INDIA TRANSPORT

December 2018
“WHY”
Transport Sector is RELEVANT
INDIA v/s. Global Trends
Transport Bottlenecks

INDIA’S TRADE COMPETITIVENESS

- Total annual transport volume 4.6 billion tonnes
- Total annual transport throughput 2.4 trillion tkm
- Average haulage Distance about 500 Km
- Average haulage distance for EXIM cargo 750 Km vs. 250 Km in China

GDP in some of the developed countries - $15 to $25 per tonne-km
GDP in INDIA - $1 per tonne-km
Dominant Freight Flows on 7 Corridors

69% of the flow is between major cities on these 7 corridors.

75% of the 4 billion ton of freight movement in India is domestic;

Transport and corridor efficiency is therefore critically important for domestic market as well.

CHALLENGE
Development of auxiliary corridors and last mile connectivity remain a major challenge.
Heavy Reliance on Single Transport Mode

Modal Share of Freight

<table>
<thead>
<tr>
<th>Country</th>
<th>Road</th>
<th>Rail</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>39%</td>
<td>23%</td>
<td>37%</td>
</tr>
<tr>
<td>Germany</td>
<td>64%</td>
<td>23%</td>
<td>11%</td>
</tr>
<tr>
<td>USA</td>
<td>58%</td>
<td>38%</td>
<td>4%</td>
</tr>
<tr>
<td>India</td>
<td>71%</td>
<td>28%</td>
<td>1%</td>
</tr>
</tbody>
</table>
Declining Public Transport Share in Indian Cities

• Increasing dependence on personal modes leading to
  • Congestion;
  • Air Pollution;
  • GHG Emissions;
  • Limiting access to opportunities for women.

The Bus Funding Scheme of GoI
• limited in impact owing to the absence of a continuing funding source
• limited state/city capacities;

Source:-- Study on Traffic & Transportation, MoUD, 2007; India Urban Mobility Model
• Only 8% of Urban roads have walkable Footpath;
• Vulnerable Road Users (pedestrian + cyclists) constitute 40% of road fatalities;
• 14 of top 20 most polluted cities in the World are in India;
• Vehicular emissions constitute 9-25% of PM2.5.
- CO₂ emissions in 2050 is expected to be nearly **EIGHT** times the 2010 level.

- The CO₂ efficiency depends on the transport systems

- Larger cities emit much more due to the prevalence of cars

<table>
<thead>
<tr>
<th>City Tier</th>
<th>% of Total Pop. 2010</th>
<th>% of Total Pop. 2050</th>
<th>% of Total CO₂ 2010</th>
<th>% of Total CO₂ 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>35%</td>
<td>31%</td>
<td>56%</td>
<td>48%</td>
</tr>
<tr>
<td>II</td>
<td>12%</td>
<td>12%</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>III</td>
<td>36%</td>
<td>38%</td>
<td>25%</td>
<td>32%</td>
</tr>
<tr>
<td>IV</td>
<td>17%</td>
<td>19%</td>
<td>10%</td>
<td>9%</td>
</tr>
</tbody>
</table>

- This effect decreases over time, with cities from Tier III catching up especially
Sustainability, Inclusivity & Negative Externality

**CHALLENGES**

### Road Safety
India has the highest road fatality in the world with 10% global share, some 150,000 people die every year due to road accidents in India (40% in urban areas)

### Climate Change
- India is 4th largest emitter of GHG,
- Transport sector emissions are about 8% (against global average of 23%), emissions from transport sector are one of the fastest growing, Delhi is the most polluted city in SAR
- 14 out of the most 20 polluted cities in the World are in India

### Efficiency / Asset Management
- Poor maintenance of only road assets costs are estimated at $38 billion per annum.
- Insufficient institutions to streamline efficient planning and implementation of asset policy

### Gender
Women’s labour force participation is consistently low in urban areas and fast declining in rural areas (as low as 9% in Bihar); secure and affordable transport services has a significant role to play in correcting this situation
### Rural Roads
**Increased access to economic opportunities**

**Mobility:**
- Market reach for food grains increased by 5-7 Kms

**Employment:**
- 5.5% increase in employment including increased workforce share of women

**Education:**
- Middle and high school students gain an additional 0.7 years of schooling.

**Health:**
- Home delivery of babies decreases by 30 percent.
- Vaccination of children under 4 years of age increase by 21 percent.

