

Chapter 4: Infrastructure Development in India

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1. INTRODUCTION

India's rise in recent years is a most prominent development in the world economy. India has re-emerged as one of the fastest growing economies in the world. India's growth, particularly in manufacturing and services, has boosted the sentiments, both within country and abroad. With an upsurge in investment and robust macroeconomic fundamentals, the future outlook for India is distinctly upbeat. According to many commentators, India could unleash its full potentials, provided it improves the infrastructure facilities, which are at present not sufficient to meet the growing demand of the economy. Failing to improve the country's infrastructure will slow down India's growth process. Therefore, Indian government's first priority is rising to the challenge of maintaining and managing high growth through investment in infrastructure sector, among others.¹

The provision of quality and efficient infrastructure services is essential to realize the full potential of the growth impulses surging through the economy. India, while stepping up public investment in infrastructure, has been actively engaged in involving private sector to meet the growing demand. The demand for infrastructure investment during

¹ See, Government of India (2007, p. 16)

the 11th Five Year Plan (2007-2011) has been estimated to be US\$ 492.5 billion (Planning Commission, 2007). To meet this growing demand, Government of India has planned to raise the investment in infrastructure from the present 4.7 percent of GDP to around 7.5 to 8 percent of GDP in the 11th Five Year Plan. In general, efforts towards infrastructure development is continued to focus on the key areas of physical and social infrastructure.

The present paper is a shorter version of the India country report carried out by the author on-behalf of RIS for ERIA. This version presents a quick profile and prospects of India's physical infrastructure sector.

2. PROFILE OF INDIA'S PHYSICAL INFRASTRUCTURE

Performance of physical infrastructure in Indian economy in last one and half decades has been mixed and uneven. Table 1 provides the latest achievement of India's physical infrastructure sector. Over years, India's soft infrastructure grew much faster than the hard infrastructure. For example, India's rising trade has been reflected in growing container port traffic, which increased from less than a million in 1991 to about 5 million in 2005 with an annual growth rate of about 266 percent since 1991. In contrast, hardware components, like railways, roadways and airways, witnessed little expansion in last one and half decades. In general, performances of these sectors (hardware) are nevertheless poor, when counted their densities in terms of country's surface area or population. Densities in terms of access or spread of rail and road length clearly indicate that road sector has been successful, compared to railways, in spreading the network as

well as providing an access in the economy.

Table 1: Overview of Physical Infrastructure

Particulars	1991	2000	2005	AAGR (%)
				(1991-2005)
Railways length (1000 km)	62.46	62.76	63.47	0.13
Road length (million km)	2.35	3.32	3.85	5.32
Fixed line and mobile phone subscribers (per 1,000 people)	7	36	128	150.35
Air freight (million tons per km)	493.10	547.65	773.22	4.73
Air passengers carried (million)	10.72	17.30	27.53	13.07
Air transport, registered carrier departures worldwide (million)	0.12	0.20	0.33	14.89
Container port traffic (million TEUs)	0.15	2.45	4.94	266.01
Electric power consumption (kWh per capita)	295.02	402.02	457.32	4.58
Electric power consumption (kWh)	255.65	408.42	493.78	7.76

Note: AAGR – Annual Average Growth Rate (%) for the period 1991 to 2005.

Source: World Development Indicators CD ROM 2007, World Bank

Table 2: Trends in Rail and Road Density in India

		1991	2000	2005
Rail	Spread*	19.00	19.09	19.31
	Access**	0.07	0.06	0.06
Road	Spread*	714.99	1008.76	1171.60
	Access**	2.71	3.26	3.52

Notes: *Route (length) density per 1000 sq. km of surface area.

** Route (length) density per 1000 population.

Source: Calculated based on World Development Indicators CD ROM 2007, World Bank

What follows is that software part of India's physical infrastructure (like telecom, air and port services) performed well, thus not only helped the country to maintain a faster growth but also integrated the economy with the world market at a faster pace. At the same time, the hardware component of the country's physical infrastructure (e.g. road, rail, power) comparatively grew slowly, thus negated the country's development process.

Therefore, in order to unleash India's full potentials, development of hardware component of India's physical infrastructure perhaps deserves utmost attention. This also indirectly indicates high investment potentials in roadways, railways, power and the associated components in India.

