CHAPTER V

CONCEPTUAL BACKGROUND

5.1 DEFINITION

The word *infrastructure* has been used in English since at least 1927 and meant: The installations that form the basis for any operation or system (http://dictionary.reference.com/browse/infrastructure). Other sources, such as the Oxford English Dictionary, trace the word's origins to earlier usage, originally applied in a military sense. The word is a combination of the Latin prefix "infra", meaning below and "structure" meaning set up. The military use of the term achieved currently in the United States after the formation of NATO in the 1940s, and was then adopted by urban planners in its modern civilian sense by 1970. (http://dictionary.reference.com/browse/infrastructure).

The *American Heritage Dictionary*, defines the term “infrastructure” as the basic facilities, services, and installations needed for the functioning of a community or society, such as transportation and communications systems, water and power lines, and public institutions including schools, post offices, and prisons.

It usually defines as underlying basic buildings, institutions and facilities or other essential elements that are necessary to sustain and enable economic growth in the economy (Sanchez-Robles, 1998; Canning,D. et al., 1994). Hiresman (1958) summarized as “infrastructure may be considered as the foundation of an economy as it represents those services without primary, secondary and tertiary activities can not function”. In other words, infrastructure represents as broad spectrum of activities and services without which no activity can be undertaken in the economy. It plays a key role in our society and constitutes the wheels, if not the engine of development (Prakash,H., 2005). Infrastructure increases economic productivity, gains degree of specialization (Bougeas et al., 1999; Henderson,J.V., 1988), lowers production costs (Romer,P.M. 1987), improves quality of life, alleviates poverty (World Bank, 1997), raises international competitiveness, attracts foreign investment and helpful in urbanizing the economy (Henderson, J.V., 2002). An adequate quantity, quality and reliability of infrastructure are thus important preconditions for overall economic growth. Infrastructure's linkage to the economy is very multiple and complex, as it affects production and consumption directly, creates positive and negative effects and involves large inflows of expenditure (Goel,D., 2002). Infrastructure investment generally works through employment multiplier, income multiplier and investment multiplier.
"Hard" versus "soft" infrastructure

"Hard" infrastructure refers to the large physical networks necessary for functioning of a modern industrial nation, whereas "soft" infrastructure refers to all the institutions which are required to maintain the economic, health, cultural and social standards of a country, such as the financial system, the education system, the health care system, the system of government and law enforcement, as well as emergency services (http://www.opendb.net/element/19099.php).

Critical infrastructure

The term critical infrastructure has been widely adopted to distinguish those infrastructure elements (both hard and soft) that, if significantly damaged or destroyed, would cause serious disruption of the dependent system or organization. Storm, flood, or earthquake damage leading to loss of certain transportation routes in a city (for example, bridges crossing a river), could make it impossible for people to evacuate and for emergency services to operate; these routes would be deemed critical infrastructure. Similarly, an on-line booking system might be critical infrastructure for an airline (www.fas.org/sgp/crs/RL32631.pdf).

Urban infrastructure

Urban or municipal infrastructure refers to "hard" infrastructure systems generally owned and operated by municipalities, such as streets, water distribution, sewers, etc. It may also include some of the facilities associated with "soft" infrastructure, such as educational institution, health centers, parks, public pools and libraries.

5.2 DEFINITION OF INFRASTRUCTURE IN INDIA

While Infrastructure is recognized as a crucial input for economic development, there is no clear definition of infrastructure according to the current usage of the term in India. The National Statistical Commission headed by Dr. C. Rangarajan, attempted to identify infrastructure based on some characteristics.

Dr. C. Rangarajan Commission’s Notion of Infrastructure (2001):

The Rangarajan Commission indicated six characteristics of infrastructure sectors, (a) Natural monopoly, (b) High-sunk costs, (c) Non-tradability of output (d) Non-rivalness (up to congestion limits) in consumption, (e) Possibility of price exclusion, and (f) Bestowing externalities on society.

Dr. Rakesh Mohan Committee Report (1996) and the Central Statistical Organisation (CSO):

Dr. Rakesh Mohan Committee in “The India Infrastructure Report” included Electricity, gas, water supply, telecom, roads, industrial parks, railways, ports, airports, urban infrastructure, and storage as infrastructure. Except industrial parks and urban infrastructure, all these sub-sectors are treated by CSO also as infrastructure.
Reserve Bank of India (RBI) circular on Definition of Infrastructure (2007):

As per the RBI, a credit facility is treated as “infrastructure lending” to a borrower company which is engaged in developing, operating and maintaining any infrastructure facility that is a project in any of the sectors mentioned in Table 16, or any infrastructure facility of a similar nature.

World Bank (2003):

The World Bank treats power, water supply, sewerage, communication, roads & bridges, ports, airports, railways, housing, urban services, oil/gas production and mining sectors as infrastructure.

