# Kotebe University of Education

## College of SS Education

## Department of Geography & Env'tal Education

# Urban and Regional planning (GeED 3361)

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# Course Description

The focus of this course is to provide students with necessary knowledge in understanding and analyzing **urban and regional problems**. Chapter one deals with the concept of urban and regional planning, and chapter two focuses on the economic and spatial theories in regional growth and planning. Chapter three addresses regional growth in long-run. Chapter four illustrates the issues in urban & regional planning while chapter five concerned with techniques and models in regional analysis and regional planning and their applications.

## Course Objectives

At the end of the course students will be able to:

- Define the basic concepts of urban and regional planning
- Identify inter and intra-regional planning
- Discuss spatial theories in regional growth and planning
- Elaborate social and Environmental Issues in Urban and Regional Planning
- Identify the techniques and models employed in urban and regional analysis and planning
- Discusses urban and regional problems and explain the various strategy of development.

## Course Contents

# 1. Introduction to Urban &Regional Planning

**1.1.** Concept of urban and regional planning

1.2.The Brief History of regional planning

1.3. The need for urban & regional planning

1.4. Spatial levels and dimensions of planning

1.5. Approaches of urban &regional planning

1.6. Process of urban and regional planning

1.7. 'Inter' and 'Intra' regional Planning

## 2. Economic and Spatial Theories in Regional Growth and Planning

- Concept of Economic Base
- Regional change in the short-run
- Inter- regional trade multiplier
- Regional Input-Output Analysis
- A Compromise Approach

## 3. Regional Growth-Long Run

- Aggregate Growth Models
- A Disaggregated Approach
- Regional Growth: Convergence or Divergence
- Social and Political Factors in Regional Growth and Development

## 4. Issues in Urban and Regional Planning

Social issues

Environmental Issues

Planning for basic urban services

Transportation planning

## 5. Techniques and Models in Regional planning

Application of techniques and models in Regional planning

Intra- regional planning analysis

The location of industry : theory & practice

The spatial structure of regions

Central place theory

5.5. The Growth Pole Theory

The Transport Factor in urban and regional Planning

Models of Spatial Interaction

**Teaching & Learning Methods**

lectures, presentation, peer teaching, demonstration, project work, group discussion, Classroom Exercise.

**Assessment and Evaluation**

Group assignment ----------25%

Mid exam..... 25%

Final Exam----------50%

**References**

Arthur Getis & etal 2000; Introduction to Geography. seventh edition.

Carter, Harold (1995). The study of urban Geography London: Edward Arnold. (1982). The study of urban Geography. London: Edward Arnold

# Chapter One: Urban and Regional Planning

## 1. Introduction

### 1.1. What is Urban?

Urban: is an area **with concentrated population, infrastructure, and non-agricultural economic activities.**

**Examples of urban forms are towns, cities or mega cities…**

- *Cont'd urban*

**Urban** refers to areas that are characterized by:

- **High population density** – many people living close together.
- **Built environment** – presence of buildings, roads, and infrastructure.
- **Economic activities** – predominantly non-agricultural.
- **Social services** – availability of schools, hospitals, transport, and utilities.
- **Cultural and administrative functions** – often centers of governance, culture, and commerce.

- *Cont'd urban*

Threshold population size to be urban for some selected countries

Japan 50,000

Nigeria 2000

India 5000

Ethiopia 2000

Sweden 200

Denmark 200

# Cont'd urban

| Settlement Type | Population Size (approx.) | Key Characteristics / Functions |
|---|---|---|
| Hamlet | < 100–200 | Small cluster of houses; minimal services; primarily agricultural. |
| Village | 200–2,000 | Basic services (primary school, small shops); local community; agricultural-based economy. |
| Town | 2,000–100,000 | Markets, schools, small industries; provides services to surrounding villages. |
| City | 100,000–1,000,000 | Diverse services; commercial, administrative, and industrial functions; regional influence. |
| Mega City | > 10,000,000 | Extremely large population; global or national importance; complex economy, advanced infrastructure, and social challenges. E.g From Africa Cairo. Legos and Kinshasa |
| Conurbation | Multiple cities/towns linked | Continuous urban area formed by merging neighboring cities/towns; shared infrastructure; regional economic and social integration. |
| Metropolitan area | Multiple cities/ conurbations linked | Large, densely populated urban area; multiple cities/towns may be included; major economic, cultural, and administrative hub; extensive infrastructure. |

