Infrastructure Development in India: Challenges and Opportunities

- Gajendra Haldea

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Lagos, Nigeria
Infrastructure Deficit

Power
- 13.3% peaking deficit and 10.1% energy shortage; 27% T&D losses; absence of competition; and inadequate private investment

Highways
- 70,934 Km of NH (2% of network, 40% of traffic): only 20% Four-lane; 50% Two-lane; and 30% Single-lane; State highways also suffer from prolonged neglect

Ports
- Inadequate berths, rail / road connectivity and draft are constraints

Airports
- Inadequate capacity: Runways, aircraft handling capacity, parking space & terminal buildings

Railways
- Old technology; saturated routes: slow average speeds (freight: 22 kmph; passengers: 50 kmph); low payload to Tare ratio (2.5)
Investment in Infrastructure: 11th Plan

XI Plan (2007-12):
Anticipated: (Rs. 18,44,153 cr.)
$ 461 bn

X Plan (2002-07):
Actual: (Rs. 8,46,186 cr.)
$ 212 bn
Investment in Infrastructure as % of GDP
(10th and 11th Five Year Plans)

Provisional Figures for 2010-12
Growth of Private Investment
(10th and 11th Five Year Plans)

Provisional Figures for 2010-12
(At 2006-07 prices)

Rs. 204,751
($ 51.19 bn)

Rs. 172,516
($ 43.13 bn)

Rs. 125,693
($ 31.42 bn)

Rs. 44,704
($ 11.18 bn)

Rs. 26,134
($ 6.53 bn)

Rs. 16,934
($ 4.23 bn)

Rs. Crore
Relative Share of Private Investment
(10th and 11th Five Year Plans)

- Public
- Private

Per cent share

Provisional Figures for 2010-12
Share of Private Investment in different Sectors
(10th and 11th Five Year Plans)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Per cent share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>37</td>
</tr>
<tr>
<td>Telecom</td>
<td>83</td>
</tr>
<tr>
<td>National Highways</td>
<td>42</td>
</tr>
<tr>
<td>Railways</td>
<td>4</td>
</tr>
<tr>
<td>Ports</td>
<td>85</td>
</tr>
<tr>
<td>Airports</td>
<td>60</td>
</tr>
</tbody>
</table>
Projected Investment in Infrastructure: 12th Plan

- **XI Plan Anticipated**
- **XII Plan Projected**

**XI Plan:**
Anticipated: Rs.18,44,153 cr.)
$ 461 bn

**XII Plan:**
Projected: (Rs.40,15,225 cr.)
$ 1,004 bn
Methodology of Projections

Using 2011-12 as the base year, the following annual growth rates have been assumed for Twelfth Plan period.

- **Central Sector:** 9% in all sectors
- **State Sector:** 9% in electricity, roads, railways, irrigation, water supply & sanitation. 5% in ports, airports and storage
- **Private Sector:** 25% in all sectors

Growth rates have been assumed on the basis of past trends and perceived sectoral dynamics in the Plan period.
## Sectoral break-up of Projected Investment: 12th Plan

*(at 2006-07 prices)*

<table>
<thead>
<tr>
<th>Sectors</th>
<th>XI Plan</th>
<th>XII Plan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rs. crore (US$ bn)</td>
<td>Share (%)</td>
<td>Rs. crore (US$ bn)</td>
</tr>
<tr>
<td>Electricity (incl. NCE)</td>
<td>5,25,658 (131)</td>
<td>28.5</td>
<td>1,289,946 (322)</td>
</tr>
<tr>
<td>Roads and Bridges</td>
<td>2,64,464 (66)</td>
<td>14.3</td>
<td>500,977 (125)</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>4,34,488 (109)</td>
<td>23.6</td>
<td>1,095,550 (274)</td>
</tr>
<tr>
<td>Railways (incl. MRTS)</td>
<td>1,91,384 (48)</td>
<td>10.4</td>
<td>320,361 (80)</td>
</tr>
<tr>
<td>Irrigation (incl. Watershed)</td>
<td>2,01,615 (50)</td>
<td>10.9</td>
<td>387,808 (97)</td>
</tr>
<tr>
<td>Water Supply &amp; Sanitation</td>
<td>1,03,446 (26)</td>
<td>5.6</td>
<td>173,730 (43)</td>
</tr>
<tr>
<td>Ports</td>
<td>43,405 (11)</td>
<td>2.4</td>
<td>63,452 (16)</td>
</tr>
<tr>
<td>Airports</td>
<td>27,811 (7)</td>
<td>1.5</td>
<td>65,656 (16)</td>
</tr>
<tr>
<td>Storage</td>
<td>8,919 (2)</td>
<td>0.5</td>
<td>29,376 (7)</td>
</tr>
<tr>
<td>Oil &amp; Gas Pipelines</td>
<td>42,963 (11)</td>
<td>2.3</td>
<td>258,482 (65)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18,44,153 (461)</strong></td>
<td><strong>100</strong></td>
<td><strong>4,185,338 (1046)</strong></td>
</tr>
</tbody>
</table>
Relative Share of Private Investment: 12th Plan