2.1. Roads

The most distinct part of India's physical infrastructure development in recent years is the development of road network across the country; per sq. km. of surface area in India is now endowed with one km of roadways. India has one of the largest road networks in the world, aggregating to 3.34 million km. The country's road network consists of Expressways, National Highways, State Highways, Major District Roads, Other District Roads and Village Roads. The road network, as on December 2007, comprises 66,590 km of National Highways, 128,000 km of State Highways, 470,000 km of Major District Roads and about 2.65 million km of other District and Rural Roads. National Highways comprise only about 2 percent of the total length of roads and carry about 40 percent of the total traffic across the length and breadth of the country. Out of the total length of National Highways, 32 percent is single lane/intermediate lane, 56 percent is 2-lane standard and the balance of 12 percent is 4-lane standard or more.

The National Highways Development Project (NHDP), the largest highway project ever undertaken by the country, is being implemented by the National Highway Authority of India (NHAI). NHDP Phase I & II envisage 4/6 laning of about 14,279 km of National Highways, at a total estimated cost of Rs.650 million (at 2004 prices). These two phases

comprise of Golden Quadrilateral (GQ), North-South and East-West Corridors, Port Connectivity and other projects. The Golden Quadrilateral (GQ-5,846 km) connects the four major cities of Delhi, Mumbai, Chennai and Kolkata. The North-South and East-West Corridors (NS-EW-7,300 km) connect Srinagar in the North to Kanyakumari in the South, including spur from Salem to Kochi and Silchar in the East to Porbandar in the West. By November 30, 2006, 6,776 km of national highways pertaining to NHDP had been completed, the bulk of which (5,475 km) lie on the GQ. Constraints faced in the timely completion of NHDP include delays in land acquisition, removal of structures and shifting of utilities, law and order problem in some States, and poor performance of some contractors. Nearly 93 percent works on GQ have been completed by November 2006, and the NS and EW corridors are expected to be completed by December 2009. With the completion of about 93 percent of the GQ, a substantial impact upon the economy is already visible. At this stage there is a need to focus attention on corridor management and road safety, and NHAI has already put in place a corridor management policy.

Financing of NHDP

For implementation of NHDP Phases I and II, the main source of finance of NHAI is the fuel cess. The present rate of cess is Rs. 2 per litre on both petrol and diesel. A part of this cess is allocated to NHAI to fund the NHDP. This cess is leveraged to borrow additional funds from the domestic market.

Besides, the Government of India has also negotiated various loans from World Bank (US\$ 1,965 million), Asian Development Bank (US\$ 1,605 million) and Japan Bank for

International Cooperation (Jap. Yen 32,060 million) for financing various projects under NHDP. These loans from the multilateral institutions are passed on to NHAI by the Government partly in the form of grant and partly as loan. NHAI also negotiated a direct loan of US\$ 165 million from ADB for one of its projects. The funds provided to NHAI, including its borrowings from the market, are utilized for meeting project expenditure as well as debt servicing.

Future plans

Government has set ambitious plans for upgradation of National Highways in a phased manner in the years to come. A presentation was made before the Committee on Infrastructure proposing the following projects in addition to the completion of the ongoing works included under NHDP Phase-I and Phase-II:

- 4-laning of 11,113 km (NHDP Phase- III) including 4,035 km already approved.
- Accelerated road development programme for the North Eastern region.
- 2-laning with paved shoulders of 20,000 km of national highways (NHDP Phase-IV).
- 6-laning of GQ and some other selected stretches covering 6,500 km (NHDP Phase-V).
- Development of 1,000 km of expressways (NHDP Phase-VI).
- Development of ring roads, bypasses, grade separators, service roads etc. (NHDP Phase-VII).

As a policy, Government has decided to take up future phases of NHDP proposals

mainly on a PPP basis. Implementation of projects through construction contracts will be only in exceptional cases where private sector participation is not possible at all.