- On the other hand urbanization is a concept referring to the process of concentration of people in towns and cities. It's the creation of non-rural settlement.
- Urbanism: **Urbanism** refers to the **way of life, social patterns, and cultural characteristics that develop in urban areas**
- It is **not just the physical city**, but the **urban lifestyle and social behavior** associated with city life.

- **Class work**
  - **Please, students , list down five urban behaviors or life styles which are non existent in rural areas? Example, anonymity & independence**
    - **1**
    - **2**
    - **3**
    - **4**
    - **5**

- **Region?**
- **Types of region**
  - **Subjective/ mental contracts**
  - **Objective/ rally exist**
  - **Programing**
  - **Administrative**
  - **Functional/ nodal/polarized**
  - **formal/ homogenous**

- **Regional Planning:**
  - Regional planning deals with the efficient placement of land use activities, infrastructure, and settlement growth across a larger area of land than an individual city or town.
  - The related field of urban planning deals with the specific issues of city planning.
  - Both concepts are encapsulated in spatial planning using a Eurocentric definition.

## *Cont'd ...Regional Planning*:

A ‘region’ in planning terms can be administrative or at least partially functional, and is likely to include a network of settlements and character areas.

In most European countries, regional and national plans are ‘spatial’ directing certain levels of development to specific cities and towns in order to support and manage the region depending on specific needs

## *Cont'd ...Regional Planning*:

Regional planning as planning is concerned with ordering of human activities in **spura-urban space. i**.e. an area larger than a city(Fried man). According to his defination, city planning is different from regional planning by being a plan of intra urban space.

Regional planning is based on a wide range of social, economic, public health and sanitation, and urban development measures. Natural conditions are taken into account in implementing a regional plan.

The principal task of regional planning is the comprehensive territorial and economic organization of a planned region and the shaping of its planned structure, in order to provide for the rational location of the productive forces and the best conditions for the labor, everyday life, and recreation of the population.

## 1.2. History of Urban and Regional Planning

- **Ancient Civilizations:** Early examples of **planned cities** with **grid street systems**, **drainage**, and **water supply**.
  - **Mesopotamia (Babylon, 3000 BCE)**
  - **Indus Valley (2500 BCE)** and **Egypt**
  - **Ancient Greece:**(5th century BCE)
  - **Ancient Rome**

- **Medieval Period (5th–15th Century)**
  - Growth of **walled cities** for defense.
  - Towns grew around castles, monasteries, and trade routes.
  - Streets often **irregular and organic** (not grid-based).

. **Example:** European medieval towns like Bruges(Belgium) or Carcassonne (France)

- **Renaissance and Early Modern Planning (15th–18th Century)**
  - **Return of geometric and monumental planning.**
  - **Renaissance Italy: Cities designed with symmetry, perspective, and plazas(e.g., Florence).**
  - **Baroque Planning: Emphasis on monumental avenues, radial layouts, and vistas.**
  - **Example: Paris redesigned with grand boulevards.**

- **Industrial Revolution and Modern Urban Planning (19th Century)**
  - **Industrialization (1750–1850):** Rapid urbanization caused overcrowding, slums, and poor sanitation.
  - **Public Health Movement:** Planning aimed at improving sanitation, housing, and green space.
  - **Garden City Movement (Ebenezer Howard, 1898):** Vision of self-contained communities surrounded by greenbelts, combining urban and rural benefits
  - **Haussmann's Paris (1853–1870):** Wide boulevards, parks, and monumental axes to modernize the city.
  - **U.S. City Beautiful Movement (1890s–1900s):** Emphasized monumental design, civic centers, and public parks.

