law as well as approaches towards efficient use of land and sitting of building and communication routes so as to secure maximum practicable degree of economy, convenience and beauty are considered. The unit starts with the background to planning in post-independence era before discussing the modern instrument of planning. The approaches to urban land use planning after independence are systematically considered to conclude the unit.

2.0 Objective

At the end of this unit student should be able to

- Understand the antecedent to planning in post –independence era.
- Discuss the modern planning law
- Understand the approaches to urban land use planning in post-independence Nigeria

3.0 Main Content

3.1 Background to Post-Independence Planning

The Nigeria Town and Country Planning Ordinance of 1946 was enacted following the declaration under the Town Planning and Village Reconstruction Programme of the Ten-Year Plan of Development and Welfare for Nigeria that there is scarcely a town in Nigeria that is not in very serious need of replanning and the proper laying out for further extensions. This Act which is an adaptation of the British Town and Country Planning Act of 1932 form the legal basis of contemporary urban planning in different parts of Nigeria, subject of course, to some amendments and variations in different parts of the country.

The scope and powers of the ordinance are very comprehensive and wide ranging; so that both the Federal and State governments can initiate planning schemes under the provisions of the ordinance.

Section 3 states that the principal objects of planning schemes are generally to control the development and use of the land involved, to secure proper sanitation amenity and convenience, to preserve places of natural beauty of interest, and generally to protect existing rural and urban amenities.

In addition, section 13 (1) and parts IV and V add the further objects of coordinating and facilitating the construction of public utility, services, transport, communications and other public services as well as of conserving and developing the resources of the area concerned. The ordinance was comprehensive enough for the nature and pattern of physical development in the country about the period it was promulgated. However, according to

Oyesiku (1998) it became so obsolete in the early 1970s especially when the country witnessed rapid physical development activities as a result of the oil boom. The ordinance nevertheless remains a hallmark in the history of planning in the country and forms the basis of the new planning law.

Self Assessment exercise:

Examine the background to planning in post-independence Nigreia.

3.2 Modern Planning Law

The promulgation of Nigerian land-use decree of March 29th 1978 marks the first legislation on urban land use planning in the country after independence. The decree stipulates that:

(i) any person owning urban land prior to the commencement of the decree where the land has been developed, meaning where the value of the land has been enhanced by the presence of physical improvements such as buildings, water supply system, electricity, roads and drainage structures could notify the Military Government for the issuance of the certificate of occupancy if given satisfactory evidence of legal land holder ship.

(ii) where the land had not been developed before the decree came into effect, its legal hold or owner shall continue to hold one portion of the land not exceeding half a hectare as though then holder has been holding a statutory right of occupancy. He loses all right he formerly had in respect of the excess land, and this excess land shall be taken over by the Military Governor and administered as provided for by the 1978 land use decree.

(iii) Underdeveloped land in urban areas shall not be subdivided or laid out in plots or transferred to any person except with the prior written consent of the Military Governor. Any such transfer without the Military Governor's consent is illegal and ineffectual and any person who participates in it is guilty of an offence punishable under the decree.

The promulgation of the Nigerian Urban and Regional Planning Decree (No. 88) 1992 (herein referred to as 1992 Planning Law) repeals the forty-six year old obsolete and

moribund Town and Country Planning Ordinance of 1946. Decree No. 88 of 1992 has been described as the first ever comprehensive post-independence planning law. The decree came in response to the constantly changing and ever increasing planning problems. The new planning laws came with force on 15th December, 1992. The planning law contains drastic provisions, over-hauling the administration of urban and regional planning in the country.

Self Assessment exercise:

Discuss the influence of land use decree of 1978 in land use planning and control in Nigeria.

3.3 Approaches to Urban Land use Planning

A review of urban land use planning and management in Nigeria suggests three major approaches which have been adopted. These include: Development control, planning schemes and master plan.

Development Control

Development control is designed to regulate the growth of a town in a planned and orderly manner. This is done by stipulating adequate standards for all aspects of planning, private and public building, whether in residential, commercial, industrial, or administrative areas must have sufficient light, ventilation and ways of easy access to them. They must be safe and convenient. They must be sufficiently set back from centre line of road. The height, bulk, area, use, character and appearances of building need to be regulated. One building or site should not interfere with the safety, convenience, privacy and efficiency of another building site or site: Development control also ensures that real estate developers or owners of landed property use their lands and buildings in conformity with approved town planning schemes. If development control is not enforced, landowners and estate developers will build anywhere and anyhow causing the chaotic and disorderly growth of the town concerned.

Planning scheme

The second approach of urban planning in Nigeria relates to the preparations of schemes for sections of towns which are first of all declared planning areas. Each of such schemes contains provisions which are necessary for regulating the development and use of land in the area to which the scheme applies and generally for carrying out any of the installation of basic infrastructure and the preparation and servicing of land for buildings with necessary services and facilities. Some of the planning schemes also provide for the redistribution of land holdings. This approach became significant after the Second World War. It has been applied to sections of the towns which have been acquired by governments for residential or industrial purposes. The approach has largely been inherited from an earlier phase of British town planning in which the focus of attention was mainly on the physical design of the urban environment. It is the piecemeal approach in which ad hoc solutions are sought to pressing urban problems as they arise, rather than taking an overall view of the problems or anticipating all problems at the same time and trying to solve them before they become serious. This approach therefore deals with bottlenecks, attacks problems or ills currently plaguing the city and solving them. For example, such an approach is reflected in development of new residential estates to solve problems of overcrowding of housing shortages; or in the construction of flyovers, overhead bridges, inter-city express and dual carriage ways to solve the problem of traffic jams and traffic congestion. Many Nigerian traditional cities like Ibadan, Benin, Kano, Zaria and Abeokuta have experienced a variety of planning schemes.