2.2. Ports

Ports have been playing a crucial role in facilitating India's international trade and also in generating economic activity in their surroundings and hinterland. India's coastline of 7,517 km. is added with 12 major ports and 187 non-major ports. Of the non-major ports, around 60 are handling traffic. The total traffic carried by both the major and minor ports during 2005-06 was estimated at around 570 million tonnes. The 12 major ports carry about 3/4th of the total traffic, whereas Vishakhapatnam (on the eastern coast) is the largest port in India. Despite having adequate capacity and modern handling facilities, average turnaround time is 3.5 days as compared with 10 hours in Hong Kong, which undermines the competitiveness of Indian ports. Congestion is due primarily to the slow evacuation of cargo rather than a lack of handling capacity, since ports are not adequately linked to the hinterland. To this end, all port trusts have set up groups with representatives from NHAI, the Railways, and State governments to prepare comprehensive plans aimed at improving road-rail connectivity of ports. An efficient multimodal system, which uses the most efficient mode of transport from origin to destination, is a prerequisite for the smooth functioning of any port. It involves coordinating rail and road networks to ensure good connectivity between port and hinterland.

In 2006-07, up to October 2006, cargo handled by major ports registered growth of 6.6

per cent, down from 10.4 per cent observed in the corresponding seven months of 2005-06. About 80 per cent of total volume of ports' traffic handled was in the form of dry and liquid bulk, with the residual consisting of general cargo, including containerised cargo.

There was an impressive growth of 13.6 per cent per annum in container traffic during the five years ending in 2005-06. Half of the world's traded goods are containerized, and this proportion is expected to increase further. The largest container port in the world in 2005, Singapore, processed 23.19 million TEUs (twenty foot equivalent units). The 10th largest port, Los Angeles in the USA processed 7.49 million TEUs. In contrast, Jawaharlal Nehru Port (JNP), India's largest container port, handled roughly 2.67 million TEUs in 2005-06.

The annual aggregate cargo handling capacity of major ports increased from 397.5 million tonnes per annum (MTPA) in 2004-05 to 456.20 MTPA in 2005-06, with the average turnaround time increasing marginally from 3.4 days to 3.5 days in 2005-06. The average output per ship berth-day improved from 9,240 in 2004-05 to 9,267 tonnes in 2005-06. The pre-berthing waiting time at major ports on port account, however, increased from 6.03 hours in 2004-05 to 8.77 hours in 2005-06. Significant inter-port variations in pre-berthing waiting time is continued to persist.

National Maritime Development Programme (NMDP)

Following the success of NHDP that is expected to vastly improve connectivity in India,

the Government of India has undertaken the NMDP with an investment of Rs. 610 billion to boost infrastructure at major ports in the next ten years. Under the NMDP, 228 projects have been identified for implementation in two phases through public-private partnership. By identifying specific projects and other measures, the NMDP will over the next 10 years give a concrete shape to the vision and strategy of the National Maritime Policy. The envisaged investment for these projects is estimated at Rs 610 billion. Of this, Rs 392.38 billion will be coming from the private sector, Rs 114.45 billion through budgetary support and Rs 50.78 billion from port trusts' internal resources.

2.3. Civil Aviation

2.3.1. Airports

The operations, management and development of the airports at Delhi and Mumbai were handed over to the joint venture companies namely Delhi International Airport (P) Ltd. (DIAL) and Mumbai International Airport (P) Ltd. (MIAL). The strategic joint venture partners in DIAL are a consortium led by GMR Group along with Fraport as the Airport Operator, and Malaysian Airports and India Development Fund as the other members. The joint venture partners together hold 74 per cent equity with the balance 26 per cent being held by Airports Authority of India (AAI). Similarly, in case of MIAL, the strategic joint venture partners are a consortium comprising of GVK Group along with Airport Company South Africa as the Airport Operator, and Bidest, South Africa as the other member.

Various agreements/contracts for handing over the control of the two airports to DIAL and MIAL were executed in April 2006; and with effect from May 3, 2006, the transactions have become effective. The companies have since finalized their master plans for a 20 year period.

Construction work at greenfield airports of international standards at Hyderabad and Bangalore is in progress.² The two airports are likely to be fully operational by the middle of 2008. Proposals to set up greenfield airports in Navi Mumbai, Kannur in Kerala, Goa and Pakyong near Gangtok in Sikkim are in the pipeline. A Greenfield international airport is already operational in Kochi, Kerala.

Airports Authority of India (AAI) has decided to develop and modernize 35 non-metro airports in the country, namely, Agati, Agartala, Agra, Ahmedabad, Amritsar, Aurangabad, Bhopal, Bhubaneswar, Chandigarh, Coimbatore, Dehradun, Dimapur, Goa, Guwahati, Imphal, Indore, Jaipur, Jammu Khajurao, Lucknow, Madurai, Mangalore, Nagpur, Patna, Port Blair, Pune, Raipur, Rajkot, Ranchi, Trichy, Thiruvananthapuram, Udaipur, Vadodara, Varanasi, and Vishakapatnam. The Committee on Infrastructure has approved the report of the task force for the development of 35 non-metro airports. Development of airports in India's North Eastern Region (NER) will be taken up by AAI on a priority basis.