## Emergence of Regional Planning (Early 20th Century)

- Recognition that planning must extend beyond city limits to address **regional issues** (transport, resources, housing).
- **Patrick Geddes (1915):** Advocated "regional survey" as basis for planning.
- **Lewis Mumford:** Promoted regionalism, emphasizing cultural and ecological balance.
- **Example:** Regional planning of London (Greater London Plan, Abercrombie, 1944).

## Post-War Urban and Regional Planning (Mid–Late 20th Century)

- **Post-WWII Reconstruction:** Cities in Europe and Japan rebuilt with modernist principles.
- **Modernist Planning (Le Corbusier):** High-rise housing, zoning, functional separation of land uses.
- **Critiques (Jane Jacobs, 1961):** Opposed modernist planning; emphasized mixed-use neighborhoods and community participation.
- Rise of **national and regional development policies** in newly independent countries (1950s–1970s)..

**Contemporary Trends in Planning (Late 20th – 21st Century)**

- **Sustainable Development (1980s–present):** Integrating environmental, economic, and social dimensions.
- **Participatory Planning:** Involving communities in decision-making.
- **Smart Growth and New Urbanism:** Compact, walkable, mixed-use urban forms.
- **Regional Integration:** Cross-border planning (e.g., EU regional policies, African Union Agenda 2063).
- **Technological Shift:** Use of GIS, remote sensing, and smart city technologies.

- **The main purposes of regional planning**
- *The primary purpose is deciding on the general distribution of new activities and developments*, e.g settlements, commercial and infrastructure
- Secondary purposes, *achieving economic, social and environmental goals*.
  - competitiveness, and Env'tal goals
  - social objectives, e.g housing

- Regional planning purposes may be set in various ways, depending on institutional arrangements made in each country.
- The purposes may also be incarnated in differing manners. The norm is certainly the creation of a document called **a plan**, which will include map or map-like diagrammatic representations of the main proposals, along with, generally, a considerable amount of specific policies, with supporting text which justifies the plan's decisions.

## 1.3. *Rationale/Imperatives for Regional Planning*

- Regional in equality in development
- Region's problem is identical from others; some are backward others depressed, congested
- Pursuit of regional development
- Identical urban problems
- Increasing participation of beneficiaries
- As means of coordinating sectoral activities

- 1.4. Spatial levels and dimensions of planning
- Planning can be applied at different levels. These include planning at individual level, family, community, country and international level.
- Planning at National Level:
- is also called “Inter regional planning” or “regional policy” or development strategy,

*Cont'd*

- Planning at National Level focus on:
  - the allocation of resource based on some formula to achieve socio economic development
  - aims at narrowing regional disparity in development by enhancing the functional integration of regional development
  - proposing regions' contribution to the national development.

*Cont'd*

- Planning at Sub-national Level:
  - focuses on a particular regional with flow of information bottom to top and top to down.
  - is also labeled as "Regional Planning" or "Intra-regional planning". It is a planning process at a sub-national level.

*Cont'd*

- SNP will address the issue of utilization or exploitation of resources,
- intra- regional problems,
- terrestrial or local development and
- arrangement of urban nodes and transportation.
- For example; planning at Oromia or Amhara regional administrative unit

*Con'd Planning levels*

- Planning at Micro-regional level; is a planning type having a small areal coverage, which is below a region and above a single village.

- 1.5. Approaches of regional planning

1. *Regional economic planning;* deals with the spatial orientation aspect of development, distribution of resources among regions, developing /utilizing resources, and addressing spatial inequality in development through different mechanisms like growth poles.
2. *Regional disaggregation of the nation plan*. In order to facilitate implementation of the national plan, we have to disaggregate in to specific local plans.

*3. Regional land use planning;* it was emerged as part of architecture but later included social sciences such as geography. It is about detailed design or layout of land use activities.