Master Plan

Master plan preparation is perhaps the most popular form of urban planning in Nigeria. Master planning represents an approach whereby a planning agency operates in programme thought to attain some objectives with certainty. One major emphasis of the master planning strategy is the general allocation of the city's space or land area to major land uses. In other words, it is a positive, long term land use development planning for a given city or region, and it assigns the various area to types of uses and forms of use – for example: housing,

circulation, utilities, service, facilities, open spaces and general. Module one unit three of this material above provides a general guide for the development of the city and serves as a development/ policy guide to both private and public developers. A large proportion of the major urban centres in Nigeria have master plans but many others do not have. The popularity of master plans among policy makers and planners has encouraged efforts being made to prepare master plan for most settlement of urban status in the country.

Self Assessment exercise:

Discuss the approaches to land use planning and development control in post-independence Nigeria.

4.0 Conclusion

We conclude that some further development in the country after independence led to the modern planning law in the country. The modern planning law therefore came in response to the constantly changing and ever increasing planning problems in the country after independence.

5.0 Summary

This study unit looked into the challenges of colonial planning law and development control that necessitated further law to regulate use of land in post –independence Nigeria. Development control, Planning scheme as well as Master plan were major approaches to urban land use planning after independence.

6.0 Tutor-Marked Assignment

a. Examine the main features of Land use decree of 1978.
b. Outline and discuss the major approaches to urban land use planning in Nigeria to date.
c. Discuss the importance of development control in modern urban centres of Nigeria
d. Outline the contemporary land use problems in Nigerian cities and discuss their planning implications

7.0 References/Further Readings

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UNIT 3: CONCEPT OF ZONING

CONTENTS

1.0 Introduction

This unit discussed Zoning as an instrument of land use planning and development control. Physical development in any community must be guided to ensure harmony and peaceful coexistence. The definition of zoning, characteristics of zoning as well as it's advantages are discussed to enhance student's understanding of the concept as an instrument of development control in urban centres.

2.0 Objective

At the end of this unit student should be able to

- Define the concept zoning
- Understand the characteristics of zoning

- Understand the advantages of zoning

3.0 Main Content

3.1 Definition of Zoning

One of the ways physical development is guided in any particular community, through indirect government policy is zoning. Zoning is what brings developers, landowners, estate professionals, lawyers, and physical planners together as far as physical development is concerned., In many developed societies, the communities are directly or indirectly involved in ensuring that neighbours keep to the guidelines for the physical development of their communities. Zoning is a regulation of uses of land, allowing government through the local planning agencies or council to exercise stronger control over the use of and in a particular community. It uses restriction and development standards in guiding physical development, but often guarantees equal protection and due processes as well as ensuring public health, safety, and welfare (Hinds et aI, 1979).

By way of definition, zoning is the process of classifying land within a government entity into areas and districts, such areas and districts being generally referred to as 'zones', by legislative action and the prescribing and application in each area and district of regulations concerning building and structure design, building and structure placement and uses to which land, buildings structures within such designated areas and districts may be put (Oyesiku, 1998). In a way, zoning tells a landowner what to do with his or her land. To the developers, this is the most irritating and disgusting act: an infringement on personal liberty. But that is what it is. It is more or less an ordinance, or usually an edict or by-law with a strong legal backing. Violators or offenders are liable to fine and even sent to jail if the offence is repeated in some countries.

Self Assessment exercise:

What do you understand by zoning in land use planning?

3.2 Characteristics of Zoning

A zoning ordinance is generally in two parts: a zoning map showing location of each zone, and an accompanying text. On a zoning map are zones (sometimes called districts); each representing a homogeneous land use type; that is grouping similar or compatible land uses into classes. A zone may be generally residential. Within this one, there may be housing types designated as, say duplexes, or storey building (two floors) only or just 3 to 4 bedroom single housing unit of flats (apartment).

A typical zoning map may be of two types: a broad one showing subdivision of land use by types and specifying which block is to be used for what . The second type is the detailed sub-division or layout with specific type of land uses and their plot sizes, showing property lines, streets, rights of way with dimensions. In both , ideally, each land use would be separated by colours for demarcation. They have to be accompanied by designations such as family units alone, low residential density, high residential density, or community services, or light industry, public utilities and so forth.

The zoning text gives a detailed description of each zone or district. Since zoning is more or less an ordinance or by-law, it usually starts with definitions of the terms as used on the map. The reason for a clear definition is to remove any ambiguity, since understanding the terms may (and should) vary from state to state and region to region. As experience has shown, two zoning ordinances or edicts from two local planning authorities cannot be the same. Except of course, that the two agencies share everything in common including terrain, local economy manpower, culture and so on. In addition to the definitions are the lists of zones and the general and zonal provisions referred to as regulations. The zonal provisions are of two types: Specified regulations that state the specific purpose the property within the zone can be used for; development standards that give what the percentage of coverage, set-backs, density, etc. should be. Very often, the content of zoning ordinance is stated very explicitly. However, some are so strongly worded to the minute details that they leave no room for the planning officer to use his discretion to interpret. In

other cases, great latitude is left to enforcement. The fact remains that zoning ordinance text writing is an exercise in legal writing, requiring making references to appropriate existing legislation, development plans, legal definitions, provisions of appeal and the like. Part of the process of zoning is the enforcement, appeal and variances, and amendment. Each of these requires proper understanding of both the map and text content. It is for this reason that the technical aspect of zoning is both the job of physical planners and legal officers.

Zoning is more than just a planning and somewhat legal exercise. It is a political process. As Hinds et al. (1979) note, "if politics is the art of government then the entire process of zoning is in fact political". They contend that zoning is part of the total process of local government, which explains much of the inconsistencies found in the actions of council members. Though the recommendations of the planning professionals are important, the final action is inevitably political in nature. This is not to say that every action in the zoning process is left in the hands of the political officers of the government who may be the administrator of the ordinance or are to be on the board of appeals and variances. There are provisions made in any zoning ordinance for appeals, and members of the council too are usually from the community. But considering the fact that planning itself cannot be divulged from political process, this may not be surprising.

Self Assessment exercise:

Discuss the major characteristics of zoning.

