



# INDIA: Evaluating Bank Assistance for Transport Sector Development in the 1990s

A Country Assistance Evaluation

Hernan Levy

---

Director-General, Operations Evaluation: Robert Picciotto  
Director: Gregory Ingram  
Manager: Ruben Lamdany  
Task Manager: Gianni Zanini

The author is a Transport Economics and Management Consultant and former Principal Evaluation Officer in the OED Sector and Thematic Evaluation Division (OEDST). This paper is available upon request from OED.

2002  
The World Bank  
Washington, D. C.



## OPERATIONS EVALUATION DEPARTMENT

### ***ENHANCING DEVELOPMENT EFFECTIVENESS THROUGH EXCELLENCE AND INDEPENDENCE IN EVALUATION***

*The Operations Evaluation Department (OED) is an independent unit within the World Bank; it reports directly to the Bank's Board of Executive Directors. OED assesses what works, and what does not; how a borrower plans to run and maintain a project; and the lasting contribution of the Bank to a country's overall development. The goals of evaluation are to learn from experience, to provide an objective basis for assessing the results of the Bank's work, and to provide accountability in the achievement of its objectives. It also improves Bank work by identifying and disseminating the lessons learned from experience and by framing recommendations drawn from evaluation findings.*

OED Working Papers are an informal series to disseminate the findings of work in progress to encourage the exchange of ideas about development effectiveness through evaluation.

The findings, interpretations, and conclusions expressed here are those of the author(s) and do not necessarily reflect the views of the Board of Executive Directors of the World Bank or the governments they represent.

The World Bank cannot guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply on the part of the World Bank any judgment of the legal status of any territory or the endorsement or acceptance of such boundaries.

#### Contact:

Operations Evaluation Department  
Partnerships & Knowledge Programs (OEDPK)  
email: [ecampbellpage@worldbank.org](mailto:ecampbellpage@worldbank.org)  
email: [eline@worldbank.org](mailto:eline@worldbank.org)  
Telephone: 202-458-4497  
Facsimile: 202-522-3125  
<http://www.worldbank.org/oed>

## Acronyms

CAE	Country Assistance Evaluation
CAS	Country Assistance Strategy
GOI	Government of India
ICB	International competitive bidding
ID	Institutional development
IR	Indian Railways
MOST	Ministry of Surface Transport
NHAI	National Highways Authority of India
NHS	National Highway System
OED	Operations Evaluation Department
PWD	Public Works Department
QAG	Quality Assurance Group

# Contents

<b>Preface</b> .....	i
<b>Executive Summary</b> .....	iii
<b>1. Sector Performance and Challenges</b> .....	1
<b>2. Relevance of Bank Transport Assistance</b> .....	2
Sector Work.....	5
<b>3. Implementation and Impact of Bank Assistance</b> .....	7
All Projects Approved Since 1980.....	7
Projects Closed or Underway During 1994-99 .....	7
<b>4. Overall Evaluation of Transport Sector Assistance</b> .....	8
<b>5. Lessons and Agenda for Future Development</b> .....	9

## Annexes

1. India Transport Sector: Performance of Bank Portfolio	
I. Completed Projects.....	12
II. Ongoing Projects.....	12
2. Summary of Discussions at CAE Workshop on Transport.....	14

## **Preface**

This paper is one of the background papers prepared as an input to the India Country Assistance Evaluation (Task Manager: Mr. Gianni Zanini) by the Operations Evaluation Department (OED) of the World Bank. Findings are based on a review of project appraisal and completion reports, sector reports, and a number of other documents produced by the Borrower, the Bank, OED, and research papers. The main focus of this paper is Bank operations completed or ongoing in the 1990s, which did not include any urban transport project. An OED transport mission visited India in January-February 1999, in connection with this study and with the preparation of performance audits of two transport projects. The mission interviewed current and former Indian government officials, and senior staff of the Asian Institute of Transport Development. Bank staff were interviewed at both headquarters and in the field office. Their valuable assistance is gratefully acknowledged.

An earlier version of this paper was reviewed by the Bank's India transport team, by the Department of Road, Transport and Highways in the Ministry of Surface Transport, and by the National Highways Authority of India. It was also discussed at a workshop in New Delhi on March 30, 2000, chaired by Dr. K.L. Thapar and with the participation of central and state government officials, academics and members of policy research institutes, and other representatives of civil society.

The author is grateful for all comments received, which have been taken into account in this revised version. However, the views expressed in this paper remain entirely those of the author. They do not necessarily represent the views of OED or the World Bank.

## Executive Summary

### Sector Characteristics and Challenges

1. The transport sector in India is characterized by high costs and poor service quality, the underlying causes of which are antiquated and saturated road and rail systems. These transport problems have been aggravated with India's sustained economic growth since the early 1990s. During this period, the country has made substantial progress in deregulating industry (including transport), liberalizing trade and opening up to foreign investment. Yet, little has been achieved in attracting private capital to infrastructure investment and finance, with the exception of telecommunications, a few power plants, and the concessioning of some port facilities. Government funding for infrastructure has been low due to fiscal constraints and budget reallocation towards the social sectors. By comparison, China over the past 10-15 years launched the construction of a modern interstate highway system to support its export-oriented economy. By 2000, it had 12,000 km of freeways, while India had practically none.
2. While insufficient infrastructure investment is transport's most obvious problem, there are other significant sector issues: resistance to modern technology; antiquated public agency organizations; too large a role of the state in direct provision of transport services; inadequate funding of road maintenance; large distortions in the pricing of services; inefficient road transport regulations; and, weak capacity of the domestic construction industry.

