

# Diagnosis of Road Sector Performance

**This diagnosis of the road sector aims to establish the potential benefits and application of the introduction or expansion of a PPP program. The questions reflect the importance for policy makers of having a performance measurement system based on targeted indicators to provide a rational basis for the consideration of PPP and evaluation of its effectiveness in terms of improved road condition, user service and resulting cost efficiencies.**

Performance of the transport sector is shaped, more particularly by cost structure (fixed, variable and sunk costs), institutional arrangements (e.g., assignment of responsibilities, decision flow), market structure (e.g., competition, barriers to entry), geographical features (land value and land use), technology (know-how, economies of scale), and durability (of both infrastructure and services).



A Sourcebook for Poverty Reduction Strategies, World Bank, 2002

Key questions to establish a perspective on the road system's performance include:

- What are the measured results for the performance of the road sector?
- Are services provided efficiently, including responsiveness to user demand?
- Is public expenditure for the sector adequate for addressing the sector issues?
- Which market failures are being tackled?
- Is there any need to reform the recurrent cost funding mechanism? If so, in what way?
- In the current development of a road project or program, what are the tasks conducted by the public sector? by the private sector? Which entities are in charge of conducting these tasks?

Additional questions with multilevel governments (central and regional), include:

- How do current inter-governmental fiscal relations affect transport investment and maintenance at the national, State, and local levels?
- Are these efficient and responsive to the needs of the poor?
- What is the local fiscal capacity if some transport responsibilities (for example, road maintenance) are to be decentralized?
- Are state-owned enterprises' financial obligations/deficits on budget?

This analysis may be completed by a diagnosis of sector performance indicators. This diagnosis is established from the point of view of the road transport policy institutions which are concerned with the efficiency of: investment allocation to various road agencies, pricing, cost recovery for road-related usage (fuel prices, tolls) and compliance with road laws and regulations.

The view of other parties (road network users, transport service suppliers, investors and roadway suppliers etc) is also of interest and should be sought.



A Conceptual Performance Indicator Framework for the Road Sector, PIARC, 2004

## Sector performance indicators

Most road Administrations use a range of indicators to measure the condition of their highways and bridges. However, few Administrations have developed a means of evaluating the performance of the overall system or highway network on a systematic basis. Because of the lack of updated data, it is often difficult to adequately determine the status and trends of the condition of the network.

It would be valuable for road authorities to first evaluate the global transport sector before focusing on the road sector, in order to gain a perspective and obtain a diagnosis of the whole country's transport situation, which would be of great assistance in orienting a global transport policy. A few key indicators can provide initial summary information on the national transport system's condition and performance, especially by highlighting excessive costs, bottlenecks, and barriers. They can be used as comparators with other countries.

For road authorities designing or conducting reforms, indicators are particularly useful to: (i) identify the strengths and weaknesses of the road sector and the most promising areas for making efficiency gains, (ii) regularly evaluate the outcome of the reform and thus be able to adjust their actions.

Indicators will assist policy-makers introducing or reforming a PPP policy. Such indicators shall enable the identification of those areas where the private sector is performing more efficiently.

All indicators are partial measures and therefore they have limitations and must be interpreted with care. Indicators can be useful "signals", but they should be viewed for what they provide: indications not conclusions. So, provided that information is processed with sufficient care, a diagnostic profile and analysis can be put together, most desirably at a sub-national/regional level, based on quantitative and qualitative indicators.

More in-depth analysis of a country's transport sector may be desirable for exploring the relative efficiency of the public and private sectors in transport infrastructure and services.



The Use of Sectoral and Project Performance Indicators In Bank-Financed Transport Operations, A First Edition Note, Colin Gannon and Zmarak Shalizi, The World Bank (1995), page ii (executive summary).

## Key indicators to assess the global efficiency of the transport sector:

Despite the efforts of many countries, there has been no transparent measurement system or comparable standards for evaluating the performance of road systems. The array of possible Performance Indicators is vast and lists of indicators can never be exhaustive. A set of indicators needs to be tailored to reflect the fundamental roles of transport and government objectives, as well as data availability, sector and country environment.

As such, they differ from country to country; however, very similar categories of indicators are chosen by numerous road agencies to reflect the performances in service levels, accessibility, mobility, safety, and environment. For example, the following table by Gannon and Liu proposes key general indicators for the transport sector as a whole, grouped together into top 10 areas (from institutional to sector level).

- policy situation,
- level of transport activity,
- market structure and regulatory regime by mode,
- infrastructure condition,
- accessibility,
- tariffs for basic transport service,
- speed and reliability of services,
- safety,
- financial sustainability,
- environmental impact.

A detailed list of these indicators can be found in:



Extract from: Assessing Sector Performance: top ten areas, Gannon & Liu, The World Bank, 2000

## Specific indicators to assess road (sub) sector and network efficiency

Specific indicators may be introduced for each sub-sector/mode and part of the network (e.g. highway, gravel road, etc.). At this level, “desirable” and “best practice” are suggested but these should be treated as provisional guides only. The best combination should be found with regard to relative cost and (relative) performance gains. The reference below shows a proposed structure for road sector indicators, comments on their relevance to road policy goals and provides benchmarks of performance achieved by various countries.



The Use of Sector and Project Performance Indicators In Bank-Financed Transport Operations, Gannon & Shalizi, The World Bank, 1995

Similar sets of indicators have been developed by various road agencies and international institutions:



Performance Indicators for Australia, Asset Management of the Road Sector, OECD, 2000.



Road Sector Performance Indicators for African Countries, Africa Transport Technical Note, SSATP, 1999.

### Contract performance indicators

One of the most well-established benefits of PPP is its proven ability to deliver projects on time and to budget. This benefit is represented in the Value for Money analysis and the use of the Public Sector Comparator (Module 5 -> Identification, Priorization and Selection -> Value for Money and the Public Sector Comparator).

However, possible benefits may only be quantified if a sufficient amount of data exists on contract performance, including construction period, final contract amount including claim payments and final quality and level of service.

Irrespective of its use for Performance Based Contracts (PBC), such data could indicate variations in levels of contract performance in different roads sectors or depending on contract type or nature of private contractor and would thus provide valuable input into assessment of performance of conventional procurement methods and orientation of the PPP strategy.

### Monitoring indicators

Data required for generating performance indicators need to be included under the regular monitoring procedures used for the planning and management of road expenditure for reasons of efficiency and to avoid duplication. For pavement-related information, this data is the main input of pavement management systems (PMS) used in strategic road management and maintenance planning: Module 2 -> Scope -> Performance Indicators for Maintenance Works.

#### World Bank: Transport Results Initiative

The central Transport Unit of the World Bank is taking stock of the measures and indicators which are applied for the key transport sector. Initial assessments of data available at the international level, such as through the International Road Federation, confirms significant gaps in relation to both the priority needs of World Bank client countries and the expectations of development agencies.



The Data Chase: What's Out There on Trade Costs and Nontariff Barriers?,  
Shweta Bagai and John S. Wilson,  
The World Bank, World Bank Policy Research Working Paper 3899, April 2006