3.3 Advantages of Zoning

One of the most important advantages of zoning is that without it no property owner can complain about encroachment on his or her property. Without zoning no specific use might have been designated for a property. Exercise of individual right as to injury likely to be suffered as a result of encroachment would simply be subject to the general common private and property law. The fact is that all over the world, many people do not want

control, willingly. The case in many developing countries is very pertinent. In many cities in these countries continuous physical planning of cities seems to be absent. One may jump into the conclusion that the cities never experience firm control over land uses. This perhaps explains, in part, why these cities look unplanned.

Self Assessment exercise:

Discuss the advantages of zoning in land use planning

4.0 Conclusion

This unit concludes that zoning as an instrument of development control is important to keep compatible land uses together and separate incompatible ones. Without proper zoning development may be haphazard in nature and constitute threat to human well being. The characteristics and advantages of zoning justifies its application in any development area for orderliness and conducive environment to living and social.

5.0 Summary

This study unit looked into the concept of zoning, its characteristics and advantages. The unit also imagines the development pattern of an area without zoning. It is emphasized that the importance of zoning in physical planning and control cannot be over emphasized.

6.0 Tutor-Marked Assignment

a. Explain what you understand by zoning in physical planning

b. Zoning is more than just a planning and somewhat legal exercise –Discuss.

c. What are the major advantages of zoning in physical planning

d. Discuss the characteristics of planning

e. Critically examine the concept of zoning as an instrument of development control.

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MODULE FOUR

TRANSPORTATION PLANNING AND PROCESS

Unit 1: Transport in Society

Unit 2: Transport Planning

Unit 3: Transport Planning Process

UNIT 1: TRANSPORT IN SOCIETY

CONTENTS

1.0 Introduction

This unit will look at transport as an important land use that connects all other land uses together and determine the level of efficiency of their relationship. As an integral aspect of

overall physical planning, the importance of transport planning cannot be over-emphasized. Transport is a catalyst to socio-economic development, therefore its planning and development influence the degree of accessibility and efficiency of other land uses. The unit examines definition of transport, modes of transport as well as the role of transport in society. These were done to expose students to reality of transport as a crucial and important land use deserving adequate planning.

2.0 Objective

At the end of this unit student should be able to

- Explain the meaning of transport
- Understand the modes of transport
- Discuss the role of transport in society

3.0 Main Content

3.1 Definition of Transport

Transport is the movement or conveyance of people, goods, ideas and information from one place to another. It is a very important system in a society, since not all areas are equally endowed or gifted by nature, hence the need for interaction through transport. Adeniji (1985) defined transport as a measure of relationship between areas, while Onakomaiya (1980) and Solanke (2014) defined it as the movement of people, goods and facilities. Adeniji (1985), Solanke (2015a) also stated that it is the essential element in the function of a society which influences the creation of essential economic activities, such as production of goods and services, residences, leisure and social facilities. In short transport influences the quality of life in the society as there is hardly any aspect of development which does not involve transport. There is always the need to collect, assemble, move and transfer and distribute people and goods/ service. Transport serves as catalyst for other form of development.

The basic objective of transport according to (Adeniji 2000) is safe arrival of goods and people at the given destination and in good condition too. Transport moves people from where they are to where they will prefer to be; and moves goods to where their relative value and importance are greater. It is very important that passengers and goods get to their destinations safely and without damage. Safe arrival is the product of the transport industry.

In a real sense, transport can be described as life. It nurtures life and keeps life going. Transport plays a significant role in the efficient running of modern societies. It is also the engine of growth and development of societies (Badejo, 2011, Solanke 2015b) Furthermore, the prosperity and affluence associated with some nations worldwide is directly correlated with the level of their transport infrastructure development (Badejo, 2014, Solanke 2015b). Wilfred Owen (1968), a renowned transport analyst, once concluded that immobility perpetuates poverty, while mobility makes possible various developments including transport itself. He concluded that transport's pervasive effect affects every human being in the course of his or her daily activities and that it is difficult to conceive of a situation where transport does not play a significant role in the life of any given individual or society. As Mumby (1968) rightly stated, there is no escape from transport. This is more so because the daily rhythm of activities whether in the technologically advanced countries or in the most remote developing ones, is geared towards transport. Lord Lugard in 1914 emphasized only one way to Nigeria's social, economic, political and even military development and that is transport.

Self Assessment exercise:

There is no escape from Transport--Discuss

3.2 Modes of Transport

The major modes of transport world-wide include: Roads, Railways, Water, Air and Pipelines.

- Roads

These are found in virtually all countries of the world. Roads vary in quality from one part of the world or locality to another. Thus we can talk of foot-paths suitable for non-mechanized use as well as major high-ways designed for fast moving traffic. In some localities in developing countries, some areas are inaccessible to modern modes of transport. Consequently, they depend on primitive modes of transport. In Nigeria, two traditional means of transport are still common in many localities. The first is **Human Porterage** which is still the major means of land transport in many rural areas in the southern part of the country. In the tsetsefly free zone of Nigeria to the North, the transport network is based largely on the use of animal transport comprising donkeys, horses, oxes, and camels.

Road transport has some advantages over others; there is flexibility of service and directness since many routes and destinations are possible within a small area. Furthermore, it is cheaper, more rapid and carries a wide range of goods over a short distance. Road transport offers maximum access along their line-sides compared with others such as railways and air routes.

The disadvantages of road transport however include the constant maintenance of roads and vehicles, low carrying capacity, slowness in long distances and its detriment to beauty of the rural environment.

- Railways

Until the emergence of railways as a transport mode in the 1830's man could hardly travel faster than a horse could gallop. Railways as a transport mode appeared during Britain's Industrial Revolution and were later constructed throughout the developed world.

The advantages of railway include:

a) The provision of fast and reliable service since congestion rarely occur;
b) The carrying of heavy and bulky goods as well as large quantities of cargo;

c) Provides speedy, cheap, comfortable and safe passenger transport over long distances and it provides a relatively little air pollution.

On the other hand, railways have some constraints such as high construction, maintenance and operating costs, high costs over short distances, inflexible service especially the transshipment of cargo, prevalence of indirect routes since lines are influenced by relief hence it tends to be slow over areas of rough topography, and failure to accommodate awkward cargo which do not fit both train and routes dimension.