### World Bank Assistance Program

3. *Composition of Program.* World Bank assistance to India is currently undergoing a dramatic shift. From about 1 project every two years during the past 20 years, the latest CAS proposes two to three transport projects per year. The focus is also shifting from an eclectic mix in 1980s covering practically all areas in the transport sector with predominance of railways, to roads. Four out of the five ongoing (as of March 2000) transport projects are for roads. Two more road projects were ready for Board presentation. In addition, several non-transport projects include rural roads components. A related trend is increasing lending for sub-national governments through state (rather than national) highway projects. The mediocre performance of railway projects, especially their failure to modernize the railway's organization or to corporatize its industrial units, and the heavy cross-subsidies from freight to passenger services, coupled with the very urgent priorities of India's highway system lend strong justification for changing the direction of transport lending.
4. The Bank has prepared five transport sector papers over the past 10 years. These papers have had different focuses, one on roads, one on ports, one on transport, one on container logistics, and the most recent on private participation on infrastructure (1999). All these papers are well focused and thoughtful, and some have excellent chapters that include relevant experience in other countries. However, it is difficult to assess their impact, since none of the papers contained recommendations for a lending strategy. The shift in lending strategy is not buttressed by a current analytical paper, although recent appraisal reports contain elements for such a strategy. The Bank has recently launched preparation of a paper to address long-term strategy issues in the transport sector.

5. *Lending performance.* Of the nine transport projects approved since 1980 and already closed, only four had satisfactory outcomes. Within this cohort, the three projects that closed from 1994 did moderately better, since two had satisfactory outcomes. Yet, these three projects suffered substantial implementation delays (between 1 and 3 years) and had hefty cancellations of loan and credit amounts (more than one third of the original amount was canceled). All the projects had mediocre ratings in institutional development and sustainability. Ongoing projects seem to be doing better since current QAG assessment shows three of these projects as being not at risk, and one as potentially at risk. However, this assessment needs to be viewed with caution, since in the past there was a high disconnect between the ratings at the last supervision (only one out of nine rated unsatisfactory) and the evaluation ratings (five rated as unsatisfactory). On the basis of lending ratings (closed and ongoing projects), and sector work, this report rates overall performance in the transport sector for the 1994-1999 period as follows: outcome, moderately satisfactory; sustainability, uncertain, and institutional development impact, modest.

## The Future

6. The following is suggested as an agenda for future development:

- *Highway development and lending.* A strategy should be formulated to help India develop a modern interstate highway system (with a significant proportion of expressways), and ensure that it would be managed efficiently. The Bank's overall emphasis on sub-national lending is correct but in transport it means a bias towards state-focused projects. While both the national and the state highway systems need to be substantially improved—operations, management and physical condition—this paper finds that development of a modern interstate highway system should be considered the most important single priority in India's transport sector. The report suggests that a lending arrangement could be devised that would facilitate the channeling of Bank assistance to the national system via state governments.
- *Role of the private sector.* The Bank should continue its strategy of supporting an increased role of private capital in infrastructure. Experience both in India and abroad suggests that this will be a slow process and the lesson is that this essentially long-term strategy should not preempt the needed public sector funding for highway development in the coming years.
- *Rural roads.* The Bank should continue to support rural roads, both through transport and non-transport projects, but should ensure that design standards meet economic criteria, since some states appear to use too high design standards (eg, paved surface) for even very low trafficked roads.
- *Railway.* The Bank needs to assess whether to retain its arms'-length relationship with the railway or, alternatively, find practical ways to further encourage modernization and reform. This report favors the latter. Despite losing much traffic to the road, the railway remains a key component of India's transport system, and there is a large scope for improving efficiency and making its service more market-oriented through a variety of institutional reforms and better focused investments.

## 1. Sector Performance and Challenges

1.1 The transport sector in India is characterized by high costs and poor service quality. The underlying causes are antiquated road and rail systems, inadequate capacities, and saturation of the systems.<sup>1</sup> This means that, as a result of congestion, the average speed on India's best roads, those of the National Highway System (NHS), is only 30 miles per hour; travel times on the rail system are comparatively much slower. There are also safety implications: some 80,000 people are killed every year in road accidents, or about 20 times the rate in the United States relative to the traffic (vehicle-miles) on the roads.<sup>2</sup>

1.2. Although India's transport problems are longstanding ones, they have been aggravated since the early 1990s, when successful adjustment policies led to sustained GDP growth and high growth rates in transport demand. India has since made significant inroads in deregulating industry (including the transport sector), liberalizing trade, and opening up to foreign investment, but little has been achieved in infrastructure investment and finance.<sup>3</sup> Fiscal restraints and budget reallocation to protect the social sectors has restricted funding for infrastructure, and attempts to substitute private finance for government funding, launched in the early 1990s, and highly publicized, has met some success in telecommunications, and resulted in six independent power plants coming into operation. In the transport sector, however, only in some of the ports has private capital been involved in the development of new facilities and management of operations.<sup>4</sup>

1.3. A comparison with China is relevant, given the similarities in the countries' size and population. India's transport system is roughly 50 percent larger than China's relative to the two countries' arable land.<sup>5</sup> In round numbers, this situation is about the same what it was in the early 1980s, when China opened its economy. A big difference, however, is the way China has tackled its transport problems, and how much it has achieved in 20 years. At the policy level, it set enhanced competitiveness of China's exports as a key objective for the transport sector. India does not have a similar objective. The results of China's export-oriented policies (which transport supported) are striking: while in 1980 exports per capita US\$18 for China and US\$12 for India, in 1995 the figures were US\$123 and US\$33, respectively.<sup>6</sup> At the operational level, China decided to develop a modern interstate highway system. By 2000, it had 12,000 km of such freeways, while India had practically none.<sup>7</sup>

---

<sup>1</sup> As reported in the Bank's latest transport sector memorandum (1995).

