Module - 1

Introduction to Infrastructure Economics
Brief Outline

- Introduction: Economics
- Meaning of Infrastructure
- Infrastructure Economics
- Infrastructure: Features
- Types of Infrastructure
- Indicators of Infrastructure Development
Introduction: Economics

- Economics is a science which studies human behavior as a relationship between ends and scarce means which have alternative uses (Robbins, 1932).
- Economics is the study of how societies use scarce resources to produce valuable commodities and distribute them among different people (Samuelson and Nordhaus, 2007).
- Economics is thus the ‘study of scarcity’ and analyzes the rational behavior-the choices made in micro frame work in allocation of scarce resources to alternative uses.
- Household are constrained by individual budgets and businesses by technology and resources.
Meaning of Infrastructure

- **Infrastructure** is the system of public works in a country, state or region, including roads, utility lines and public buildings (United Nations, 2000).

- Infrastructure refers to the substructure or underlying foundation or network used for providing goods and services; especially the basic installations and facilities on which the continuance and growth of a community, state, etc depend (U.S. EPA, 2009).

- Infrastructure is the basic facilities and services that are necessary for carrying out the economic activities and which help in the economic development of the country. These basic facilities do not produce goods and services but facilitate the production and distribution processes.
Infrastructure Economics

- Infrastructure economics attempts to study the infrastructure from an economics viewpoint.
- The demand and supply of infrastructure in the economy.
- The mismatch between demand for infrastructure finance and supply of investable funds: the infrastructure financing gap.
- The cost-benefit analysis of infrastructure projects.
- The returns on infrastructure investments.
- Infrastructure and economic growth.
- Models of infrastructure development.
Types of Infrastructure: Broad Category

(a) Economic Infrastructure

Economic infrastructure is the basic facilities which directly benefit the process of production and distribution in an economy. Roads, railways, telecommunication systems, waterways, airways, financial institutions, electricity, water supply etc. are the examples of economic infrastructure.

(b) Social Infrastructure

These are the basic amenities that do not directly influence the economic activities, but indirectly have an impact on the economy through achieving certain social objectives. For example, education does not directly influence economic activities like production and distribution but indirectly helps in the economic development of the country by spill-over effects. So education, health services and sanitation etc. are the examples of social infrastructure.
# Types of Infrastructure: Detailed Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Name</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1</td>
<td>Rural Infrastructure</td>
<td>Irrigation, rural connectivity (roads, power, IT), cold chains and mandis</td>
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<tr>
<td>Category 2</td>
<td>Urban Infrastructure</td>
<td>Water, sanitation, sewerage, Telecomm, Internet</td>
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<td>Category 3</td>
<td>Core Infrastructure</td>
<td>Roads, railways, airports, sea ports, inland waterways, energy</td>
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<td>Category 4</td>
<td>Social Infrastructure</td>
<td>Healthcare, education, housing, hospitality</td>
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<td>Category 5</td>
<td>Land- Intensive</td>
<td>SEZs, industrial parks, townships, IT parks</td>
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Economic Indicators of Infrastructure Development

- Per Capita Electricity Consumption
- Per Capita Energy Use (kg of oil equivalent)
- Telephone Line Per 1000 Population
- Rail Density Per 1000 Population
- Air Transport, Freight Million Tons Per Kilometer
- Paved Roads As Percentage of Total Roads
<table>
<thead>
<tr>
<th>Social Indicators of Infrastructure Development</th>
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<tbody>
<tr>
<td><strong>Number of Hospitals Bed Per 10000 Population</strong></td>
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<tr>
<td><strong>Number of Hospitals Per 1 Lakh Population</strong></td>
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<tr>
<td><strong>Number of Primary and Middle Schools Per 10000 Population</strong></td>
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<tr>
<td><strong>Number of High Schools Per 10000 Population</strong></td>
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THANK YOU