- Water transport

This mode of transport is undertaken along inland rivers and canals or across the oceans. It is one of the earliest forms of transport in different parts of the world.

Among the advantages of water transport is:

Low running costs over long distance, capacity for heavy and bulky cargoes, cause little congestion along its routes and there is generally little pollution although oil discharge from tankers cause problems. The disadvantages of water transport include; its very slow movement which makes it unsuitable for perishable or urgent cargoes. It is unsuitable for short journeys and the cost of constructing canal is high where natural water is not available.

- Air transport

Air transport has been one of the most remarkable modern means of transport in the 20th century. In most parts of the world, it is used extensively both for passengers and freight. The advantages of air transport include:

Its fastness and efficiency especially for long distance passenger travels; suitable for high quality, expensive and perishable goods for which speed is essential. It can reach inaccessible areas which other transport modes cannot easily penetrate and there is some flexibility in its route compared with roads and railways thus, avoiding possible congestion.

Air transport like others has some constraints among which are: its expensiveness in term of construction, maintenance and running costs, it is unreliable in areas where weather is unstable large amount of land is required for the construction of airports.

- Pipelines

Initially, pipelines were originally used to carry water and to dispose liquid wastes; they are now used to transport a variety of commodities such as oil, natural gas, milk, chemical and even some solids like coal is a liquefied form known as slurry. However, oil and natural gas provide the major commodities carried by pipelines in most parts of the world. Its advantages are as follows:

- It is fast, safe and dependable
- It has low cost over long distances since running cost are low
- It causes no air pollution

The disadvantages are:

- It is inflexible
- It has high cost of installation
- It is easily damaged
- It carries only a limited range of goods specifically liquid products.

Telecommunication:

This involves the use of telephone, telegraph, radio and television etc.

Self Assessment exercise:

Discuss the modes of transport with emphasis on their merits and shortcomings.

3.3 Role of Transport

The role of transport to society is obvious to anyone thinking about low people travel to fulfill their needs or how they are provided with their goods and services. In many

countries, work place and living accommodation are no longer in close proximity to each other. People can now choose to live long distances from their place of work and travel everyday using public passenger transport. They can live in places far removed from the city, factory or office, in suburban or rural areas and still work effectively.

Transport permeates the whole of civilized life, like the arteries and viens in the human body, transport services take people to places where they want to go and deliver goods to places where people require them.

The role of transport in society includes the following:

1. **It enhances trade and commerce**

The earth is endowed with abundant natural resources, but it is not homogenous; that is there are differences between localities. The climates, soil and fertility are non-uniform even within fairly small nations or even more so on a world scale. Because of these variations in natural habitat there are variations in potentialities of places and one area can produce a surplus which can then be traded with another area. Transport is essential to enable this trading process to take place.

Some areas of the world have the good fortune to have deposits of desirable raw materials like crude oil, iron ore and coal. Other places, with almost no local resources of these commodities, have to import in large quantities to feed their industrial deposit. Transport is the means of balancing the source with the demand and use.

Raw materials are carried to factories and finished goods to consumers through transport.

2. **It provides link with the market place**

Industrial companies now site their plants where production is most efficient and optimize on size to fit the cost/market equation. This is possible through modern transport methods and infrastructure.

3. **It promotes social interaction**

People naturally congregate in communities with very few people wishing to be isolated. Communities need to contact other communities to establish social relationships and spread of thoughts and ideas. Transport is necessary for the spread of community relationships.

4. **It makes possible national cohesion**

Efficient transport links are vital for state security and identity. A nation is held together by the way in which separate communities are linked to a common purpose.

The political process and national identity are enhanced by the ability of policy makers and leaders to travel to different parts of a country.

5. **The military requires efficient transport system to move men and equipment quickly to counter an invasion or to put down internal dissent.**

In a nutshell, transport is required to enhance trade, hold nations together and enable people to improve the quality of their lives. It is instrumental in the spread of development and the mixing of cultures.

From the above, transport plays a crucial role in the overall development and spatial interaction. It is something which affects everybody in the course of his daily activities. According to Filani (1988) one of the major pre-requisites of efficient functioning of a city is the facility for the movement of people, goods and service quickly and economically. Transport makes mobility possible and as Wilfred Owen stated 'immobility perpetuates poverty'. Also according to Mumby (1968) there is no escape from transport. This is more so because the daily rhythm of life is geared towards transport whether in technologically advanced countries or in the most developing areas.

Indeed, the need for transport during the colonial era was so apparent that Luggard (1922) remarked "the development of Africa can be summed up in one word-Transport".

Transport has crucial role in promotion of national unity and socio-economic integration, stimulating a sense of on-ness and mutual understanding in a culturally diversified society.

Self Assessment exercise:

Discuss the role of transport in the society.

4.0 Conclusion

Transport constitutes an important land use necessary for the efficiency of other land uses in urban centre. Different modes of transport combine to perform several roles in the society. Prominent among which is the movement of passengers and goods from one point to the other, thereby providing the needed catalyst for socio-economic development.

5.0 Summary

Transport plays an important role in the overall level development and spatial interaction. It is one of the major pre-requisites of efficient functioning of city. There are different modes of transport: Road, Rail, Water, Air, Pipeline and Telecommunication. All these perform numerous roles in the society. Indeed, there is no escape from transport.

Tutor-Marked Assignment

a. What do you understand by transport?
b. Discuss the roles of transport in the society.
c. Identify and discuss the modes of transport
d. Why is transport land use so important to other land uses in any urban centre?

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UNIT 2: TRANSPORT PLANNING

CONTENTS

1.0 Introduction

Transport planning is desirable because transport is a pre-requisite for efficient functioning of urban land use. Transport provides facility for the movement of people, goods and services. In this unit therefore, transport planning is examined. The definition of transport planning, transport land use relationship as well as the importance of transport planning is considered to enhance student ability to comprehend the subject matter.

