

Chapter 2

Objective & Rationale

2.1 Objective

Historically, investments in the infrastructure sector, particularly in the highways, were being made by the Government mainly because of the large volume of resources required, long gestation period, uncertain returns and various associated externalities. The galloping resource requirements and the concern for managerial efficiency and consumer responsiveness also have led in recent time to an active involvement of the private sector.

There are several reasons for this growing involvement of the private sector in infrastructure project which include:¹⁸

- High Fiscal deficit or fiscal concerns of the government, when it privatises or involves private sector in large infrastructure projects to bridge this fiscal gap.
- New Public Management Policy : To encourage more of private sector in delivery of public goods
- Availability of additional resources to meet the increasing needs of investment in infrastructure services.
- Increased efficiency in project delivery and operation.
- Access to advanced technology
- Sustainable development in infrastructure facilities and services.

PPPs in Infrastructure projects typically involve transfer of public assets, delegation of government authority for recovery of user charges, private

¹⁸ Transport and Tourism Division UNESCAP (2007), *Public – Private Partnerships in Infrastructure Development: An introduction to issues from different perspectives*, Bangkok: UNESCAP.

control of monopolistic service and sharing of risks and contingent liabilities by the Government. Protection of user interests and the need to secure value for money, as such demand a rigorous treatment of these projects.

It is based on the principle of sharing and assigning of the risk to the party best suited to handle the particular risk. The private sector brings to the table, its technical and managerial expertise in implementation, operational efficiency, infusion of financial resources and introduces competitiveness in areas where feasible.

A large number of PPP projects in highways sector were executed in Latin America, Central and Eastern Europe and East Asia in early 1990's. Initially there was boom in such projects, but by late 1990's – early part of 21st century, PPP mode suffered huge setbacks due to various reasons. A large number of them were renegotiated and a few of them were renationalised also. These projects were studied and analysed in great detail by various scholars to ascertain the causes for success and failure of these projects and factors responsible for the same. These projects were also studied on parameters like timely completion of projects, comparative project costs under various modes of delivery, key risks in execution under PPP mode like traffic risks and measures taken by different countries to mitigate these like shadow tolling, availability based payments etc.

In the last few years, large numbers of project in PPP mode under BOT (Toll) and BOT (Annuity) have been completed under NHDP. The present study attempts to find out whether the efficiencies which are typically associated with private sector have been obtained in NHDP projects. This would be done by comparing different modes of delivery on the parameters

like timely completion, cost escalations, and disputes / renegotiations in contracts. A comparative study would be made between projects executed under BOT (Toll); BOT (Annuity) and under EPC mode on the above parameters.

The study would provide an idea about how effective PPP programme in NHDP have resulted in meeting its stated objectives. It would also give us an idea as to whether Indian experience has been different from countries, which were the pioneers in PPPs in highways. It may also give us an insight as to whether the policies in the highway sector are bearing fruit or there is further need to improve them.

2.2 Existing Policy for award of projects under different mode of delivery:

As per existing Government policy all projects are to be first bid out as BOT Toll and on failure are to be then offered under BOT Annuity and if this also fails, then they are to be taken under EPC after taking specific approval from CCEA. The above mentioned 'water fall' of bidding process envisages that all projects identified under the seven phases are expected to be built using one of the 3 modes of construction. Not only does this process take several months but also the existing Financing Plan of NHAI envisages BOT Toll as the primary mode of implementation therefore resources for building the highways through Annuity or EPC would be limited.¹⁹

As per the directions of Government to speed up the implementation of projects and achieve a target of 20 km per day for construction the implementation strategy needs to be revised from a predominantly BOT (Toll) model to one where the BOT(Toll) mode still remains the preferred mode

¹⁹ Government of India, MoRTH (August, 2009), *Report of the B.K. Chaturvedi Committee on NHDP*, New Delhi: MoRTH

however where traffic does not justify this mode, then the alternative modes of BOT (Annuity) or EPC would also need to be considered upfront in the light of extremely slow or non-response from the market. The modes for delivery of projects vary from BOT (Toll) to BOT (Annuity) and also EPC depending upon the financial & commercial viability of the projects and need for taking of the stretches for widening or strengthening.

All highways which are to be tolled should adhere to the BOT (Toll) mode in accordance with the extant framework approved by Committee on Infrastructure / Cabinet, especially a cap of 40% on the grant element. In case bids exceed the cap of 40%, the project structure would be reviewed by the competent authority for shifting the project from BOT (Toll) to BOT (Annuity) mode along with provision of requisite funding, as necessary.