2.3.2. Airport Economic Regulatory Authority (AERA)

² The first phase of international airport at Hyderabad was completed and opened to public in the 2nd week of February 2008.

Through an Act of Parliament, Airport Economic Regulatory Authority (AERA) is proposed to be set up to fix, review and approve tariff structure for the aeronautical services and monitor pre-set performance standards at Indian airports. The Authority will ensure a level playing field for all categories of airport operators and also oversee and deal with natural monopoly and common user/ carrier segments of airports. Government has adopted an overall liberal approach in the matter of grant of traffic rights under bilateral agreements with various foreign countries. A revised air services agreement was signed with USA that led to increased co-operation in the aviation sector. Under this agreement, both sides can designate any number of services to any point in the territory of the other country with full intermediate and beyond traffic rights. Similarly, traffic rights were enhanced with 19 other countries — Australia, Belgium, Canada, China, Egypt, France, Germany, Italy, Japan, Kuwait, Mauritius, the Netherlands, New Zealand, Oman, Scandinavian countries, Singapore, Spain, UAE (Sharjah), UK — to provide for more flights and better connectivity with these countries and also more commercial opportunity to all operating carriers.

The signing of a new Air Services Agreement is the first milestone for the purpose of establishing air connectivity with new destinations. During the recent past, a number of new Air Services Agreements were initialled (signed) based on modern practices in the civil aviation sector. Air Services Agreement with some countries were signed a long time ago and needed updating in view of the changed circumstances and developments in the international civil aviation scenario, and with respect to newer standards and recommended practices. Some of these countries are Australia, Brazil, Finland, Iceland,

New Zealand, Qatar, Tunisia, UK and USA. The tourist charter guidelines were significantly liberalized in 2004. All airports in the country were opened for international tourist charters flights and Indian passport holders were also allowed to travel on the tourist charter flights. Recently, Government has decided to liberalise the tourist charter guidelines further.

2.3.3. Airlines

A major fleet acquisition is underway by the national carriers, namely Indian Airlines, Air India and Air India Charters' Limited. The project of Indian Airlines for acquisition of 43 Airbus aircraft has been approved by the Government. The first A-319 from this batch of new aircraft joined the fleet of Indian Airlines Limited in October, 2006 and the remaining 42 aircraft will arrive in batches by March, 2010. After receiving Government approval, Air India signed an agreement with Boeing Company on December 30, 2005 for the acquisition of 8 B777-200 LR, 15 B777-300 ER, 27 B787 Dreamliner aircraft for itself, and 18 B737-800 aircraft for its subsidiary company Air India Charters Limited, which operates a low cost airline under the brand name Air India Express. These aircraft would be delivered to Air India between end of November, 2006 and December, 2011. Up to December, 2006, Ministry of Civil Aviation has issued no objection certificate for import/acquisition of 42 aircraft for scheduled operators, 62 aircraft for non-scheduled operators and 31 aircraft for private operators. Besides this, in principle approval for 135 aircraft was also granted to scheduled operators.

2.3.4. Air traffic

Policy initiatives have had a marked impact upon airline traffic. Air traffic has grown up substantially since 2004-05. During the period April-September, 2006, international and domestic passengers recorded growth of 15.8 percent and 44.6 percent, respectively, leading to an overall growth of 35.5 percent. During the same period, international and domestic cargo recorded growth of 13.8 percent and 8.7 percent, respectively, resulting in an overall growth of 12.0 percent.

2.4. Railways

Indian Railways, world's second largest rail network under a single management, has been contributing to the development of the country's industrial and economic landscape for over 150 years. Of the two main segments of the Indian Railways, freight and passenger, the freight segment accounts for roughly two-thirds of revenues. Within the freight segment, bulk traffic accounts for nearly 95 percent, of which more than 44 percent is coal. Improved resource management, *inter alia*, through increased wagon load, faster turnaround time and a more rational pricing policy has led to an improvement in the performance of the railways during the last two years.