2.0 Objective

At the end of this unit student should be able to

- Understand the meaning of transport planning

- Discuss transport land use relationship
- Explain the importance of transport planning

3.0 Main Content

3.1 Definition of Transport Planning

Transport planning can be described as the art and science of providing and managing transportation facilities in a manner that ensure an efficient movement of commuters and freight within a given spatial entity. It is also a science that seeks to study the problems that arise in providing transportation facilities in an urban, regional or national setting and to prepare a systematic basis for planning such facilities (Kadiyali, 2002). Transportation itself is a process that involves the movement of commuters, goods and services from a given point of origin to a specific destination.

Transportation occupies a high place in modern life. Advancement in all spheres of life has been to a large extent influenced by transportation. Since the developed countries, where transport planning has evolved are mainly urban oriented, the emphasis is more on urban transport planning. However, the principles of urban transport planning can be applied to regional or national transport planning as well with due changes wherever called for.

Human activities take place in adapted spaces linked by communication through channels. As earlier noted town and country planning is a science that deals with the study of the urban or country "system" covering the interacting activities using adapted spaces linked by communications through channels. Transport planning is an important part of overall town and country planning since it deals with the transport network which is an important channel of a communication.

Though motor vehicles have revolutionized our life and brought comfort, pleasure and convenience, they have created problems of congestion, lack of safety and degeneration of the environment. The situation has already become unmanageable in many towns and cities. To understand the nature of these problems and formulate proposals for the safe

efficient movement of goods and people from one place to another is the subject of transport planning.

Self Assessment exercise:

What is transport planning?

3.2 Transport Land use Relationship

In transport system, traffic especially in urban centre has been described as a function of land use.

Various kinds of activities based on the land called land use "generated'' different amounts and kinds of traffic. Although such measures as:

- Regulation and control of traffic and
- Provision and improvement of physical channels of movement were effective in dealing with urban traffic; the most basic level of action for a long run solution of the traffic problems is the planning, guidance and control in the pattern of land use. In towns, traffic takes place because of buildings and in fact, all movements in a town have an origin and destination in a building. The pattern traced by traffic is thus closely related to the manner in which buildings are arranged. Commuter flows are closely dependent upon the location and size of the work places and of the home areas. School traffic is governed by the location of the schools and the home areas.

Just as transport is a function of land-use, the reciprocal statements that land use is a function of transports is also true. As new systems of transport are built, the land-use pattern that follows has a close relation to the accessibility that has been made possible.

The above interdependence is the key-note of modern transport planning. The early Detroit Area Transportation study demonstrated the empirical validity of the proposition that transport was a function of land use. The Penn-Jersey Transportation study tested the reciprocal proposition that land use was a function of transportation (Kadiyali, 2002). These

concepts have by now been used in a number of important transportation studies in many of the principal towns and cities all over the world.

Self Assessment exercise:

Discuss the relationship between transport and land use in an urban centre.

3.3 Importance of Transport Planning

As earlier stated, transport planning is the art and science of providing and managing transport facilities in a manner that ensures an efficient movement of commuters and freight within a given spatial entity. Transport planning seeks to study the problems that arise in the course of provision of transport facilities and provide systematic basis for improvement. The modern society is very complex in terms of development. The peace and stability of the world depend on the use of social interaction and trade between places. Modern society functions effectively because of the transport links. Considerations of the foregoing reveals clearly that different transport modes: roads, rail, air, water, and pipelines exist to ensure adequate transport system. Regardless of mode, transport has become more complex to operate and administer both technologically and financially. It is widely recognized that the management and operation of the transport system requires proper planning by highly qualified skill to tackle and solve the problems presented by such complexities.

Transport plays a key role in the economic and social development of any nation. In order to be effective and prosperous, virtually every country in the world places a lot of emphasis on the planning and development of its transport system.

A well planned, functioning and integrated transport system amongst other things:

i. Stimulates national development and enhances the quality of life for all.
ii. Allows markets to operate by enabling the seamless movement of goods and people
iii. Provides vital links between spatially separated facilities and enables social contact and interaction

iv. Provide access to employment, health, education and services
v. Alleviates regional inequality and fosters necessary integration
vi. Increases access to markets and links (local, regional, national and international markets)
vii. Promotes economic development by increasing access to labour and physical resources, thus facilitating the realization of the country's comparative advantages

Self Assessment exercise:

Examine the importance of transport planning in a chosen urban centre.

4.0 Conclusion

The position of transport in modern life is very high. Advancement in all spheres of life in any spatial entity has been to a large extent influenced by transportation. The importance of transport planning is clearly emphasized. The unit emphasized the strong link between transport facility and land use and conclude that the essentiality of transport facility and services to other urban land use is non negotiable.

5.0 Summary

Transport planning seeks to provide and manage transport facilities and services towards efficient movement of people and freight within a given spatial entity. Transport and land use are so interrelate such that the performance of one clearly affects the other. Transport indeed is an important land use itself and so critical to performance, and convenience of other land uses. The importance of transport planning in the interest of general land use planning therefore, can not be overemphasized.

6.0 Tutor-Marked Assignment

a. Explain the meaning and justify the need for transport planning.
b. Critically examine the relationship between land use and transportation.
c. List and discuss the benefits of adequate planning of transportation in a country

d. Examine how transport planning can facilitate the realization of country's comparative advantage

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UNIT 3: TRANSPORT PLANNING PROCESS

CONTENTS

1.0 Introduction

There is no escape from transport. Transport affects everybody in the society. Transport planning requires inputs and views of all stakeholders. Every component of the society must be carried along. Every land use must be recognized. Transport planning must be carried out with people rather than for the people. In order to ensure the participation of all stakeholders, transport planning follow certain process which are discussed in this unit. The vision of transport planning is emphasized prior to discussion of cyclical and systematic processes of transport planning.

2.0 Objective

At the end of this unit student should be able to

- Understand the vision of transport planning.
- Explain the cyclical planning process in transport
- Discuss the systematic planning process in transport

3.0 Main Content

3.1 Vision of Transport Planning

The vision of transport planning is that transport infrastructure, services and regulatory framework is an area unit generally;

1. Serve the interest of residents, workers, visitors and businesses
2. Support socio-economic development in a sustainable manner

In the light of the laudable vision of a transport planning, the objectives are to provide strategies towards;

1. Mobility for the residents, workers, and business people in a sustainable manner
2. Accessibility to landmarks/socio-economic land uses and facilities in an area
3. Traffic management measures to ensure safety of lives and properties.