Economic Survey:

The Economic Survey considers power, urban services, telecommunications, posts, roads, ports, civil aviation, and railways under infrastructure sector.

5.3 INFRASTRUCTURE AND THE ECONOMY

The well being of a country’s people is directly attributed to its level of economic growth. A country’s economic growth is directly dependent upon its infrastructure as evidenced by the direct link between Gross Domestic Product (GDP) per capita and infrastructure stocks per capita as shown by Sullivan (1999). In Sullivan’s estimation, telecommunication (specifically the number of telephone main lines per 1000 people) is the key indicator of a country’s infrastructure due to its direct association with a country’s GDP. According to a World Bank study (1997), a country’s GNP is said to “take off” when telephone lines per 1000 people exceeds 73. Other key factors influencing GNP are safe water, electricity, and paved roads. A nation’s infrastructure development plays a significant role in its economic growth. A fast growing economy warrants an even faster development of infrastructure. In India the infrastructure sector currently accounts for 26.7% of India’s industrial output and thus remains a useful tool to balance the economy. Moreover infrastructure is the lifeline of any business activity (NCAER, 2000).

5.4 INFRASTRUCTURE AND URBAN COMPETITIVENESS

The world is changing. The old industrial economy is being transformed into a post-industrial economy. In this context, the role, and in fact, nature of infrastructure has changed as well. “Traditional” infrastructure systems are still important but in the new economy, investments that create the conditions needed for competitive advantage (OGRA’S MILESTONES, 2009).

While urban competitiveness is a somewhat amorphous concept, it can be defined as the long-term ability of an urban area to use its advantages to make trade gains, which in turn support sustained growth in incomes and employment. A local economy’s competitive advantage is defined by the capacity for local firms to compete externally. In a global economy where most
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<td>Yes</td>
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<td>Yes</td>
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<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Urban services; as street lighting, Solid Waste Management (SWM)</td>
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<td>(Rakesh Mohan), No (CSO)</td>
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<td>Yes</td>
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<td>Yes</td>
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<td>(RM), No(CSO)</td>
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<td>Yes</td>
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<td>Yes</td>
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Source: Compiled from Planning Commission, Secretariat for Infrastructure, GOI
production factors are mobile, a local government can create the right conditions for competitive advantages based on unique local characteristics of capital and labour. Infrastructure investments may directly support the local economic sectors engaged in trade with external economies or they may indirectly support the trading sector by enhancing the labour supply, the supply of locally produced goods and services, and the general health, safety, attractiveness and image of the city. It is through its infrastructure investments that municipalities, in part, attract human capital and business to the local economy and improve the productivity of the existing human capital, both in the local economy and in the competing export economy. Both types of infrastructure investments have an impact on the competitiveness of the city, on the local quality of life, health and safety of the community, and on the distributional equity of incomes and public services (OGRA’S MILESTONES, 2009).

5.5 URBAN INFRASTRUCTURE “CRISIS”? 

Today the cities face significant infrastructure challenges. The trend of declining capital and maintenance budgets raises serious concern about the future condition of public facilities, maintenance cut backs are bound to shorten the useful life of facilities at a time when capital rehabilitation funds are limited. Besides infrastructure needs of the sprawling suburbs have yet to be effectively addressed. But it is true; infrastructure will continue to be a critical factor in economic competitiveness. The linkage between economic activity and infrastructure continues to grow stronger and more critical as economic activity itself becomes increasingly more complicated and global in scope (Dhaliwal, S.S., 2004).

Today’s so called infrastructure crisis has produced a variety of innovations and experiments with regard to financing, public-private cooperation and various types to lease back, sell-back and private sector option. The evolution of the urban infrastructure has indicated the extent to which the integrity of infrastructure as working system is dependent on a wide range of political, technical, financial and demographic factors.

The built environment, including both private and public elements is very slow to change and the largely public urban infrastructure is even slower. The more radical systematic change such as the shift from privy vault or cesspool system to sewerage from well and pumps to water works depended on interest group coalitions on the demand side and the existence of technical expertise and financial resources on the supply side. These major systematic shifts, of course, took several decades to occur (Dhaliwal, S.S., 2004).

5.6 AREAS OF FOCUS ON URBAN INFRASTRUCTURE

The following areas of relationship between infrastructure and the processes of urbanization and development need to be focused:

1. The relationship between infrastructure construction and development.
2. The operation of urban real estate markets in relationship to infrastructure development.
3. Processes and procedure of urban infrastructure maintenance. The role of political machine.
4. The influence of neighborhood on infrastructure development.
5. Comparisons between types of cities with regard to infrastructure development.
6. The diffusion process of technologies and innovation related to urban infrastructure.
7. The development and experience of different funding mechanisms for urban infrastructure.

REFERENCES:
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www.fas.org/sgp/crs/RL32631.pdf

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