*4. Natural resource planning:*

- River basic planning (Awash valley authority)
- Mountain region planning (Tenasi Valley Authority)
- Mineral regional planning

*5. Integrated Rural Development* (**IRD**) which is rural focused and integrated by it approach perspective.

*6. Regional administrative planning*

*7. Community planning*

- 1.6. Process of urban and regional planning

A. Information Phase
   i. Reconnaissance survey
   ii. Problem identification
   iii. Goal Definition
   iv. Formulation of Objectives
   v. Data Collection
   vi. Data Analysis

B. Regional Plan Preparation Phase

C. Regional Plan Implementation Phase

D. Monitoring, Evaluation, and Plan Review

- **Chapter 2: Economic and Spatial Theories in Regional Growth and Planning**
  - Concept of Economic Base
  - Regional change in the short-run
  - Inter- regional trade multiplier
  - Regional Input-Output Analysis
  - A Compromise Approach

# 2.1. Economic Base Theory

- **Douglas C. North (1955)**, an **American economic historian and regional economist**, developed the **Economic Base Theory** to explain how regional economies grow primarily through **export activities**.
- He argued that **exports** act as the **engine of growth**, because they bring new income into the region, stimulating local industries and services.
- His work linked **regional specialization** (trade connecting regions into a unified economy).

## *Cont'd ...Economic Base ...*

- **An increase in the amount of basic activity within a region will increase the flow of income in to the region increasing the demand for goods and services within it and affecting a corresponding increase in the volume of non-basic activity.**
- **Alternatively decrease in basic activity would lead to a fall in income coming in to the region and a decline in demand for the products of the non-basic sector. Hence basic activity as its name suggests has the prime mover role with any changes having a multiplier effect on the regional economy.**

## Cont'd …Economic Base …

A region's basic sector is regarded as the engine that drives local growth, since it is this sector that attracts "new" earnings from other places;

The economic base multiplier is usually calculated in terms of employment and can be expressed as:

$$K = \frac{\text{TE in basic and non basic activities}}{\text{TE in basic activities}}$$

Where, K = Regional employment multiplier

## Cont'd …Economic Base …

- For example, a region with 500, 000 persons in employment 250,000 in basic activities and 250,000 in non basic activity that is 1:1 basic: non basic ratio, will have multiple of:

$$\frac{250{,}000 + 250{,}000}{250{,}000} = 2$$

- Therefore, **trade (exports)** acts as the **engine of growth** for regional development.

- Limitations
- It used employment (number of jobs) as the unit of measurement. It does not consider the fact that equal changes in employment in two basic industries paying widely differing wage levels such as farming and computer technology, may have significantly different multiplier effects, not does it consider changes in productivity whereby a firm may increase output dramatically leading to higher wages and more spending without increasing its lab our forces.
- The identification of basic and non-basic activities is a particularly thorny problem.
- For example: the sale of coal mined locally as fuel for a local steel producer exporting finished steel which may result in seemingly basic industries being classified as non-basic.

# Cont'd …Economic Base …

The indirect approach to the basic/non-basic split may use one or a combination of three methods, none of which is completely satisfactory.

I.The assumption or arbitrary method simply assumes that all primary and manufacturing industry is basic and all service industry in non-basic. No recognition is given to the fact that any one order can contain industries which are either export or local or both in some proportions.

II.The second method that of location quotient (LQ) has greater academic respectability but very little if any more reliability than the first method. The location quotient for each industry in a region can be derived from the following ratio:

$$LQ = \frac{percentage\ of\ regional\ employment\ in\ industry\ A}{Percentage\ of national\ employment\ in\ industry\ A}$$

Ratios greater than1, over a unit area taken to indicate an export or basic activity and the number of workers surplus to those necessary to give an LQ of I (that is surplus for regional self- sufficiency) are assumed to serve the export market. Ratios of less than unity indicate a local or non-basic activity. This method has some advantages. It does take care of intermediate sales (thus the local industry selling to the local steel industry will appear as basic if the LQ is greater than unity) and it is inexpensive and easy to apply. However, some of underlying assumptions such as the uniformity of regional and national demand patterns and the uniformity of regional productivity by industrial sector do weaken its reliability.