- **Public**
- **Private**

<table>
<thead>
<tr>
<th>Year</th>
<th>Public</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td></td>
<td>40.00</td>
</tr>
<tr>
<td>2013-14</td>
<td>50.00</td>
<td>55.00</td>
</tr>
<tr>
<td>2014-15</td>
<td>50.00</td>
<td>50.00</td>
</tr>
<tr>
<td>2015-16</td>
<td>50.00</td>
<td>55.00</td>
</tr>
<tr>
<td>2016-17</td>
<td>50.00</td>
<td>60.00</td>
</tr>
</tbody>
</table>
## Investment by Centre, States & Private Sector

(Rs. crore at 2006-07 prices)
(per cent share in brackets)

<table>
<thead>
<tr>
<th></th>
<th>Tenth Plan</th>
<th>Eleventh Plan</th>
<th>Twelfth Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre</td>
<td>3,70,543</td>
<td>6,03,510</td>
<td>10,84,111</td>
</tr>
<tr>
<td></td>
<td>(44)</td>
<td>(33)</td>
<td>(27)</td>
</tr>
<tr>
<td>States</td>
<td>3,28,485</td>
<td>5,53,377</td>
<td>9,23,502</td>
</tr>
<tr>
<td></td>
<td>(39)</td>
<td>(30)</td>
<td>(23)</td>
</tr>
<tr>
<td>Private</td>
<td>1,47,158</td>
<td>6,87,266</td>
<td>20,07,613</td>
</tr>
<tr>
<td></td>
<td>(17)</td>
<td>(37)</td>
<td>(50)</td>
</tr>
<tr>
<td>Total</td>
<td>8,46,186</td>
<td>18,44,153</td>
<td>40,15,225</td>
</tr>
</tbody>
</table>
Policy Challenges

- Challenges for large capacity addition
  - Time-bound delivery under **budgetary constraints**
  - World class yet **cost effective**
  - Commercially sustainable yet **affordable**

- Policy responses for attracting private investment
  - Policy and regulatory **framework** for PPPs is in place
  - **Institutional restructuring** and reorientation underway
  - **Financial support** to bridge viability gap of PPP projects
  - IIFCL, Infrastructure Debt Funds etc. for **long term debt**
Division of Labour

- **Public Sector to continue, and even expand**
  - Especially in segments that can’t be commercialised, such as rural roads
  - Expected CAGR of budgetary allocations: about 9% in real terms

- **Increased reliance on PPPs for additionality & improved efficiency**
  - In segments that can be commercialised, eg. highways, ports, airports & rail concessions
  - Much of additional investment through PPPs

- **Independent private investment wherever feasible**
  - Telecom, power generation/supply, container trains etc.
Stages of PPPs

I. Public sector provision of Infrastructure: **Command & Control**
   - PPP by exception

II. Introduction of PPPs: **The Transition** - still on in some sectors/states
   - Largely negotiated; characterised by rent-seeking
   - Driven by private beneficiaries (e.g. Dabhol, NOIDA bridge)

III. PPPs gain acceptability: **Enhancing welfare & efficiency**
   - Transparent, competitive and fair
   - Driven by the government; good governance becomes the key
   - Objective is to attract private capital in public projects

- **Indian PPP projects are mostly in Stage III**
Paradigm Shift

- Successful reform initiatives have universally relied on:
  - leadership from head of government
  - creation of inter-ministerial and inter-disciplinary processes for overcoming incumbent pressures and perceptions

- Infrastructure reforms in India have been led and by CoI/CCI

- PPP has gained wide ownership and support across the government. A paradigm shift has occurred.
Financial Support to PPPs

- Viability Gap Funding (VGF) upto 20% of capital costs based on competitive bidding; another 20% VGF by project authority.