In a nutshell, transport planning by its vision and objectives seeks to understand present challenges of transport facilities, services and management and provides efficient, adequate and sustainable strategies to overcome the challenges to the minimum barest level. The strategy of planning in transport involves a process and made up of interrelated steps fashioned after the conventional physical planning process. The details of this is discussed is the next topic.

Self Assessment exercise:

Discuss the vision and objectives of transport planning

3.2 Cyclical Planning Process

The transportation planning process is a cyclical process and is made up of a number of interrelated steps. It was originally fashioned after the conventional physical planning process i.e survey-analysis-plan enunciated by Patrick Geddes. Geddes recognized the need for problem diagnosis before plan making and he therefore advocated that physical plans must always emerge from the diagnostic process (Lee,1973). According to kadiyali (2002), the transportation planning process is made up of five stages. These are; (i) Survey and analysis of existing conditions, (ii) forecast and analysis of future conditions and plan synthesis, (iii) evaluation, (iv) plan adoption and implementation, and (v) monitoring. These stages could be discussed as follows:

(a). ***Survey and Analysis:*** At this stage, the survey area is properly delineated and defined, and subdivided into smaller zones, called traffic analysis zones. The subdivision is done using cordon lines. At this stage too, the goals are formulated. The goals usually comprise some of these issues; minimum disruption of the general environment; minimum demolition of housing; re-vitalization of public transport; and the removal of through traffic from urban centres and residential areas.

Analysis of existing conditions usually involves the collection of transport data on such broad issues as; origins and destinations of journey by home-interviews, road side interviews, registration number plate survey, post card survey etc; data on movement of goods vehicles, as well as data on movement of public transport modes.

Analysis could only be done when data are available. Data on existing transport facilities can come from;

(i). Inventory of urban streets and roads with emphasis on volume of traffic, dimensions, type and condition of roads; information on land use type (residential, industrial, commercial, recreational etc); household structures including family income, car-ownership family size and sex,

(ii) Studies on travel time by different modes

(iii) Inventory of public transport buses- their operating speeds, passengers carried, etc

(iv) Accident data

Mathematical models are then built to relate the present travel pattern to land-use and other socio-economic characteristics of the household. Trip generation, Trip distribution, Modal split and Trip-assignment models are considered at this stage.

(b) ***Forecast and Plan synthesis;*** transport plans like most other physical plans are long range in scope, and involve planning for twenty (20) to twenty-five (25) years ahead. It involves predictions of travel pattern, future land use pattern, future economic activity, and future population. It is important to synthesize and harmonize these predictions, and relate them to future state of car ownership, land use-transport relationship, trip generation and distribution, as well as the mode-choice behavior of commuters. The future land-use activity, future income levels, family size, car-ownership rates, employment, population and other economic activity factors serve as inputs to trip generation models and the output is the future trip generation rate.

(c**) Evaluation**: In transportation planning, a number of alternative plans are usually prepared to meet a set of goals and objectives. These plans are evaluated in order to select the best, that is, the one that satisfies or fulfils the stated objectives and goals. The cost-benefit technique is often employed to evaluate the alternative plans in economic terms. Sometimes at the stage of evaluation, it might become necessary to revise the plans and go back to the initial stage of design to evolve further alternatives.

(d**). Plan Adoption and Implementation:** the best and the chosen alternative plan that ultimately scales through the evaluation process is eventually selected for adoption and implementation. The necessary organization for handling the project is set up and the work is executed.

(e**) Monitoring;** since transportation planning is a dynamic process, it is not always possible to have a complete finality about the plan. Sometimes, the preferences of the people might change, or the level of technology can change. The goals and objectives that are relevant today might no longer be relevant in future. For these reasons, there is need for periodic surveys on the trends in travel patterns, journey times and other relevant factors. If necessary, the plan could be re-adjusted.

In the transportation planning process, it is important to consult the people, and involve them in the decision making process, especially in the formulation of goals and objectives. In the words of kadiyali (2002), it is desirable that a rapport with the community is established right from the start so that there will be a minimum of controversies and public criticism

Self Assessment exercise:

Discuss the cyclical planning process in transport

3.3 Systematic Planning Process

It is important to note that the transportation planning process emerged from the systemic view of town planning. The systemic view of planning itself was developed from the concept of systems analysis. Systems analysis was developed in an attempt to provide policy advice on the basis of systematic analytical studies, and it has been widely applied in scientific, industrial and military fields.

According to Catanese and synder (1988), the systemic planning process is made up of seven procedural steps as stated below;

(a). Definition and classification of current and future problems, and inter-relationships among them

(b). Prediction of future conditions arising from identifiable problems

(c). Identification of parameters, boundary conditions or constraints, which determine the range of possible solutions to the totality of problems

(d). Determination of goals and objectives at varying levels

(e). Formulation of alternative policies.

(f). Evaluation of qualitative and quantitative costs and effectiveness, and simulation of alternatives in the environment of the urban system, in order to understand overall performance, as well as by-products and spill over effects.

(g). Recommendation of selected policy and implementation

This systemic planning framework is in close agreement with the planning meta procedure. The framework follows the following sequential steps;

a. Recognition and description of the system

b. Formulation of criteria for testing the system

c Modeling the system

d. Testing the system model against the criteria

e. Choosing a projected future state from the model

f. Testing the projected future state against the criteria

g. Controlling the system's behavior towards the desired future state.