A location quotient (LQ) is an analytical statistic that measures a region's industrial specialization relative to a larger geographic unit (usually the nation). An LQ is computed as an industry's share of a regional total for some economic statistic (earnings, GDP by metropolitan area, employment, etc.) divided by the industry's share of the national total for the same statistic. For example, an LQ of 1.0 in mining means that the region and the nation are equally specialized in mining; while an LQ of 1.8 means that the region has a higher concentration in mining than the nation.

# Cont'd …Economic Base …

3. The third method, minimum requirement is a modification of the LQ method using the minimum distribution of employment necessary to support a regional industry rather than the average distribution. For each region, a computation is made of the percentage share which each industry claims of the region's labor force. The percentages are compared and discounting a typical situation, the lowest percentage is taken as the minimum requirement for that particular industry. This minimum represents the bench mark and all employment in other regions above this percentage share is considered as basic employment. This process can be repeated for each industry in the region to give the total basic employment. This method would seem to be even more arbitrary than the LQ method; being highly dependent on the selection of the minimum percentage and the level of industrial disaggregation  a very fine disaggregation would in fact turn most sectors into basic, export activities.

The fact that all three methods can produce very different estimates of basic and non-basic activities for any one particular region underlines the difficulty of identifying the split. At the urban level these functions become service and non-basic and at the national level the majority of activities are non-basic with a relatively limited export sector. Additional to these technical problems are a number of more conceptual problems. The theory assumes that basic industry is the prime mover behind regional change and that for any region there is a given basic and non- basic employment ratio which remains constant as changes in the economic structure of the region take place. Although basic industry probably is a major factor behind many changes in the regional economy, there can be little doubt that in certain situations well developed non-basic activities will themselves attract basic industries to a region and may therefore be amongst the determinants of that area's level of economic activity. It also appears more than likely that the basic/non-basic ratio will actually change with the very growth or decline it is supposed to estimate with the non-basic element becoming relatively more important overtime.

By contrasting on basic or export activity, the theory also unfortunately turns a blind eye to the importance of imports. An increase in basic employment and income may have a very limited multiplier effect on non-basic activity if much of the extra income flows out of the region in the form of expenditure on imports. Although it must be noted that the influence of the trade factor may not always be negative, for as the regional economy grows there may come a point when it can produce a service or good for itself rather than importing it. The resultant increase in non- basic activity may attract new basic industry, which again generates yet more non-basic activity. The fundamental point here of course is that an economy may grow not only by increasing exports from basic industries but also by replacing imports.

- Relevance of the Economic base theory
- it has the undoubted advantages of simplicity and easy application and can shed useful light on a region's economic structure and the general impact of short-run changes.
- In certain situations (e.g. small regions) with a high level of dependence on specialized export activities, can provide a very useful basis for short- run forecasting
- It can also serve as an important point of departure for more elaborated models.

# 2.3. Inter-Regional Trade Multipliers

- Relatively, its more realistic but also rather more complicated approach, accepting that regions receive imports from other regions and are affected by national economic factors such as levels of direct and indirect taxation.
- explains how an **initial injection of money** into one region's economy can cause **a multiplied effect on income and output**, not just within that region but across **interconnected regions**.

## Cont'd inter-regional trade ….

- When we apply this logic to **regions**, we get the **inter-regional trade multiplier**.
- It suggests that when one region receives an economic boost (e.g., new investment, export demand, or government project), part of that income will be **spent on goods and services produced within the region**, and part will **"leak"** to other regions through trade.
- Thus, the effects of an economic stimulus **spread across regions** through **inter-regional trade flows**.