- 324 central and state projects with an investment of Rs. 2,51,298 cr. (US$ 63 bn) cleared with a possible VGF commitment of Rs. 50,000 cr. (US$ 12.5 bn).

- India Infrastructure Finance Company (IIFCL) provides upto 20% of capital costs as long-term debt for viable projects.

- IIFCL has sanctioned Rs. 27,572 cr. (US$ 7 bn) for 189 projects.
Financing Constraints

- **Competing demands** on budgetary resources: health, education, rural development, livelihood support programmes etc.

- **Budgetary allocation cannot be increased beyond 9% p.a. in real terms**; reliance on private investment is inevitable

- **Private equity** not viewed as a constraint; markets have responded well

- **Possible debt gap of $ 100 bn in the 12th Plan**; policy responses under way
Issues in Financing by Banks

- **Excessive reliance** on commercial banks (51%); exposure up from **1.8% of their lending in FY 2001 to 10.2% in FY 2009; CAGR of 40%**

- **Tenure** of loans is inadequate as their deposits are short term

- **Asset-liability mismatch (ALM)** is a serious issue

- Shorter tenures **raises costs/user charges**

- Banks are **exhausting their prudential limits** in terms of sector, borrower and project exposures
Lack of Long-term debt

- **Insurance and pension funds** have stayed away owing to their risk perceptions
- **Bond markets** in India continue to be shallow
- **IIFCL** was set up for providing long-term debt; a partial success
- **NBFC’s** provide 27% of debt but not for long tenures
- **ECB** also provides limited tenures
- **Tenure of debt is a critical issue in financing infrastructure**
Long-term debt: Policy Responses

- Setting up **Infrastructure Debt Funds** to channelise long-term insurance & pension funds through credit enhancement
- Introduction of **tax-free Infrastructure Bonds**
- **Take-out financing** scheme introduced by IIFCL
- **High-level Committee** set up to recommend policy initiatives for financing the $1 trillion investment in 12th Plan
Telecom: A spectacular success story

- Private investment increased from Rs. 5,936 cr. (US$ 1.5 bn) in 2002-03 to Rs. 51,019 cr. (US$ 12.8) in 2009-10 (8.6 times)
- Share of private investment increased from 28% in 2002-03 to 80% in 2009-10; CAGR of 36% during this period
- Target of 15% tele-density by 2010 achieved 3 years ahead of schedule
- Over 10 million mobile connections added every month; total of 860 million by August 2011
- Lowest tariffs in the world
- Competition and access to consumers was the driving force
Power: Constrained growth

- T&D losses exceed 27%; provisional losses of Rs. 60,000 cr. (US$ 15 bn) in 2010-11; 13% peak shortage & 10% energy shortage

- Utilities bought 600 cr units from traders at an average price of Rs. 5.5 per unit (Rs. 33,000 cr in 09-10) - highest tariff in the world

- Traded power purchased solely by state-owned utilities; unregulated trading has increased utility losses sharply

- CAGR of private investment 23% between 2002-03 and 2009-10

- Absence of competition and access to consumers seems the principal cause for inadequate investment and shortages.
Governance: Typical Issues

- Unwillingness of **incumbents** to cede control over construction & operation of projects
- Denial of **level playing field** is an issue
- **Rent-seeking** is also an issue
- Inadequate and inefficient **roll out** of projects
  - The demand for PPP projects is far greater than their supply
- Incumbent **mindset** constitutes a major challenge
Governance Structure for PPPs

- **Constitution of a Cabinet Committee on Infrastructure (CCI)**
  - Prime Minister is the Chairperson
  - Ministers of Infrastructure Ministries, Finance Minister and Deputy Chairman, Planning Commission are members

- **PPP Appraisal Committee**
  - Appraises & recommends all PPP projects of the Central Government
  - Chaired by Finance; appraisal by Planning Commission
  - Cleared **242 projects** with an investment of **Rs. 2,01,725 cr. (US$ 50 bn)**

- **Empowered Committee**
  - Approves proposals of State Governments for Viability Gap Funding
  - Chaired by Finance; appraisal by Planning Commission
  - Cleared **82 projects** with an investment of **Rs. 49,573 cr. (US$ 12 bn)**
Governance Structure for PPPs (contd.)

- PPPs have been integrated in the planning process

- Ministries retain their role but **work closely** with CCI to develop & implement the vision for world-class infrastructure

- Greater reliance on inter-ministerial and **inter-disciplinary dialogue** to enrich outcomes and eliminate conflicts of interest.