Rationalization of classification is aimed at securing eventual elimination of cross-subsidies in fares and freight, and evolving a more transparent and cost-based tariff regime. This process necessarily requires increase in freight rates for commodities being transported below cost and lowering the freight charges for commodities being

moved at abnormally high rates. In the freight segment, the number of commodities in goods tariff has been reduced from 4,000 commodities to 80 main commodity groups in 2005-06, and further to 27 groups in 2006-07. The total number of classes for charging freight has been reduced from 59 to 17.

The high-density network connecting the four metropolitan cities of Chennai, Delhi, Kolkata and Mumbai, including its diagonals, popularly called the Golden Quadrilateral has got saturated at most of the locations. Given the present growth scenario, the Railways expect to carry 95 million tonnes incremental traffic per year and about 1,100 million tonnes revenue earning freight traffic by the end of the Eleventh Five Year Plan. This entails large investment for capacity augmentation.

Dedicated Freight Corridors (DFCs)

Development of dedicated freight corridors (DFCs) for carrying additional traffic is essential in view of the high growth in demand. Therefore, the Railways have proposed a 2700-kilometer long railway line project (Eastern Corridor from Ludhiana to Sonnagar as Phase-I – 1,279 Km. and Western Corridor from Jawaharlal Nehru Port near Mumbai to Dadri / Tughlakabad – 1,483 Kms). Both the Eastern and Western Corridors will be made suitable for running of longer and heavier trains of 25 tonne axle load. While the Eastern Corridor will be electrified, the Western Corridor will operate on diesel traction in order to permit Double Stack Container operation. Logistics parks are proposed to be developed on DFC. An SPV called Dedicated Freight Corridor Corporation of India Limited (DFC-CIL) has been formed to implement the project.

2.5. Urban Infrastructure

Urban infrastructure consists of drinking water, sanitation, sewage systems, electricity and gas distribution, urban transport, primary health services and environmental regulation. The process of urbanization has gathered considerable momentum in recent years and this has put urban infrastructure and services under severe strain.

Urban transport

Urban transport is one of the key elements of urban infrastructure. The major objective of urban transport initiative is to provide efficient and affordable public transport. A National Urban Transport Policy (NUTP) has been formulated with the objective of ensuring easily accessible, safe, affordable, quick, comfortable, reliable and sustainable mobility for all.

Revised guidelines for preparation of comprehensive city transport plans and DPRs have been prepared and circulated to all State Governments/UTs for availing of financial assistance to the extent of 40 per cent of cost as Central assistance under the present scheme of Urban Transport Planning. Detailed guidelines have also been formulated for the guidance of the States and cities and preparation of DPRs for both rail-based and road-based public transport.

Delhi and Kolkata have introduced Metro Rail system in their cities. Delhi Mass Rapid Transit System (MRTS), a joint venture between the Government of India and the Govt.

of National Capital Territory of Delhi, is being implemented by the Delhi Metro Rail Corporation (DMRC).

The Bangalore Mass Rapid Transit System (MRTS) contemplates construction of metro corridors along East-West (18.1 km.) and North-South (14.9 km.) in Bangalore. The Government of Karnataka has got financial appraisal of the project conducted recently. The estimated completion cost of the project is Rs.56.05 billion. Bangalore Metro Rail Corporation (BMRC), a joint venture company, is executing the project, which is scheduled to be completed by 2011. The first section of 7 km. will be completed in 2009.

The Government of Maharashtra has proposed a MRTS for Versova-Andheri-Ghatkopar on the basis of Mumbai Metro Master Plan. The project — Mumbai Metro Rail Project — consists of two corridors. First corridor is of a total length of 11.07 kms. —Versova-Andheri-Ghatkopar. Completion cost is estimated at Rs. 23.56 billion and it is proposed to be funded through Viability Gap Funding (VGF). The second corridor is Colaba-Bandra-Charkop line of 38.23 km. length. Estimated cost is Rs. 88.25 billion (at June 2005 prices). While giving in-principle approval for the project, the Government of Maharashtra has been asked to exhaust the VGF route first.

2.6. Special Economic Zones (SEZ)

SEZs are designated duty-free enclaves with developed industrial infrastructure. These zones are regarded as foreign territory for the purpose of duties and taxes, and are

excluded from the domain of the custom authorities to enjoy full freedom for the in and outflow of goods. SEZ units enjoy a tax exemption for seven years: 100 percent exemption in first 5 years, and 50 percent in the remaining 2 years. They have the facility to retain 100 percent foreign exchange earnings in Export Earners Foreign Currency Exchange accounts. All SEZ units are free to sell goods in the domestic tariff area (DTA) on payment of applicable duties.