Highway projects which are not amenable to BOT (Toll) mode, including projects which are not to be tolled under Government policy, should be undertaken on BOT (Annuity) mode. However, the current BOT (Annuity) model would need to be reviewed by an Inter-Ministerial Group which has been constituted by the Committee on Infrastructure. In the course of such review, concerns relating to cost effectiveness of this model may be addressed. Issues relating to inflation and traffic risks may also be addressed.

Only those highway projects which are not amenable to BOT (Toll) or BOT (Annuity) approach may be taken up through the EPC mode with competent approvals and after provision of requisite funding.

The total length proposed to be developed under NHDP has been split into sections to be covered under different modes of delivery viz. BOT (Toll), BOT (Annuity) and Construction Contract (CC). The projections for BOT

(Annuity) under NHDP-IV are tentative and may be firmed up based on the tolling policy for two-lane highways to be approved by the Committee on Infrastructure (Col) / Cabinet and the allocation of additional budgetary resources.

The core group on financing of NHDP headed by Member secretary planning Commission prepared the financing plan for NHDP in 2006, according to which the total outlay for completion of NHDP Phase I-VII was estimated at Rs. 2,20,000 crore at 2006 prices. The requirement under BOT Toll / Annuity was estimated at around Rs. 1,80,000 crore and the outlay under EPC (CC) was assessed at Rs.40,000 crore. The phase – wise details are in Table 2.1:²⁰

Table 2.1 : Outlay under Different Modes of Delivery

NHDP Phase	Item	CC	BOT Toll	BOT Annuity	Total
NHDP-I (Balance Work)	Length (in km.)	1,711	20	7	1,738
	Cost (in Rs. cr.)	8,145	581	85	8,811
NHDP-II (Balance Work)	Length (in km.)	4,569	1,237	930	6,736
	Cost (in Rs. cr.)	29,493	8,065	6,064	43,623
NHDP-III	Length (in km.)	--	10,000	--	10,000
	Cost (in Rs. cr.)	--	65,197	--	65,197
NHDP-IV	Length (in km.)	--	5,000	15,000**	20,000
	Cost (in Rs. cr.)	--	6,950	20,850	27,800
NHDP-V	Length (in km.)	--	6,500	--	6,500
	Cost (in Rs. cr.)	--	41,210	--	41,210
NHDP-VI	Length (in km.)	--	1,000	--	1,000
	Cost (in Rs. cr.)	--	16,680	--	16,680
NHDP-VII	Length (in km.)	--	--	--	*
	Cost (in Rs. cr.)	2,594	9,638	4,448**	16,680
Total	Length (in km.)	6,280	23,757	15,937	45,974*
	Cost (in Rs. cr.)	40,232	1,48,321	31,447	2,20,000

(Source: Report of the Core Group on financing of NHDP)

*Length to be covered under NHDP VII is yet to be finalised

**To be determined based on budgetary resources and the tolling policy for 2 lane highways

However, to achieve inclusive growth, it is imperative to speed up the

²⁰ Government of India, Planning Commission (2006), *Report of the Core Group Financing of NHDP*, New Delhi: The Secretariat for the Committee on Infrastructure

construction of roads throughout the country. This would be possible if a mix of mode of delivery of projects is adopted as sole dependence on BOT (Toll) mode of delivery would not yield the desired results. This departure would thus require the approval of the Government before taking up the projects on the modes other than BOT (Toll).

2.2.1 Making visible difference in road program:

In order to build 20 kms. per day, NHAI is required to award at least 21,000 kms. over next 3-years so as to achieve the objective of constructing 7,000 kms. per year (equal to 20 kms. per day).²¹

2.2.2 Constraints

While implementing these projects several constraints were encountered, which are as follows:²²

- **Land acquisition:** There has been inordinate delay in acquisition of land in some states mainly due to procedural formalities, court cases and lack of full co-operation from the state governments concerned.
- **Environment and Forest Clearances:** There have been considerable delays in getting the forest clearance both at the Central and State level.
- **Clearances of Railways for ROB designs:** Rail Over Bridges (ROBs) and Rail Under Bridges (RUBs) had to be constructed to make the NHDP free from level crossing on Railways. Obtaining the clearances / approval from the Railways involves co-ordination with several Departments within Railways and it takes a long time to get the necessary approvals.
- **Shifting of Utilities:** Shifting of utilities of different types e.g. electric lines, water pipelines, sewer lines, telecommunication lines which were to be

²¹ Government of India, MoRTH (August, 2009), *Report of the B.K. Chaturvedi Committee on NHDP*, New Delhi: MoRTH

²² Government of India, MoRTH (2012), *Annual Report (2011-12)*, New Delhi: MoRTH

completed with the assistance of the concerned utility owning agencies took a considerable time.