<sup>2</sup> 1.6 trillion (one million million vehicle miles) vehicle-km in the US and some 190 billion vehicle km in India, including two-wheelers. The road accident fatalities in India are double the number of the United States, where the motor vehicle fleet travel 10 times as many miles as India's.

<sup>3</sup> Asian Institute of Transport Development (1998) India – National Infrastructure Report. The Quiet Crisis, 1998. New Delhi.

<sup>4</sup> Source: see footnote 12.

<sup>5</sup> WB-East Asia and Pacific Regional Office (1998). China-Forward with One Spirit: A Strategy for the Transport Sector. (quoting figures from the WB World Development Report, 1994).

<sup>6</sup> WDR 1997, quoted in The Economic Times, New Delhi, 11 February 1999.

<sup>7</sup> The main problem in India for launching a similar type system of freeways appears to be the difficulties involved in acquiring land for public purposes. In comparing the two countries, it is often argued that while both countries have high population densities, land scarcity is more serious in India than in China, and is a deterrent to constructing land-intensive transport facilities. This argument is not correct. While China's total surface is about three times India's,



1.4. There are clear indications that the poor condition of the transport system has a very negative effect on the economy, especially on the productivity and competitiveness of the industrial sector. A recent study of the Indian auto industry<sup>8</sup> found that Maruti-Suzuki, the country's largest automobile manufacturer, incurred large logistics costs due to poor transport, which include freight expenditures, damages and losses incurred during shipment, and the cost of carrying inventories. Freight expenditures (inbound and outbound) alone accounted for some 4 percent of total sales revenues in 1996/97. While this number seems small, it is twice the cost Maruti's entire wage bill, including benefits. The cost of damages and losses is between \$1 million and \$3 million per year. Owing to the long travel times and their high unpredictability, the capital values of the inventories are a high 10 percent of average sales revenue.

1.5. While insufficient infrastructure investment is the most obvious problem in the transport sector, there are other significant issues, such as:

- resistance to modern technologies (e.g., modern freeways, better trucks, more powerful locomotives)
- antiquated public agency organizations (public works departments practically unchanged since independence, railway organization with vertical integration of manufacturing units)
- too large a role of state government in direct provision of transport services (for example, still about one third of intercity transport is done by state-owned companies, large proportion of works done by SOEs (owned by states or central government))<sup>9</sup>
- inadequate funding of road maintenance, coupled with poor maintenance management systems and ineffective utilization of available funds
- large distortions in pricing of services
- inefficient road transport regulations (eg, on-road vehicle inspections, cumbersome permit systems)
- weak capacity of domestic construction industry and limited participation of international contractors (to the detriment of construction quality and transfer of know-how)
- inadequate attention to transport logistics and intermodal issues and the need to ensure a level playing field for all modes

## 2. Relevance of Bank Transport Assistance

2.1 Bank assistance to India's transport sector is undergoing a dramatic shift. From 1980 to 1999, transport lending was modest: the Bank approved 14 projects for the sector, slightly more than one project every two years. In contrast, the latest CAS proposes to approve two to three projects per year. In fact, three projects were approved in 1996-97 (and others were prepared but put on hold due to sanctions). In addition to the radical change in the scale of lending, the focus of lending is also expected to change significantly.

---

arable land, where people actually live, is slightly bigger in India (163 million hectares) than in China (122 million hectares). Further, China's population is some 30 percent larger than India's.

<sup>8</sup> Gulyani, Sumila (1999). : *Effects of Poor Transportation on Industrial Competitiveness-Evidence from the Indian Auto Industry*. WBIEP, The World Bank, Washington DC USA. May.

<sup>9</sup> A comment by a workshop participant illustrated the problems with the large government role and allocation of investment resources: it noted that while port traffic is nearly stagnant, some 40 state-owned (and private) ports are under various stages of construction.

2.2 The projects approved since 1980, of which nine have been completed,<sup>10</sup> have been an eclectic mix, including railways, ports, urban transport, rural, national and state roads, and support to private infrastructure. This mix, had, however, a predominance of railway projects in the 1980 decade, as three such projects were approved between 1982 and 1988 (none thereafter). Over time, the focus has changed to an emphasis on highways—the projects approved from 1992 to 1997 comprise two highways (one national and one in Andhra Pradesh state), one container project, one technical assistance to the road sector and one project to support private finance in infrastructure. Two more highway projects are ready for presentation to the Board<sup>11</sup>. In addition, several non-transport projects included rural roads components.<sup>12</sup>

2.3 Given the overall inadequacy of India's transport system, and bottlenecks throughout the system, assistance to practically any transport mode is bound to be relevant. The more important question is how to maximize the assistance's effectiveness. Until recently, the railway has been the predominant mode of transport, and the Bank's long series of railway projects—starting in the 1960s—to improve railway efficiency and capacity, in principle, made good economic sense.

2.4 In the late 1980s, two factors combined to trigger the lending shift. First, the Bank realized that assistance to Indian Railways was not being effective. While some improvement had been made in IR's management, and investments were generally efficient (although with significant exceptions, as noted in para 3.1), little was being achieved by way of reducing pricing distortions and of modernizing IR's corporate structure. For example, large manufacturing units continued to be an integral part of IR, instead of being corporatized or hived-off as independent corporations, and so were IR's social sector activities (housing, health, education). Equally, IR continued to carry on its payroll a large amount of redundant workforce (improvements took place in recent years).<sup>13</sup> Second, after nearly ten years of refusing to provide foreign contractors opportunities in the civil works markets, India accepted international competitive bidding (ICB) in the mid-1980s; this opened the door to highway lending.