During 2005-06, exports from functioning SEZs, which are mainly the former EPZs were around US\$ 5 billion. At present 1,016 units are in operation in these SEZs providing direct employment to over 179,000 persons (about 40 per cent of whom are women). Private investment by entrepreneurs for establishing units in these SEZs is of the order of about Rs. 31.63 billion. After the SEZ Act and SEZ Rules came into effect on February 10, 2006, formal approval has so far been granted to 237 SEZ proposals and in-principle approval has been granted to 164 SEZ proposals. Out of the 237 formal approvals, notifications have already been issued in respect of 63 SEZs. In these 63 new generation SEZs which have come up after February 10, 2006, investment of the order of Rs.111. 94 million has already been made in less than one year. These SEZs have so far provided direct employment to 15,097 persons. It is expected that total investment in these SEZs would be around Rs. 584.59 million and 890,700 additional jobs will be created by December 2009. It is also expected that if all the 237 SEZs become operational, investment of the order of Rs. 3000 billion may take place and 4 million additional jobs may be created.

3. INFRASTRUCTURE INVESTMENTS REQUIREMENT IN INDIA

India is expected to grow at an average 9 percent per annum in next few years.³ Accompanying this growth will be an increase in demand for infrastructure services. Economic and population growth prospects are expected to place additional pressure on existing infrastructure facilities. Therefore, addressing these challenges will be essential if the infrastructure sector is to continue fostering economic growth rather than becoming a constraint. In other words, a failure to respond to this demand will cause bottlenecks to growth and hamper poverty alleviation efforts.

Table 3: Requirement of Infrastructure Investments in India during 2007-2011

Sectors	Anticipated Investment in 10 th FYP (2002-2007)	Projected Investment in 11 th FYP (2007-2011)	Percentage Change
	US\$ billion		%
Electricity	70.5	150.4	111.3
Roads and bridges	31.7	76.1	140.1
Telecom	22.5	65.1	189.3
Railways	20.3	62.2	206.4
Irrigation	32.1	53.1	65.4
Water and sanitation	15.6	48.6	211.5
Ports	1.3	18.0	1284.6
Airports	2.1	8.5	304.8
Storage	2.3	5.5	139.1
Gas	2.1	5.0	138.1
Total	200.5	492.5	145.6

Source: Government of India (2007)

To sustain 9 percent growth, the Government of India has estimated that an investment

³ See, Planning Commission (2007)

of over US\$ 492.5 billion during the 11th Five Year Plan (2007-2012). The infrastructure investment has increased in the past few years, driven by government initiatives and private participation, but that need to be escalated in coming years. Some of the important infrastructure investments are given in Table 3. The Government of India expects that 22-25 percent of the investment (of US\$ 384 billion) required is to come from private sector (Government of India, 2007). According to the Committee on Infrastructure, headed by the Indian Prime Minister, these investments are to be achieved through a combination of public investment, public-private-partnerships (PPPs) and exclusive private investments, wherever feasible. To sum up, the Indian infrastructure space has gained much importance in the past few years, and provides immense opportunities for growth and development.

Therefore, it is clear that there is substantial infrastructure needs in infrastructure sector in India, which, in other words, also offers large investment opportunities. Many of the new investments (such as gas pipelines) seem to be viable on commercial terms and should be suitable for partnership with private investors. For many other infrastructure investments also Public-Private-Partnership (PPP) is emerging as the preferred instrument, where the private sector gets its normal financial rates of return while the public sector partner provides concessional funding based on the long-term direct and indirect benefits to the economy. New instruments such as Viability Gap Funding (VGF) through a special purpose vehicle (SPV) set up recently by the Government of India to fund mega infrastructure projects may be relevant for other Asian countries as well.

4. GOVERNMENT POLICY ON INFRASTRUCTURE DEVELOPMENT: PUBLIC – PRIVATE PARTNERSHIP

India has created specialized institutions for long-term infrastructure financing and there are certainly many arguments for establishing a regional investment bank, similar to the line of India's IIFC. Viability Gap Financing (VGF) is likely to be successful instrument in managing much needed gaps in road development in developing Asia and LDCs where domestic resources are limited and suffer from capacity constraints. While this institution could certainly play an important role by tapping into global financial markets and channelling funds to infrastructure projects, their mere existence will not increase investment if the underlying obstacles precluding investor confidence are not addressed—as the shortage of viable projects for funding by the IDFC or IIFC illustrates.