*Cont'd ….Inter-Regional Trade ….*

- This multiplier calculated in money terms as compared with employment in the base theory, is much more akin to the short-run Keynesian income type multiplier of macro economics.
- It is based on the fact that an injection of a certain amount of money into the regional economy will increase regional income affecting an increase in consumer spending (although by an amount less than the original injection). The proportion of income spent becomes someone else's income, some of which they spend and so the procedure is continued through several rounds.

## Here's the process inter regional multiplier:

- **Initial Injection:**
  - A certain amount of money enters a regional economy — for instance, through new export demand, government spending, or foreign investment.
- **First Round of Spending:**
  - Local businesses and workers earn income from this spending. They use part of it to buy local goods (retaining income in the region) and part to buy goods from other regions (leakage).
- **Subsequent Rounds:**
  - The income generated in other regions also leads to further spending — part of which returns to the original region. This back-and-forth spending continues through multiple rounds, creating **a multiplied effect** on inter-regional income.

## 2.4. Regional Input-Output Analysis

- is a fundamental analytical tool in regional economics.
- It helps us understand how different sectors of a regional economy are interconnected, and how changes in one sector can affect others in the short run.
- It is based on the original **Input–Output model** developed by **Wassily Leontief**, a **Russian-American economist**, in the 1930s, who later won the **Nobel Prize in Economics (1973)** for this work.

- In a regional context, the I–O model helps us to trace the **flow of goods and services** among industries **within a region**, as well as between **the region and the rest of the world (other regions or countries)**
- The Input–Output Analysis examines how the output from one sector of the economy becomes the input for another. For example:
  - The steel industry supplies input to the automobile industry. The construction industry purchases output from cement, transport, and energy sectors.
- Thus, the economy is viewed as a system of interdependent sectors, linked by the flow of intermediate goods and services.

- I-O is important because:
  - ✓ It shows how industries within a region depend on each other
  - ✓ It measures how a change (or shock) in one industry affects others
  - ✓ It helps estimate income, employment, and output multipliers for each industrial sector
  - ✓ It helps forecast short-run regional changes in production, jobs, and income.

- **How the Model Works (Simplified Example)**
- a **simple regional economy** with two sectors: **Agriculture &Manufacturing**
- Assume: Agriculture sells part of its output to Manufacturing (for food processing). Manufacturing sells machinery and fertilizer to Agriculture.
- Suppose the data show:
- To produce 1 birr of Agricultural output → needs 0.2 birr of Manufacturing input.
- To produce 1 birr of Manufacturing output → needs 0.3 birr of Agricultural input.
- If there is **an increase in final demand** (say, exports) for Agricultural products by **10 million birr**, the I–O model helps us trace how much **extra production** is needed in both sectors to satisfy this demand — accounting for all **indirect and induced effects**.
- In short: The **initial increase** in Agriculture output → increases Manufacturing demand (for tools, fertilizer, etc.). The **higher demand** in Manufacturing → again raises Agriculture demand (for raw materials).
- This **round-by-round interaction** continues until the total regional output stabilizes.

## Cont'd …Regional Input-Output ….

- The input-output analysis is the very valuable approach for understanding and predicting of short run regional changes.
- It also used for estimating income and employment multipliers for each industrial sector within the region.
- is a method by which the flow of production can be traced among the various sectors of the economy, through to final demand or export.

- The most fundamental problem of input-output analysis is to calculate the necessary output levels of each industry required to achieve a final output. What is the effect upon the local economy from the introduction of a new firm? What are the economic linkages between regions and how is equilibrium between regions achieved? What if the supply of an input in one region becomes restricted through some bottleneck? Input-output analysis can be used to address these issues

## 2.5. A Compromise Approach

Although various approaches are outlined, they have their own advantages and disadvantages. So a **compromise approach is emerged** as a middle course between the over simplicity of the highly aggregated economic base and inter regional trade multiplier and the complexities and heavy data requirements of input-output.

# Chapter 3: Regional Growth-Long Run

Aggregate Growth Models

A Disaggregated Approach

Regional Growth: Convergence or Divergence

Social and Political Factors in Regional Growth and Development