- **Law and order problems:** In many States, works have been affected because of adverse law and order conditions and activities of anti-social groups. In addition, the stoppage of works by the local population demanding additional underpasses / bypasses, flyovers, etc. was also frequent.
- **Poor performance by some contractors:** Performance of some of the contractors has been very poor. Cash flow problem has been one of the major reasons for poor performance. The termination of such contracts often results in long-drawn litigation and further delays in completion of works.

2.3 Research Questions :

1. Whether P.P.P. in Highway sector is a preferred mode worldwide ?
2. The evaluation of NHDP projects completed and under implementation with private investment (BOT(toll), BOT(annuity)) & Government Funding (EPC) in respect of following:
 - a) Whether BOT(toll) in Highway is efficient mode in respect of Time Overrun ?
 - b) Whether BOT(toll) in Highway is efficient mode in respect of Cost Overrun ?
 - c) Whether BOT(toll) in Highway is efficient mode in respect of Litigation ?
3. Whether changes in MCA of BOT(toll) for risk-mitigation and clarity have resulted in better efficiency ?

2.4 Methodology:

Public – Private Partnership projects have been widely studied under the New Public Management philosophy both as an instruments for effective provision of Public services as also for reducing the role of Government from the areas where private sector can provide efficient services. There is vast amount of literature available on PPP projects in Infrastructure sector. These studies have analysed the areas of infrastructure which lend itself easily to PPP model like Roads, Telecom and to some extent Power Generation, while sectors like Water Supply, Sanitation and Power Distribution have seen very few successes. The literature gives a good account of reasons for successes and failures of PPP within the same sector in a cross–country scenario. A large number of case studies are available from multilateral agencies like World Bank, Asian Development Bank, European Central Bank etc.

In Indian context a large volume of literature is available on websites of Ministry of Finance, Planning Commission and Central Ministries involved in infrastructure projects. The literature gives a good account of the policy, legal institutional, financial and risk framework required for execution of PPP projects. The reasons for the preference of PPP model for execution of infrastructure projects have been analysed in great detail.

Therefore, a detailed survey of literature has been done as the first item of the study. Even though most of the studies relate to countries which were early adopters of the PPP, these studies have lot of relevance in Indian context also, as several of them relate to developing countries with similar problems and prospects.

As a logical second step, data have been collected from NHAI relating

to the following parameters:

- (i) Completion time (Scheduled vs. Actual);
- (ii) Project cost (Estimated vs. Actual) and
- (iii) Contract disputes under different modes.

In addition to primary data from NHAI, secondary information / data available with other government organizations like Planning Commission, Ministry of Road Transport and Highways, Ministry of Finance; Multilateral agencies like World Bank, Asian Development Bank; and private institutions like CRISIL etc. have also been studied and analysed to get a proper perspective. My personal exposure to issues involved in implementation of NHDP, during my posting as Project Director, NHAI, Agra and personal interactions with officials of National Highway Authority of India has also helped in this study.

The data so collected have been analysed through simple statistical analysis to find out actual performance of projects under different modes of delivery. An effort has been made to analyse the underlying reasons for preference of BOT (Toll) mode over EPC & BOT (Annuity) mode based on the analysis of the projects under NHDP.

2.5 Limitation:

The present study intended to compare the performance of highway projects under PPP mode with those under EPC mode. As most of the PPP projects have been completed in last 5 years, this becomes the inherent limitation of the study. Similarly the growth in world trade has been affected very seriously due to global financial crisis; this would also have affected the traffic growth / toll collection in 2008-09 and 2009-10. The financial crisis has

also caused serious problem of funding for on-going projects, thereby affecting the timeliness and cost parameters of on-going projects.

The contract period of EPC projects generally varies from 1 to 3 years while in case of BOT(Toll) & BOT(Annuity) projects the concession period varies from 15 to 30 years. So it will not be possible to analyse the disputes which may arise in BOT(Toll) & BOT(Annuity) at later stage. Further, a change in policy since January, 2009 that 80% of the project land should be acquired before entering into a agreement, have resulted into early completion of projects. The most of the EPC Projects are awarded before January, 2009 while only few BOT(Toll) & BOT(Annuity) projects were awarded before January, 2009. This may skew the available data making it difficult to project the trends in parameters for different modes.

Availability of data with NHA itself may be one of the limitations of the study. It is possible that all the data relating to traffic and revenue collection for individual projects may not be available at NHA headquarter. It would not be possible to collected and analyse such data.

Time limitation would be the third and key limitation of the study, therefore would involve simple statistical techniques for comparatives analysis. However, the study would enrich the existing body of knowledge by offering insights to widen and deepen the knowledge base in the area.