2.5 The delay of a decade in initiating highway lending cost India in a number of ways. The country lost precious years in introducing contracting procedures that have proved instrumental in developing India's domestic construction industry, modernizing technology (as the Bank has insisted that bid documents demand the use of modern equipment and methods) improving the quality of works, and improving the planning of road investments.

2.6 Could the delay have been avoided? Perhaps, if the Bank had been more persuasive in presenting its case to the Indian authorities (for example, by citing as an example China, where the Bank introduced international competitive bidding for civil works from the first projects in the early

---

<sup>10</sup> The nine completed projects are: two rural roads, two highways (one for the national road system and for states' roads covering four states), one port, three railways and one urban transport (Calcutta).

<sup>11</sup> These two projects (National Highways III and Gujarat State Highways) were approved in June 2000 and September 2000.

<sup>12</sup> This shift to focusing mostly in highways was supported by comments during the workshop that favored the Bank being selective in its assistance to the sector.

<sup>13</sup> A comments by a CAE adviser suggested that Bank presence was unable to induce improvements in the railway's tariff structure, and that, in fact, it got worse. One implication of this comment is that the Bank should have stopped lending for railways earlier than it did.

1980s). The Bank might also have been more flexible, making a temporary exception to its procurement rules and allowing local competitive bidding on an initial project. India, for its part, could have helped avoid the delay with better analysis of the likely outcome of ICB. In fact, foreign contractors have yet to win a bid on any of the highway projects approved so far. Although foreign contractors have been part of joint ventures with local contractors that were awarded contracts, the local partners have generally retained management and the foreign partner has had little impact on the joint venture.

2.7 Bank lending strategy in India is evolving toward increasing lending for sub-national governments. In transport, this shift is further explained by the states being more responsive to change than relevant central agencies (MOST/NHAI). As a result, a higher proportion of lending is going for states, rather than the national, road systems. From an investment perspective, the balance may have tilted too much<sup>14</sup>. While the national road system represents 8 percent of all major roads in terms of mileage (and less than 2 percent of total road network including rural roads), it carries 35 percent of the traffic and is the most congested. In addition, a number of state roads are being declared national highways, further raising the importance of the national system.<sup>15</sup> At the same time, the trucking industry needs to modernize its equipment and use larger, more efficient trucks. This will not happen given the current state of the highway network, especially the national system where long-distance hauls could be most profitably operated by large, modern trucks.

2.8 The Bank, through both transport and rural development projects continues to help India to improve its rural roads. These are worthy investments, given India's high percentage of rural population and the prevalence of poverty in the rural areas. GOI's objective—connecting all villages with over 1,000 population via all-weather roads to main roads—is a reasonable approach, but only if it can be done in cost-effective and sustainable manner. This requires significant changes in current practice to ensure the use of low-cost designs and surfaces, effective maintenance, and local accountability for results. The Bank is helping introduce prioritization criteria and find ways to secure funding for maintenance. In other countries, the quality of rural roads included in rural development projects has been problematic. The Bank has taken steps to minimize this potential problem in India, by more closely involving transport and rural development staff in road development and management under rural development projects. This enhances the potential for cross-learning and ensures good levels of quality for the rural roads, irrespective of the loan operation that finances them. However, the sustainability of the rural roads may be substantially more risky when they are part of non-transport projects, since it is more difficult to focus on the financial arrangements needed to ensure adequate maintenance of the roads.

2.9 With motorization growing rapidly in India, road accidents are increasingly a major threat to the public safety. While road safety is widely recognized as an important sector issue, systematic actions to address this issue are lacking. The Bank is stepping up its support for the implementation of road safety actions plans.

---

<sup>14</sup> The Region has commented that while the Bank has been working closely with a few states and its sector lending has expanded in the state road sub-sector, the Bank continued to have a strong program with the National Highway Authority. It also noted that looking at recent lending operations (FY00) and the lending program for FY01-FY03, about 40% of the Bank's lending volume will be for national highway projects.

<sup>15</sup> As noted by workshop participants.

2.10 *Project-financed studies.* The various national, state, and rural roads projects have included a number of studies. Some studies have created expectations that have gone unfulfilled. For example, a study of the reorganization of Maharashtra's Public Works Department, the first attempt to reorganize a PWD since India's independence, and attracting much attention among senior public works officials was a failure: the study was of poor quality, did not cover important areas, and no PWD reorganization was implemented as a result of the study. It would be helpful for the Bank, working with union and state officials, to review the impact of such studies, assess their cost-effectiveness, and determine ways to improve the usefulness of future studies.

## **Sector Work**

2.11 Over the past 10 years, the Bank's India staff prepared three sector reports, one on the road sector (1989), one on the port sector (1995) and one on the entire transport sector (1995). A fourth paper, focusing on trade logistics and transport (1990), was prepared by a central department of the Bank.<sup>16</sup> The analysis in all four papers is thoughtful and well-focused. The 1989 paper contains an Action Plan with concrete recommendations. Similarly, the 1995 port paper contains clear recommendations. The 1990 and the 1995 transport papers appear to have been amply discussed with Indian officials. A fifth report, on private participation in infrastructure, has been prepared in 1999 and is in draft.<sup>17</sup>

2.12 It is difficult to assess the impact of such papers. None of the three sector papers contain recommendations for a lending strategy, or lending levels.<sup>18</sup> The 1995 transport paper appears to have been drafted following a highly participatory process with government staff and was still well remembered by senior Indian officials (current or retired) when the transport CAR mission visited India in January 1999. The paper contains an excellent analysis of long-term issues in the sector, and includes an interesting chapter about policy reform experience in the United States, Chile, and Mexico. It also compares India's railway with the railways of industrialized and Asian countries, and finds that India has the lowest rail fares. Unfortunately, the report lacks a similar comparison for the road system. The report did not suggest a lending strategy for the Bank. The 1990 paper provided a thoughtful warning on the high logistics costs in India, although its focus was essentially on containers and the institutional side of trade logistics.