There are various formulations of the systemic planning process. These various frameworks have been synthesized and summarized by Lee (1973). According to him, the abridged planning framework is made up of the following steps:

a. System description and problem definition

b. Solution generation and analysis

c. Evaluation and Choice

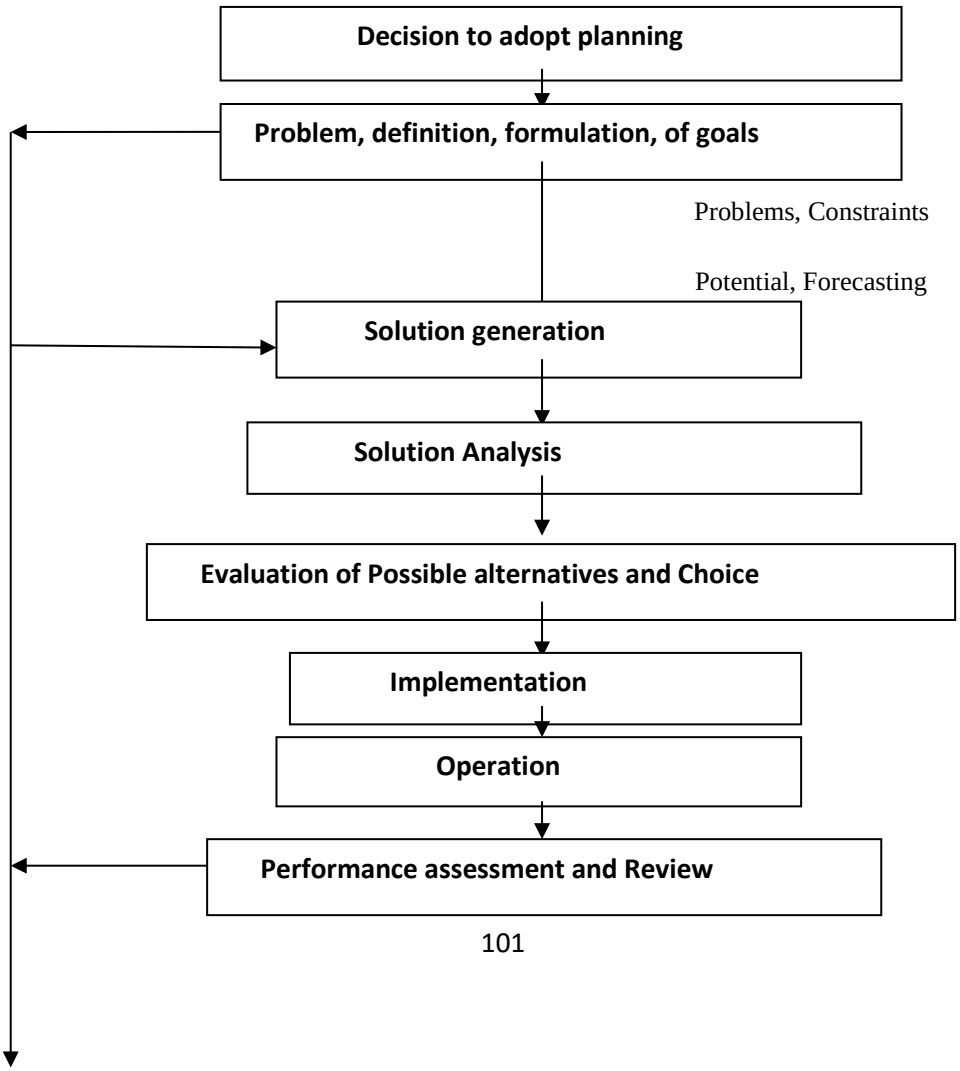
d. Implementation and monitoring

Current approaches to urban transportation planning are designed after the systemic planning process.

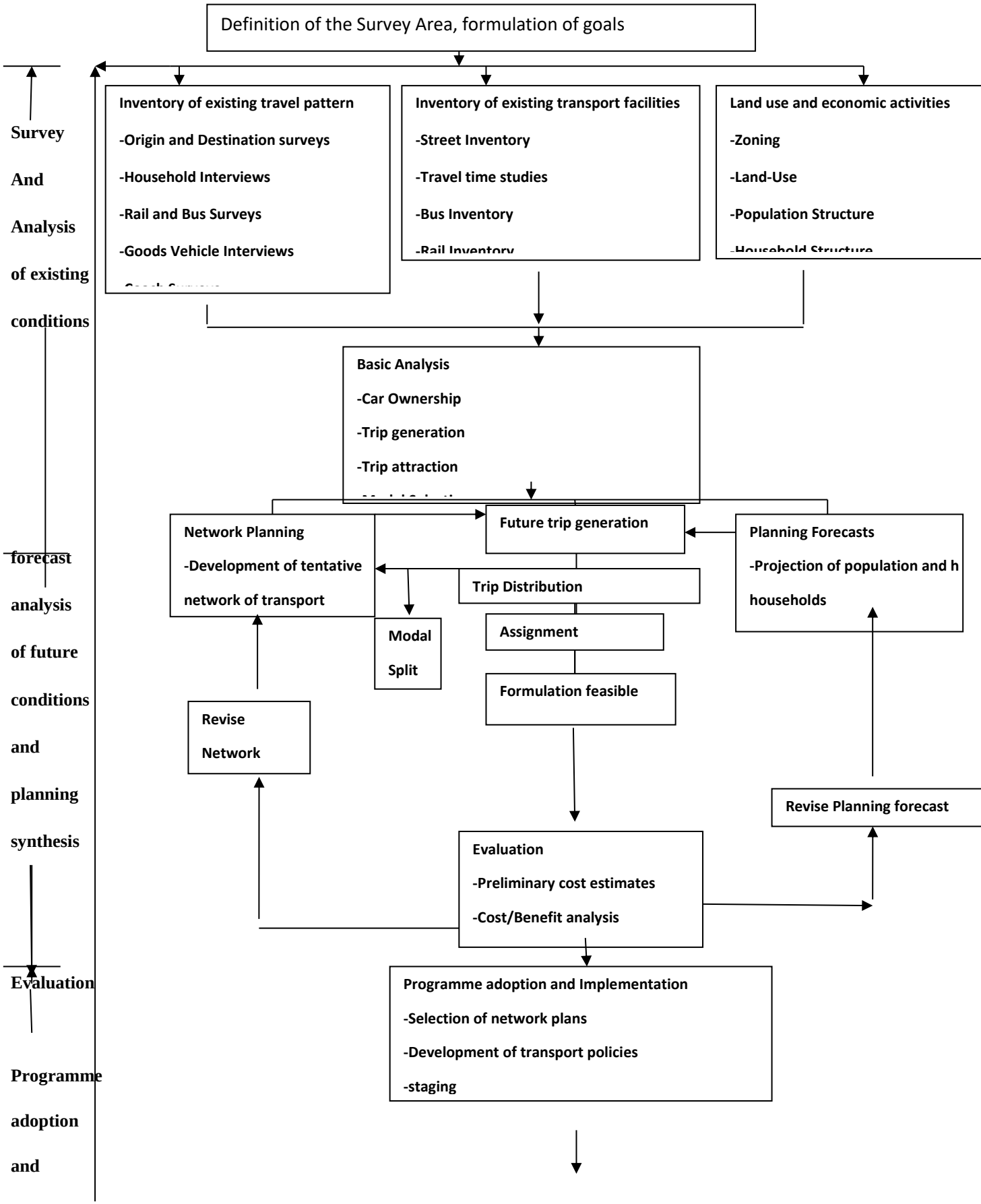
In the recent past, a new activity known as Operation Research has taken shape and is finding interesting applications in diverse fields. Transport Planning is one field where this approach has already been tried and found extremely useful. Operations Research is mainly concerned with optimizing the performance of a 'system'. A system is defined as a complex whole, an organized whole, consisting of set of connected things or parts, whose components and interconnections are vital to the operation of the system.