**Agriculture:**
- 200% increase in the share of crops transported to markets for sale
NHs with SHs are Critical for the Economy

The States which are also implementing complementary SH programs are the ones with increased per capita incomes.
The Engagement Framework

- Institutions
- Policy
- Green & Resilience
- Infrastructure
- Regional Integration
- Services
- Gender & Safety
- Access
- Efficiency
- Inclusion
Main orientations for WB support to India’s transport

**Rural Connectivity**
- Replication of a sustainable delivery model
- Resilient infrastructure
- Sustainable asset management model

- Rural transport services and integration of gender
- Focus on specific climatic areas - selectivity and prioritization

- Rural and state highway integration through state highway and rural road projects in the same geography

**Urban Mobility & Urban/Intercity Interface**
- Green, sustainable, safe, gender inclusive urban transport model for Indian cities with stronger institutions
- High level policy and program dialogue on sector issues – National + State

- Focus on Mid sized cities (SUTP & ESCBS) via National Schemes
- Selective Metropolitan (Mumbai) and state specific solutions via State engagements

- National Scheme – MoHUA/ MoRTH
- Intercity/city interface: NHIIP2
- Bus Service Delivery Model: ESCBS/ RAS
- State projects – Explore links with Road/SURR/ENV engagements

**Sustainable Economic Integration**
- Promote logistics and connectivity agenda through:
  - development of corridors, multi-modal integration and logistic nodes (Railways/ Highways/ Waterways)

- Ensure wider economic benefits through improved first-last mile connectivity
  - (Integration of National/State highway/rural roads )

- Actively promote MFD agenda through both infrastructure and operations route

- Climate Mitigation and Resilience Strategies
  - (greener modes and operation, resource efficiency)
“HOW”

Strategies will be APPLIED
Guiding Principles

- Moving towards a greener & more balanced transport matrix;
- Strengthening institutions to deliver national agenda;
- Integration of modes and infrastructure and operations /services;
- Mainstreaming corporate priorities through PDO and specific components;
- Resource efficiency and opening fiscal spaces;
- Continuing partnership with other donors, IFC & other GPs (urban, Env, MTI, FCI etc.);
- Maximize synergy among concurrent transport interventions.

Loan Instruments
- MPA
- DLI Based IPF/P4R
- TA Loans
- RAS

Green Mobility
- Trans. Serv. Efficiency
- Urban Freight Management
- Financing needs for Sector & Private Sector Operations
- Construction Industry
- Impact Evaluation
Road Sector Evolution

Pre-2000
- Foundation Building
- Construction Focus

2000-2010
- Delivery of infrastructure
- Institutional Strengthening
- Maintenance
- Use of private sector capacities

2010-2017
- Design Innovations
- EPC Contracts
- Asset Management (AM)
- Road Safety
- Road Sector Modernization
- Mobilizing Private Finance

Future Generation
- Creation of sustainable and autonomous sector institution to improve access to market finance, Leverage Central Road Funds
- Network Master Plans and Economic Corridors
- Integrated Transport Systems approach including transport services, logistics, Green & Resilient Transport etc.
Railways Sector Evolution

**Previous Generation**
- Improving suburban rail system in partnership with city

**Current Generation**
- Sharing International best practices in rail sector
- Policy reforms
- Private freight train flow on track access charge basis
- Corridor approach
- Innovation in design and project management
- EPC Contracts