2.13 The 1995 transport paper also does not analyze the role of the private sector in infrastructure finance. This is well covered in the 1999 paper, although that paper does not discuss the Bank role in encouraging such private sector investment.

2.14 The 1995 port paper was assisted by a team of Indian experts, but it is not apparent the extent of discussion of this paper with Indian authorities. This paper provides relevant examples or port policies from other countries.

---

<sup>16</sup> Policy Issues in Road Transport in 1989, and Transport Sector-Long Term Issues, in 1995. The third paper is: India's Growing Conflict between Trade and Transport.

<sup>17</sup> India-Country Framework Report for Private Participation in Infrastructure. Finance and Private Sector, South Asia Region, World Bank, Draft, March 12, 1999.

<sup>18</sup> Although these grey cover reports do not make such recommendations, it is possible that earlier drafts may have had them, but this could not be confirmed.

2.15 It appears that sector work is lacking the design of Bank strategy that is needed to buttress the large increase being proposed in the lending program and which had not been anticipated a few years ago. Elements of such a strategy already exist in various reports<sup>19</sup>, but the overall strategy needs to be completed, updated, and presented in a single document. Of special importance would be to: define lending objectives and to assess tradeoffs that may have to be made: among transport modes; states versus national; rural versus urban; new construction versus expanding or improving existing facilities; propose monitoring and evaluation indicators to evaluate lending performance, and, discuss coordination with other donors active in the sector.

---

<sup>19</sup> For example, a sectoral strategy for road assistance is in the project appraisal document (PAD) and technical Annex for the States Roads Technical Assistance project, and directions for expressway development are in the 1991 ADB-financed "Development of Long-Term Plan for Expressways in India" and in the World Bank-financed "Medium-Term Construction Priorities for Expressways in India, which focused on the Delhi-Calcutta and Madras-Trichi corridors. The Region has recently launched the preparation of a sector report on "Long-term issues in the transport sector".

### 3. Implementation and Impact of Bank Assistance

#### All Projects Approved Since 1980

3.1 The achievements of railway projects were mediocre. The main accomplishments were technological and managerial, including improvements in accounting and in making subsidies (mainly cross-subsidies among various categories of traffic) more transparent. The projects failed to modernize the organization of Indian Railways in any significant way, for example, they did not corporatize its industrial units (the railway's industrial plants manufacture coaches, locomotives, and other rail equipment). Project-financed investments in electrification proved economically unjustifiable.

3.2 In the two completed highway projects, implementation was extensively delayed at great economic cost given the high congestion in many parts of the Indian highway network. Further, most of the works were not completed by project closing. Troubles with procurement, engineering, and land acquisition and right of way conflicts with utilities figured prominently as major problems in both projects.

3.3 The failures with substantially improving the railway and the delay in launching highway lending may not have looked terrible serious during the 1970s and 1980s. But, sustained growth during the 80s meant that by the end of that decade, transport bottlenecks become more and more visible.

3.4 *Performance Ratings.* The performance of the completed projects has been poor: six of the nine had unsatisfactory outcomes, all nine had little institutional development impact (rated negligible or moderate) and only three had sustainability rated as likely. The Bank appears to have been overly optimistic during supervision: out of the five projects with unsatisfactory outcomes, the Annual Review of Portfolio Performance reports, at exit, that only one had unsatisfactory development objectives.<sup>20</sup> The performance of transport projects compares unfavorably with transport projects Bank-wide, which had a 76 percent satisfactory outcome for the 196 projects that exited the portfolio during FY91-98.

3.5 It is even more striking that the two highway projects had unsatisfactory outcomes, considering that, in the transport sector Bank-wide, the outcome of highway projects is better than average.

#### Projects Closed or Underway During 1994-99

3.6 Implementation of the three projects (one rural roads, one railway and one states roads) that closed during the period 1995-99 was moderately better than the cohort of projects approved since 1980. Still, there were substantial implementation delays and hefty cancellations of loans and credits. Large cancellations in two projects due to reduction in scope is worrisome and suggests either poor project preparation, lack of ownership, or both.

---

<sup>20</sup> A comment during the workshop noted that transport projects suffered from the sector being seen by authorities as an employment-generation activity, which led to high costs and poor productivity, affecting project performance.

<i>Project (Credit/Loan)</i>	<i>Credit/Loan Cancellation (% of original amount)</i>	<i>Implementation Delays (years extension of project's closing date)</i>	<i>Reason for Cancellations</i>
Gujarat Rural Roads (C)	42	1	Currency devaluation
Third Railway (L)	37	2	Reduction in scope
States' Roads (C/L)	37 (loan only)	3	Reduction in scope

3.7 Implementation of the four ongoing transport projects seems to be going substantially better than the closed projects. Only one of the four projects (National Highways II, mainly because of procurement delays and counterpart funds in one state) is listed as potentially at risk, while the other three are listed as not at risk by the September 1999 Quality Assurance Group assessment<sup>21</sup>. In addition to these four transport projects, there are road components in seven projects in other sectors, such as in economic restructuring, emergency, rural development and irrigation projects. The extent of road works in these projects is significant: they cover 1,100 km of state roads and over 7,000 km of rural roads. By comparison, the Gujarat rural roads projects improved 6,400 km. The rural road component under the on-going Andhra Pradesh economic restructuring project is putting in place a detailed monitoring and evaluation system that will allow to conduct a broad assessment of the impact of the rural roads investments.