- **Consultations** with stakeholders, including users and investors

- **Simplification & standardisation of documents & processes**
Typical documents for PPP projects

- **Substantive Documents**
  - Concession Agreements
  - Manual of Specifications & Standards
  - Rules for user charges

- **Process Documents**
  - RFQ for pre-qualification of bidders
  - RFP for financial bids
  - RFP for selection of consultants
Model RFQ/RFP

- In the past, divergent practices have led to sub-optimal outcomes, entailing legal and financial complications

- **Fair and transparent pre-qualification** and bidding is a **pre-requisite** for competitive and efficient PPPs

- Model RFQ/RFP establish **generic guidelines**; provide requisite sector-specific & project-specific **flexibility**

- Accelerate and **streamline** decision-making; the matrix is **simplified, quantitative and transparent**
Model RFQ/RFP (contd.)

- The evaluation criteria is divided into:
  - **Technical Capability**: based on project experience
  - **Financial Capacity**: based on the minimum net worth required

- Detailed terms are specified in the **Concession Agreement** which forms part of the RFP

- **Feasibility Report** is provided for assistance; bidders expected to do their own due diligence

- Financial bid based on a **single pre-determined parameter**
Model Concession Agreement (MCA)

- Enables limited recourse **financing**

- Mitigates **risks** and allocates these to parties best suited to manage them
  - Concessionaire’s risks include construction, operation & traffic
  - Government’s risks include political force majeure, changes in scope, specifications or law

- Specifies enforceable **Performance Standards**
MCA (contd.)

- Safeguards the public **exchequer & user interests**
- Ensures **predictability** of costs, revenues and obligations
- Reduces **transaction costs and time**
- Relies on **output specifications** and service quality
- Ensures **financial close** in 180 days
- Provides for **dispute resolution**, force majeure and termination
Framework Documents

Model Concession Agreements published for PPP in:

- National Highways
- State Highways
- Ports
- Operation & Maintenance of Highways
- Urban Rail Systems (Metro rail)
- Container Train Operation
- Redevelopment of Railway Stations
- Non-metro Airports
- Greenfield Airports
- Procurement-cum-Maintenance of Locomotives
- Transmission of electricity
Framework Documents (contd.)

Model Bidding Documents for PPP projects

- Request for Qualification Document (RFQ) for pre-qualification of bidders
- Request for Proposal (RFP) for selection of bidder
- RFP for Selection of Technical Consultants
- RFP for Selection of Legal Advisors
- RFP for Selection of Financial Consultants

Guidelines for Appraisal, Approval and Assistance for PPP projects

- Guidelines for Financial Support to PPPs in Infrastructure (VGF Scheme)
- Guidelines for Appraisal and Approval of PPP Projects (PPPAC)
- Scheme for Financing through India Infrastructure Finance Co. (IIFCL)
- Guidelines for establishing Joint Ventures (JVs) in Infrastructure
Some illustrative PPP projects

- Jaipur-Kishengarh **Highway**
- Delhi, Mumbai, Hyderabad & Bangalore **Airports**
- Two **metro-rail** projects in Mumbai and one in Hyderabad
- **182 National Highway projects** (14,441 km) for Rs.1,23,590 cr
- **137 State Highway projects** (8,862 km) for Rs. 64,787 cr
- **22 central sector port terminals** for Rs. 18,489 cr and 57 state sector port terminals for Rs. 71,253 cr
- Four **Ultra mega Power** Projects: Sasan(MP), Mundra (Gujarat), Krishnapatnam (AP) and Tilaiya (Jharkhand)
- **Container terminals** at JNPT, Chennai & Tuticorin
- 15 concessions for operation of **container trains**
- Jhajjar Power **Transmission** Project, Haryana
Initiatives at State level

- States have initiated several PPP projects

- State PPP projects are availing up to 20% of capital costs as VGF grant from Central Government

- They are also availing up to 20% of capital costs as long-term loans from IIFCL

- **Technical assistance** being provided by Planning Commission

- **Assistance for capacity building** being provided by the Finance Ministry
Way forward

- **Create** the enabling environment for private investment
- **Adopt** standardised documents for accelerating investment flows & for ensuring **safe and competitive** delivery
- **Leverage** budgetary resources & multi-lateral loans for PPPs
- Accelerate the **roll-out** of PPP projects
- Enhance the flow of **long-term debt** to infrastructure sector
- Objective is to create **world class infrastructure**
Thank You

For further details please visit
http://infrastructure.gov.in