**Future Generation**
- Continue to be the knowledge partner of IR for sector reforms
- New SPV for suburban rail service delivery for Mumbai and model for other cities to follow
- Opening freight and intercity passenger market for private players
- Holistic approach for transport and logistic solutions
Urban Transport Sector Evolution

Previous Generation
- Metropolis Engagement
- Focus on road capacity & Public Transport augmentation
- Large Scale Resettlement

Current Generation
- Metropolis + Mid Sized City demonstrations
- Introduction of international good practices – BRTS, TOD, ITS, PBS, Rail Safety
- Focus on stronger delivery institutions
- Emphasis on capacity development
- Large scale resettlement

Future Generation
- Metropolis + Mid-Sized City
- Creation of stronger institutions for planning and implementation
- MFD-Climate-Gender-Safety
- Enhanced comprehensive solutions and integration focus
Inland Waterways Sector Evolution

Current Generation

• Combining Infrastructure and operations, exploring MFD options in operations
• Environmental Sustainability, climate mitigation and adaptation
• Backbone for regional integration
• Multi-modal integration
• Initial freight focus, extended to passenger / access

Future Generation

• Basin level focus by adding tributaries to achieve network effect
• Creation of institutions for management of fixed and floating assets
• MFD – from operations to operations + infra
• Wider Economic benefit through enhanced last mile and integration focus
Thank you
# India Active Portfolio – FY19

## Active Portfolio - As on FY19

<table>
<thead>
<tr>
<th>Sub-sector</th>
<th>Project Name</th>
<th>Net Comm Amt ($m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highways</td>
<td>IN: Assam State Roads Project</td>
<td>320.00</td>
</tr>
<tr>
<td></td>
<td>IN: AP and Telangana Road Sector Project</td>
<td>239.00</td>
</tr>
<tr>
<td></td>
<td>IN: Karnataka State Highway Improv Pro II</td>
<td>350.00</td>
</tr>
<tr>
<td></td>
<td>Second Gujarat State Highway Project</td>
<td>175.00</td>
</tr>
<tr>
<td></td>
<td>IN: Kerala State Transport Project II</td>
<td>216.00</td>
</tr>
<tr>
<td></td>
<td>IN: TN Roads II</td>
<td>300.00</td>
</tr>
<tr>
<td></td>
<td>Mizoram State Roads II- Reg Connectivity</td>
<td>107.00</td>
</tr>
<tr>
<td></td>
<td>Natl Highways Inter-Conn</td>
<td>500.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>2,207.00</strong></td>
</tr>
<tr>
<td>Rural Roads</td>
<td>IN: PMGSY Rural Roads Project</td>
<td>500.00</td>
</tr>
<tr>
<td></td>
<td>IN: Rajasthan Road Sector Modernization</td>
<td>160.00</td>
</tr>
<tr>
<td></td>
<td>IN: Bihar Rural Roads Project</td>
<td>235.00</td>
</tr>
<tr>
<td></td>
<td>IN: MP Rural Connectivity Project</td>
<td>210.00</td>
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<tr>
<td></td>
<td></td>
<td><strong>1,105.00</strong></td>
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<tr>
<td>Railways</td>
<td>IN: Eastern Dedicated Freight Corridor-I</td>
<td>800.00</td>
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<tr>
<td></td>
<td>IN: Eastern Ded Freight Corridor II</td>
<td>910.00</td>
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<tr>
<td></td>
<td>P150158-IN: EDFC-3</td>
<td>650.00</td>
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<tr>
<td></td>
<td></td>
<td><strong>2,360.00</strong></td>
</tr>
<tr>
<td>Waterways</td>
<td>National Waterway-1 (CANW1)</td>
<td>375.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>375.00</strong></td>
</tr>
<tr>
<td>Urban Transport</td>
<td>Efficient &amp; Sustainable City Bus Service</td>
<td>9.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>9.20</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>6,056.20</strong></td>
</tr>
</tbody>
</table>