4.1. Public Private Partnership (PPPs) in Infrastructure

Government is actively pursuing PPPs to bridge the infrastructure deficit in the country. Several initiatives have been taken during the last three years to promote PPPs in sectors like power, ports, highways, airports, tourism and urban infrastructure. Under the overall guidance of the Committee of Infrastructure headed by the Prime Minister, the PPP programme has been finalized and the implementation of the various schemes is being closely monitored by the constituent Ministries/Departments under this programme.

Indian experience shows that competition and PPPs can help in improving infrastructure.

The opening of the telecoms sector is a case in point. Opening up the sector has led to massive investments and expansion in supply coupled with improvement in quality. The target of 15 percent tele-density set for the year 2010 was realized in 2007. Further, the cost of service today is lower than that in any other country in the world. Similarly, competition in the aviation sector has resulted in the creation of new capacities and much greater choice for travelers. The annual growth in air traffic has been in excess of 20 percent and fares have dropped significantly. Even in the road sector, PPPs have demonstrated their efficacy wherever they have been used such as on the Jaipur-Kishengarh highway.

4.2. Viability Gap Funding in Infrastructure Projects in India

An investment of about US\$ 493 billion would be required in the infrastructure sector during the Eleventh Five Year Plan (2007-2011). These investments are to be achieved through a combination of public investment, PPPs and exclusive private investments, wherever feasible. According to the Government of India (2005), the Viability Gap Funding (VGF) or Grant means a grant one-time or deferred, provided under this Scheme with the objective of making a project commercially viable. The total VGF under the PPP scheme of the Government of India shall not exceed 20 percent of the total project cost; provided that the Government or statutory entity that owns the project may, if it so decides, provide additional grants out of its budget, but not exceeding a further 20 percent of the total project cost. The VGF is normally in the form of a capital grant at the stage of project construction. Proposals for any other form of assistance may be considered by the Empowered Committee and sanctioned with the approval of

Finance Minister on a case-by-case basis. The VGF up to Rs. 1 billion (about US\$ 25 million) for each project is sanctioned by the Empowered Institution (here through IIFC), subject to the budgetary ceilings indicated by the Finance Ministry. The Empowered Committee is also entitled to sanction VGF up to Rs. 2 billion, depending upon the project feasibility, and amounts exceeding Rs. 2 billion may be sanctioned by the Empowered Committee with the approval of Finance Minister.

5. INDIA'S OVERLAND CONNECTIVITY WITH EAST ASIA: SOME CROSS-BORDER INFRASTRUCTURE INITIATIVES

India attaches utmost importance towards development of connectivity with Southeast and East Asian countries. The importance of overland connectivity through cross-border transport corridors is not only for the trade, but it would also facilitate investments in infrastructure sector. It will also bring many rich rewards for bordering areas. Some of the recent initiatives linking India with ASEAN are as follows.

5.1. India – Myanmar-Thailand Trilateral Highway

India – Myanmar – Thailand Trilateral Highway (IMTTH) from Moreh (in India) to Mae Sot (in Thailand) through Bagan (in Myanmar) links India with Southeast Asia. The IMTTH is divided into three phases; the first phase includes 78 km of new roads, upgradation of about 400 km of roads, construction of all-weather approach lanes, rehabilitation/reconstruction of weak or distressed bridges and a detailed examination of a project on the Ayeyarwaddy river as well as a causeway. The entire project is being funded through government resources. Phase-I of the IMTTA has already taken up in