3.8 *Performance Ratings.* Of the three transport operations that closed during the period, two had satisfactory outcomes (a rural roads project and a railway project) and one had unsatisfactory outcome (a states road project, mainly due to poor efficacy). Efficiency (economic returns) was satisfactory in all projects. The institutional development impact of these operations was poor: it was rated as modest in two, and as negligible in the third (the state roads project). Sustainability of these operations was uncertain in two of them, likely in the other.

3.9 The most recent supervision reports for all four projects under implementation rate them satisfactory in both implementation progress and development objectives.

## 4. Overall Evaluation of Transport Sector Assistance

4.1 Based on the above ratings, the other ratings shown in Annex 1, and the assessment of sector work, this report offers the following overall evaluation of transport assistance during 1994-1999 (including projects closed during this period and on-going operations). It should be noted that these ratings, especially regarding institutional development (ID), do not reflect actions in projects under preparation or in early implementation stages.<sup>22</sup> The ID rating refers to actual impact, irrespective of the intended project objectives.

<sup>21</sup> The NHII project is no longer considered to be at risk by the Region.

<sup>22</sup> For example, institutional development assessments and action plans in projects in Andhra Pradesh, Gujarat, Haryana and Rajasthan. Unfortunately, as noted by the Bank's Regional Management, the actions contemplated in these proposed projects have not yet been implemented as the program of assistance in the transport sector has been held up by the sanctions.

<u>Rating Category</u>	<u>Rating</u>	<u>Comments</u>
<i>Outcome</i>	Moderately Satisfactory	Reflects good ratings, both implementation and development objectives, of ongoing projects, and two out of three satisfactorily completed projects. However, the outcome of sector work has been less satisfactory, especially due to the lack of a current sectoral lending strategy.
<i>Sustainability</i>	Uncertain	Reflects ratings of completed projects plus the fact that ongoing projects have not yet managed to put in place reliable, long-term systems for financing the maintenance of the road assets, although recent projects have led to substantially increased allocation for maintenance.
<i>Institutional Development Impact</i>	Modest	Consistent project ratings and the distinct impression that the transport lending program overall has not made significant ID achievements. This may well change as the Bank changes radically the scale of the lending program in the sector, and better opportunities open up for institutional reforms, especially if lending is concentrated in the more reform-oriented states. The Region reports that some Public Works Departments in states like Andhra Pradesh, Gujarat and Tamil Nadu have initiated institutional reforms because of a realization by the PWDs that such reforms were needed.

## 5. Lessons and Agenda for Future Development

5.1 *Highway development strategy and lending.* The Bank needs to take an active role in helping India shape a sound highway development strategy. At present, India's strategy for addressing highway capacity constraints consists of widening the roads in the national system rather than building modern, high-capacity expressways. This approach may be lower-cost, easier to implement and more egalitarian than building access-controlled expressways (as China is doing) but the overall development impact is correspondingly lower.<sup>23</sup> Ten years from now, the authorities will regret not having faced squarely the need to develop a modern inter-state highway system. Existing routes are on alignments that are over 100 years old, cross one village every three miles, and are used by mixed traffic including everything from a few modern trucks to bicycles and animal-drawn carriages. Segregation of slower traffic on these roads is technically difficult and politically impossible. Putting more money into these old roads is not what India needs to significantly reduce the costs of domestic and international freight and sustain its trade-based development. The Bank's increasing emphasis on sub-national lending is correct yet it may run counter supporting the development of an inter-state highway system because this system falls under the responsibility of the federal highway authority which currently is the Bank's counterpart at the national level. One possible way to solve this conflict, that could be tried on a pilot basis,

<sup>23</sup> Comments from MOST and NHAI suggested that because of land acquisition and other practical problems with the development of expressways, the four-laning approach was a necessary stage prior to the construction of full expressways. The comments also noted that some expressway sections are already planned for the Golden Quadrilateral (eg, Ahmedabad-Vadodara and Mumbai-Pune). These are certainly important reasons in support of four-laning; it may well be the most sensible approach in many cases. Yet, given growing population and increasing land subdivision, the problems with land acquisition can only get worse over time, and in the more congested routes the expressway standard would make sense.



would be to arrange a system of delegation whereby states could receive Bank loans and carry out national projects on behalf of the National Highway Authority of India.<sup>24</sup>

*5.2 Preparation of Bank's highway strategy.* For the Bank to help shape the debate, it needs to do its own thinking. With the help of a \$51 million technical assistance project (the largest TA transport project in the Bank), the Bank is currently helping India to prepare a pipeline of some 20 state and national highway projects. This massive, long-term assistance program should be underpinned by a thoughtful analysis of short- and long-term objectives, and lending priorities in considering trade-offs such as state versus national highways; new construction versus widening, rehabilitation and maintenance; rich versus poor state; reforming versus traditional states. The analysis should also review learning strategies, technology, institutional development, the development and use of performance indicators, and the focus of project-financed studies (as noted in para 2.9). The Bank should work with the central government as a facilitator for policy dialogue at the state level for such issues as mispricing, subsidies, inadequate funding mechanisms and removal of border barriers and other protectionist policies. The scaling up of Bank lending, to ensure that Bank operations' impact reaches beyond individual projects, should be given special attention. This could be done, for example, by expanding current exchanges of experience that the Bank has been sponsoring among the various states, and making such exchanges more systematic. The paper should, as did the 1995 report, give heavy emphasis to international comparisons and to relevant Bank experiences, with a focus on serving as knowledge clearinghouse rather than offering prescriptions.