### Sub-sector % share

- Highways: 36.4%
- Rural Roads: 18.2%
- Railways: 6.2%
- Waterways: 0.2%
- Urban Transport: 39.0%

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Active Portfolio (%)
## Lending Pipeline – US$ 2 bn

### FY19 Lending

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Net Comm Amt ($m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highways</td>
<td></td>
</tr>
<tr>
<td>UP Core Road Network Development Project</td>
<td>400.00</td>
</tr>
<tr>
<td>Rajasthan State Highways Development Program II</td>
<td>250.00</td>
</tr>
<tr>
<td></td>
<td>650.00</td>
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</tbody>
</table>

### FY20 Lending

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Net Comm Amt ($m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highways</td>
<td></td>
</tr>
<tr>
<td>Himachal Pradesh State Roads Transformation Program</td>
<td>151.00</td>
</tr>
<tr>
<td>Green National Highways Corridor Project</td>
<td>500.00</td>
</tr>
<tr>
<td></td>
<td>651.00</td>
</tr>
</tbody>
</table>

| Waterways |                  |
| Assam Inland Water Transport Project | 120.00 |

| Urban Transport |                  |
| Mumbai Urban Transport Project 3 | 500.00 |

| Integrated Transport |                  |
| Meghalaya Integrated Transport Project | 120.00 |

### FY21 Lending

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Net Comm Amt ($m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated Transport</td>
<td></td>
</tr>
<tr>
<td>Meghalaya Integrated Transport Project</td>
<td>120.00</td>
</tr>
</tbody>
</table>

### Lending Portfolio Spread FY19 - FY21

- **Highways**: 64%
- **Waterways**: 6%
- **Urban Transport**: 24%
- **Integrated Transport**: 6%

**Lending Pipeline – US$ 2 bn**

**Lending Portfolio Spread**

- **FY19**: 64%
- **FY20**: 6%
- **FY21**: 24%
- **Total**: 94%

**Lending Pipeline – US$ 2 bn**
**Components**

- Road Construction / Connectivity / Civil works
- Road Sector Modernization
- Road Safety Management

**Type of Contract**

- Item Rate, EPC, OPRC, PBMC, DBFOMT
- RAMS, PMC, Computerization consultancy services
- iRAP Surveys, Road Safety Audit, Safe Corridor Demo

**Contract value range ($m)**

- 3.5 to 145.0
- 1.0 to 5.0
- 1.0 to 20.0
## Rural Roads – Contract Types

<table>
<thead>
<tr>
<th>Components</th>
<th>Type of Contract</th>
<th>Contract value range ($m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Construction / Connectivity / Civil works</td>
<td>Standard Item Rate</td>
<td>0.08 to 2.0</td>
</tr>
<tr>
<td>Institutional Development</td>
<td>PMC, Computerization</td>
<td>0.7 to 2.5</td>
</tr>
<tr>
<td>Road Sector Modernization</td>
<td>RAMS, Citizen Monitoring</td>
<td>0.7 to 2.5</td>
</tr>
<tr>
<td>Road Safety Management</td>
<td>Demo Corridors</td>
<td>1.0 to 2.0</td>
</tr>
</tbody>
</table>
Components

- Design, Construction & Commissioning of tracks
- Institutional Development/Strengthening

Type of Contract

- Design-Build for Track Laying, Signaling, Telecommunication
- Capacity Building of DFCCIL & MOR

Contract value range ($m)

- 69.0 to 440.0
- 2.0 to 10.0
<table>
<thead>
<tr>
<th>Components</th>
<th>Type of Contract</th>
<th>Contract value range ($m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving Navigability (Dredging) and Construction of Multi-modal terminals</td>
<td>PBMC, EPC</td>
<td>25.0 to 75.0</td>
</tr>
<tr>
<td>Institutional Development/Strengthening</td>
<td>Capacity Building</td>
<td>0.5 to 5.0</td>
</tr>
</tbody>
</table>