early 2005. India assumes responsibility of 78 km of missing links and 58 Km of upgradation as part of Phase-I. India may also take up additional 132 Km of upgradation. Thailand would take up upgradation of 136 km and 62 km sectors of Phase-I and another 100 km as part of Phase-II. Myanmar indicated willingness to take up intermediary approach roads, reconstruction/ rehabilitation of weak bridges. India has agreed to offer credit at concessional terms to Myanmar for financing new constructions from Chaungma-Yinmabin (30 km.) and Lingadaw-Letsegan-Pakokku (48 km.). India has also agreed to consider similar financing of the upgradation to two-lane standard of the Yinmabin-Pale-Lingadaw (50 km.) inside Myanmar. Further, India has agreed to consider, subject to internal approvals, financing of the upgradation of the Bagan-Meiktila (132 km.) segment in Myanmar. Indian has also agreed to undertake the preparation of a Detailed Project Report (DPR) for construction of a bridge on the Ayeyarwaddy river and for the causeways near Kyadet. Thailand has also agreed to extend concessional loans for financing the upgradation to two-lane standard of the Thaton-Hpa-an-Kawkaik section (136 km.) and Kawkaik-Myawaddy section (62 km.). The Thailand side also agreed to assist Myanmar in financing of the route Thaton-Mawlamyine-Mudon-Kawkaik as a second phase of the project. Myanmar has agreed to finance construction of all weather intermediate lane approach roads at both ends from Pakokku to Bagan up to the existing ferry crossing and the rehabilitation/reconstruction of only distressed and weak bridges. Myanmar has decided to explore the possibility of important commercial segments of the highway being constructed, operated and maintained by operators on a commercial basis.⁴

⁴ Sources: Ministry of External Affairs, Government of India, and De (2005)

5.2.India – Myanmar – Thailand – Vietnam Railway Cooperation: Delhi – Hanoi Railway Link

Railways can play a very positive role in integrating India with her eastern neighbours. Needs are two folds – (a) to link India's Manipur with India's main railway corridor, and (b) to re-establish and renovate railway networks in Myanmar. Harmonisation of railway track in the region is very much essential.⁵ Without having a compatible and strong railway system inside Myanmar and Bangladesh, closer communication between NER and its immediate neighbours will be unfulfilled. Indian government has come forward and extended US\$ 56 million credit line to the Myanmar government for upgradation of 640 km railway system between Mandalay and Yangon section.⁶ Similar initiative should be taken up for up-gradation of railway network system in southern (Yangon to Dawei) and northern (Mandalay to Kalay) Myanmar. A possible connection between Myanmar and Thailand could be via Thanbyuzayat and Three Pagoda Pass, and between India and Myanmar could be by constructing new railway line between Tamu and Kalay. On completion of these projects there could be possibilities for India – Myanmar – Thailand – Malaysia - Singapore rail link. On completion of these projects, there could be possibilities for India – Myanmar – Thailand – Malaysia - Singapore rail link, and finally a railway system that will connect Delhi with Hanoi.

⁵ Indian Railways is actively engaged in harmonization and construction of railway tracks in NER. Considering the projects already sanctioned and under construction, Diphu – Karong – Imphal - Moreh rail link (in Indian side) is identified for development which will link India with ASEAN. Although at present construction work is being carried out in Diphu – Karong section, linking Karong with Moreh via Imphal would link India with Thailand provided railway system in other side (Myanmar) is also developed simultaneously.

⁶ Source: Ministry of External Affairs, Govt. of India

6. CONCLUDING REMARKS

Provision of quality and efficient infrastructure services is essential to realize the full potential of the emerging Indian economy. Indian government's first priority is therefore rising to the challenge of maintaining and managing high growth through investment in infrastructure sector, among others. To sustain 9 percent growth, the Government of India has estimated that an investment of over US\$ 492.5 billion during the 11th Five Year Plan (2007-2012) is required. Therefore, there is substantial infrastructure needs in infrastructure sector in India, which, in other words, also offers large investment opportunities. Public-Private-Partnership (PPP) is emerging as the preferred instrument, where the private sector gets its normal financial rates of return while the public sector partner provides concessional funding based on the long-term direct and indirect benefits to the economy. New instruments such as Viability Gap Funding (VGF) through a special purpose vehicle (SPV) set up recently by the Government of India to fund mega infrastructure projects may be relevant for other Asian countries as well.

The cross-border infrastructure component is an important determinant of regional integration. If countries are not inter-linked each other through improved transportation network, regional integration process will not move ahead at a desired pace. In India, development of cross-border infrastructure, especially transportation linkages and energy pipelines with neighbouring countries is underway and expected to contribute to the regional integration in Asia by reducing transportation costs and facilitating intra-regional trade and services. Nevertheless, there are many challenges. It is

important for India to enhance its overland connectivity with East Asia in order to effectively facilitate the Asian regional integration.

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