*5.3 Role of the private sector.* The Bank needs to carefully design its strategy supporting private capital participation in infrastructure. A line of credit has been extended by the Bank to a non-banking financial institution with a government guarantee to on-lend to privately-sponsored infrastructure projects (including toll roads, bridges and private ports). This initiative is good. However, it should not be taken as a substitute for needed budgetary funding for the highway system. In the past five to seven years, India has signed many memorandums of understanding with foreign and local investors for the private financing of main roads. Thus far the only BOT investments that have materialized are small, localized projects such as flyovers and bypasses. Proposed improvements in BOT rules that allow 100 percent private foreign capital are a sign that India will continue to open to international investments. Although these improvements were expected to be effective in 1999, in the medium term, private capital is unlikely to provide the resources necessary for highway development. International experience confirms this<sup>25</sup> and

---

<sup>24</sup> Comments from MOST and NHAI objected to this suggestion, noting that the NHAI had been created with support from international lending institutions and that the NHAI has taken measures to speed up project implementation, including simplified land acquisition procedures, outsourcing all major project activities, and construction of rail overpasses. However, under this paper's suggestion, the NHAI would retain its key role in the formulation, development and implementation of the national highway system. The main innovation would be that the NHAI would help strengthen the state highway departments and assist them to take a role in implementing improvements to the national road system. This innovation could be piloted in states having the better technically-qualified highway departments.

<sup>25</sup> Experience in other countries shows that the private sector involvement will be gradual and cautious, and it is not likely to significantly contribute to financing expansion of national transport networks. Where it did, in the well known case of Mexico, the government had to bail out private contractors to the tune of over \$7 billion. In China, which enjoys much ready capital from Hong-Kong, private capital has invested but has not been instrumental in the financing of China's core expressway system. Following the Mexico experience, the current trend is to involve the private sector in improving existing facilities rather than in greenfield infrastructure projects.

experience to date in India suggests that only smaller projects, such as bridges and bypasses can attract private finance.<sup>26</sup> India's local road building industry has improved considerably but management and construction quality have substantial room for improvement. At the same time, there appears to be little justification for India to keep a large presence of state-owned (federal and state) road and bridge construction companies.

5.4 *Rural roads.* The Bank continues to help India improve its rural roads both through transport projects and through rural development projects. These investments are worthwhile and GOI's objective for rural roads is reasonable. One important issue to analyze is the design standards, as some provinces are paving (blacktopping) their rural roads even under very low traffic levels, and it is not obvious the conditions under which standards would be economically justified. In implementation, the rural roads investments have generally avoided the quality shortcomings that are more common in other developing countries.

5.5 *Railway.* The Bank needs to assess whether to retain its arms-length relationship with the railway or, alternatively, find practical ways to further encourage modernization and reform. This report favors the latter. Some efforts are currently underway. The container transport project, supporting the improvement in railway container services, is novel and useful, although it is peripheral to the most important railway issues. The current dialogue for the preparation of Mumbai Urban Transport is expected to hive off development of suburban passenger services to a new IR/Maharashtra state company. The GOI has approached the Bank to obtain financing for several studies aimed at greater competitiveness and business efficiency. While these efforts are useful, they need to be substantially strengthened. Indian Railways, with 1.6 million employees, is the largest employer in the country and the sole provider of railway services. Its monopoly shelters the railway from feeling the competitive pinch. The 6 to 8 percent dividend it pays to government is a mirage that diverts attention from the larger issues, since that dividend is based on historical, non-revalued assets. In addition, its high freight rates, resulting from large cross-subsidies from freight to passenger traffic (the ratio of passenger to freight rates is 32 in India and 152 in China)<sup>27</sup> and from operating inefficiencies stemming largely from antiquated technologies, represent a large tax to shippers, undermining trade. Indian Railway's unfunded pension liabilities are a time bomb with potentially grave fiscal implications.<sup>28</sup>

---

<sup>26</sup> World Bank, 1999. India. Country Framework Report for Private Participation in Infrastructure. Finance and Private Sector, South Asia Region. (page 28)

<sup>27</sup> That is, the ratio of dollars per passenger kilometer to dollars per ton kilometer. Source: India-Transport Sector. Long term issues. World Bank, March 1995 (Annex 2).

<sup>28</sup> IR supplements the pension fund with moneys from its operating surplus. This burden may soon become unbearable. The number of pensioners in IR increased from some 300,000 in 1981 to about one million in 1998. As a result the share of pensions in the working expenses increased from 4.7 percent in 1981 to 13.3 percent in 1998. Since the IR is a federal system, the national budget would be required to provide any shortfalls in the pension funds. Source: Greying of Indian Railways, Asian Institute of Transport Development. New Delhi, 1998.