The processes involved in the systems approach in transport planning can be represented by Fig. 3.0 below;

Systems Approach to Transport Planning



The broad sequence of operations in the systems approach to transport planning has already been outlined. It is established that transport planning processes are in stages which are interconnected. Fig. 3 gives the greater detail of the various stages in the transport planning process through the flow diagram indicating the various stages and how they are interconnected. In a nutshell, transport planning process is a complex whole organised whole, consisting of set of connected parts whose components and interconnections are vital to the working or operation of the system.


Definition of the Survey Area, formulation of goals
Survey And Analysis of existing conditions
Inventory of existing travel pattern
-Origin and Destination surveys
-Household Interviews
-Rail and Bus Surveys
-Goods Vehicle Interviews
Inventory of existing transport facilities
-Street Inventory
-Travel time studies
-Bus Inventory
Land use and economic activities
-Zoning
-Land-Use
-Population Structure
Basic Analysis
-Car Ownership
-Trip generation
-Trip attraction
forecast analysis of future conditions and planning synthesis
Network Planning
-Development of tentative network of transport
Future trip generation
Planning Forecasts
-Projection of population and h households
Trip Distribution
Modal Split
Assignment
Formulation feasible
Revise Network
Revise Planning forecast
Evaluation
-Preliminary cost estimates
-Cost/Benefit analysis
Evaluation
Programme adoption and
Programme adoption and Implementation
-Selection of network plans
-Development of transport policies
-staging

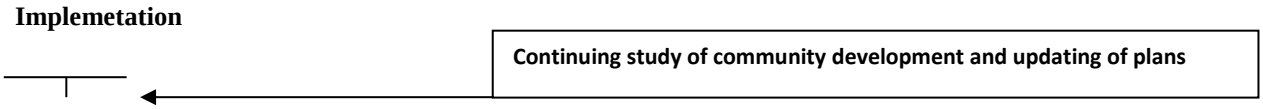


Figure 3: Stages in the Transport Planning Process Source:Kadiyali (2002)

Since the economy of a region and its transport are closely related, it is possible to establish econometric models relating the

transport indicators and economic indicators of the following type

$$\text{Log}_e T = A_0 + A_i \text{Log}_e GNP$$

Where:T = Transport indicator, such as number of cars; for example

GNP = Gross National Product

A_0 = Regression constant

A_1 = Regression coefficient, also known as Elasticity coefficient.

Knowing the expected rate of growth in GNP, the expected rate of growth of T can be obtained by multiplying it by the Elasticity coefficient, A_l.

The predicted growth in land-use pattern such as residential, industrial, commercial recreational and open spaces can be determined by formulating suitable land-use allocation models. Considerations such as the policy of the administration towards urban renewal, zoning regulations, cost and availability of land etc. should be employed in building such models.

The future land-use activity arrangement and information concerning future income levels, family size, car ownership rates, employment, population and other economic activity factors are then fed as inputs to the previously formulated trip generation model. The output will be the future trip generation rates. The other stages such as trip distribution, assignment and modal split are gone through by using the future predicted parameters governing travel

pattern and the respective models formulated for the base year. The data are fitted into a tentative network planned for the horizon year.

The output from the above stages yields the flow on each link of the network, and speed and level of service afforded by the planned facility.

Self Assessment exercise:

Explain the systemic planning process in transport.

4.0 Conclusion

Transportation planning is a dynamic process, there is no finality about the plan. Preferences of the people do change, and the level of technology also changes. The relevant goals and objectives also change with time. For these reasons, it is important to consult people and involve them in the decision making process in transport. As earlier noted earlier every stakeholder in the sector should be properly considered from the beginning to the end of the process so that the controversies and criticism by the public can be reduced to barest minimum.

5.0 Summary

The transport planning process starts with the decision to adopt planning as a tool for achieving certain desired goals and objectives. After the goals and objectives are defined, solutions are generated, taking due cognizance of problems, constraints, potentials and forecasting. These solutions are evaluated after thorough analysis. The best amongst them is chosen for implementation. After implementation, the system is studied in operation and its performance assessed. Based on this assessment it may be necessary to go back to certain stages of planning and repeat the sequence.

6.0 Tutor-Marked Assignment

a. The vision of Transport planning centres around Mobility and Accessibility, Discuss.

b. Explain the view that there is no finality in the process of transport planning but rather cyclical

c. Discuss the systemic approach to transport planning process.

d. Planning with people rather than for the people makes a desirable process in transport planning. Discuss

e. In transport planning, scientific diagnosis is advocated prior to planning options Discuss

7.0 References/Further Readings

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