**India – Transport Sector  
Performance of Bank Portfolio**

**I. Completed Projects (approved from 1980. *In Italics those closed from 1994*)**

Project	Loan/ Credit	Approval	Closing (Actual)	Loan Credit \$mill	ARPP DO Exit	OED (ICR) Ratings		
						Out	ID	Sust
<b>Roads – Rural</b>								
Bihar Rural Roads	C1072	11/11/80	06/30/88	35	Sat	Uns	Neg	Unc
<i>Gujarat Rural R</i>	<i>C1757</i>	<i>02/17/87</i>	<i>12/31/95</i>	120	Sat	Sat	Mod	Lik
<b>Roads – Highways</b>								
National Highway	L2534	05/09/85	12/31/93	200	Sat	Uns	Neg	Unlik
<i>States' Roads</i>	<i>L2994/ C1959</i>	<i>10/20/88</i>	<i>06/30/98</i>	250	Sat	Uns	Neg	Uncer
<b>Ports@Shipping</b>								
Nhava Sheva Port	L2387	03/13/84	06/30/92	250	Sat	Sat	Neg.	Unc
<b>Railways</b>								
Second Rail	C1299/ L2210	11/16/82	09/30/89	200	Sat	Sat	Mod	Lik
Rail electr@wkshop	L2417	05/17/84	03/31/93	280	Sat	Uns	Negl (M)	Uncer (L)
<i>Third rail moderniz.</i>	<i>L2935</i>	<i>05/05/88</i>	<i>12/31/95</i>	390	Sat	Sat	Mod	Lik
<b>Urban Transport</b>								
Calcutta UT	C1033	06/03/80	12/31/85	56	Unsat	Unsat	Neg	Unlik

## II. Ongoing Projects

<i>Project</i>	<i>Loan/ Credi t ID#</i>	<i>Approva l</i>	<i>Closing Current</i>	<i>Loan/Credi t Amount (\$ million)</i>	<i>Impl Progr</i>	<i>Dev Obj</i>	<i>QAG Ass (8/99)</i>	<i>Comments</i>
Nat. Highways II	9946	05/12/92	06/30/01	306	S	S	Potential Risk	
Container Transport	9870	06/09/94	12/31/99	94	S	S	N-Risk	
ILFS-Infra Finance	39935	03/28/96	09/30/01	205	S	S	N-Risk	
State Highway -A.P.	9995	06/17/97	01/31/03	350	S	S	N-Risk	
TA State Roads	45600	11/11/96		51.5	S	S	N-Risk	

## Summary of Discussions at CAE Workshop on Transport

March 30, 2000

The discussion was lively and issues were raised on a number of topics, although the meeting (as well as written comments) was generally complimentary of the CAE paper. The meeting did not attempt to reach specific consensus on the points raised, but served mainly to convey viewpoints of senior officials who attended the workshop. This note highlights the key points of the discussion as well as of written comments received.

i) *Changing Bank lending directions.* An initial comment noted that the thrust of the World Bank strategy in the transport sector had changed from a focus on railways in the 1980s to an emphasis on highways in the 1990s. It was suggested that the Bank should continue to confine itself to a few niche areas, such as highways, instead of spreading its activities in multiple areas.

ii) *Intermodal issues.* It was remarked that the background paper concentrated on highway system and rural roads without adequate attention being paid to inter-modal issues. It was believed that the transport system was more over-stretched than antiquated. Another suggestion was the need to ensure a level playing field for all the modes. At the same time, a view was expressed that there is lack of an integrated national policy for the transport sector, and of understanding the role of interconnectivity of the modes.

iii) *Economic policies.* It was felt that politics plays a major role in planning in comparison to economics. Many transport sector projects suffered from the sector being seen as an employment-generating activity, which led to high costs and poor productivity. It was felt that problems in the sector were compounded by wrong priorities of the government besides fiscal constraints. A few participants felt that the social dimensions of the Bank's policies especially in rural roads were not adequately covered in the paper.

iv) *Technology and design standards.* Differences were expressed with the conclusions of the paper regarding resistance to acceptance of modern technology. It was felt that modern technology was generally welcome. The Bank was asked to ensure that the design criteria be economically sustainable regarding rural roads. Regarding the trade off accessibility versus mobility, there were conflicting views among participants whether the paper had too much focus on one or the other.

v) *Modernizing the highway network.* Regarding the debate between express highways and four-lane highways, some discussants felt that four-lane highways were a better option, given the problems related to land acquisition, its implications on implementation time, and paucity of capital. Some participants view the four-laning approach as a necessary stage prior to full expressway. Under current plans, there will four-laning of the Golden Quadrilateral (which will include at least two sections of expressways) and North-South and East-West Corridor. A comment noted that the CAE paper was too focused on the national highway system, and that it should recognize the importance of the state highway systems. Another comment noted appropriate land use planning and development is a basic element for proper infrastructure development. In addition, the necessary role for private capital was emphasized for the development of this sector. An aspect where the CAE transport report was seen as a departure from earlier reports was the acceptance

that private funding alone would not suffice and that the government definitely has a role to play in this sector.

vi) *Funding by private sector.* It was noted that one of the reasons for private investment not entering the transport sector was the inability of the private sector to recover operational costs due to existing policies. Joint ventures with international participation were welcome. It was also pointed out that a pattern of risk sharing must be developed.

vii) *Ex-post evaluation criteria* A discussant from the World Bank wanted to know the ex-post evaluation criteria of the Bank projects in India: whether it was based on the rate of return or on the institutional development component. The response was that the rate of return was important, but that in projects with very significant institutional development objectives the degree of achievement of these objectives could significantly influence the outcome rating.

viii) *Project implementation.* A discussant observed that one of the reasons for delays in project implementation was the complicated procedure related to procurement of materials. It was emphasized that the Bank should help in the capacity building in the construction aspect of the infrastructure projects. A participant objected to the suggestion that the States could carry out the work on national highways on behalf of the National Highways Authority of India (NHAI) and noted that creation of NHAI had been supported by international lending agencies; at the same time, NHAI has adopted measures to speed up implementation.

ix) *Railway projects.* A participant noted that poor project design, for example, inadequate funding distribution between Bank and government had resulted in a project failing to introduce modern equipment as had been originally intended.

Comments i), ii) iii) v) and viii) which are of a substantive nature and can materially affect the CAE transport paper's conclusions have been taken into account in the current version of the paper through either changes in the text, or footnotes, or both.