



Preparing a National Transport Strategy Suggestions for Government Agencies in Developing Countries

John Lee and John L. Hine



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PREPARING A NATIONAL TRANSPORT STRATEGY

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**THE WORLD
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**TRANSPORT
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CONTENTS

Contents	v
Acknowledgments	vii
Abbreviations	ix
Preface	xi
1 What is a National Transport Strategy... and why have one?	1
1.1 What is an NTS?	1
1.2 Why have an NTS?	2
2 Key steps in developing an NTS	3
2.1 Who should develop an NTS and how?	3
2.2 Allocation of resources to the transport sector and to sub-sectors	4
2.3 Administrative resource and data constraints, and technical solution choices	5
2.4 Consultation and transparency	6
2.5 Framing answers to the right questions	7
3 Components of an NTS	9
4 Objectives	11
5 Policy principles	15
5.1 Institutional policies	16
5.2 Planning and investment policies	29
5.3 Operational, regulatory and licensing policies	34
5.4 Pricing, cost recovery, taxation and subsidy policies	38
6 Strategies for achieving objectives	43
7 What should the NTS look like?	47
8 Making the NTS work and measuring the strategy's effectiveness	49
8.1 Requirements for effective implementation	49
8.2 Measures of effectiveness.....	49
8.3 Consultations and external scrutiny	49
Annex: Country National Transport Strategies reviewed	53
References	55

BOXES

Box 2-1. National transport planning models.....	6
Box 2-2. Objectives, policies and strategies	7
Box 5-1. Highway agencies	17
Box 5-2. Significance of user costs in relation to road agency costs	18
Box 5-3. Approaches to private provision of road infrastructure	19
Box 5-4. Securing value for money through PSP	19
Box 5-5. Alternative models of railway infrastructure and operations	20
Box 5-6. Separation of railway infrastructure and operations	20
Box 5-7. Average and variable costs	21
Box 5-8. Railway concessioning	21
Box 5-9. Unit transport costs by alternative modes, by distance	22
Box 5-10. Port management models	23
Box 5-11. Multimodal transport facilities.....	25
Box 5-12. Importance of quality attributes of transport	26
Box 5-13. Responding to changing markets	27
Box 5-14. Route/service franchising	28
Box 5-15. Key institutional reforms	29
Box 5-16. Technical standards	31
Box 5-17. Allocation of risks	33
Box 5-18. Benefit of stakeholder participation in planning	34
Box 5-19. Urban bus route franchises	36
Box 5-20. Safety rating and license renewal	37
Box 5-21. Measures to improve enforcement	38
Box 5-22. Road damage and the structure of user charges.....	39
Box 5-23. Road funds.....	41

FIGURES

Figure 2-1. Strategy planning levels	4
Figure 3-1. NTS components: objectives, policies, strategies and plans.....	10
Figure 8-1. Broad assessment of coverage of NTSs for the sample reviewed	51

TABLES

Table 4-1. Achieving objectives: How can transport initiatives help?.....	13
Table 5-1. Policy principles and the kinds of questions they raise	15
Table 6-1. Examples of strategies to achieve objectives.....	43

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ABBREVIATIONS

2G	Second Generation
3PL	Third Party Logistics
AQU	Air Quality Unit
BOO	Build Own Operate
BOT	Build Operate Transfer
EIRR	Economic Internal Rate of Return
EU	European Union
FIRR	Financial Internal Rate of Return
FTAC	Freight Transport Advisory Committee
GDP	Gross Domestic Product
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
NPV	Net Present Value
NTS	National Transport Strategy
PAS	People, Activities and Systems
PNG	Papua New Guinea
PPIAF	Public Private Infrastructure Advisory Facility
PPP	Public Private Partnership
PRSP	Poverty Reduction Strategy Paper
PSO	Public Service Obligation
PSP	Private Sector Participation
SOE	State-Owned Enterprise

PREFACE

Most governments find it useful to prepare a National Transport Strategy (NTS) document in order to help guide the development of the country's transport system in the medium and long term. In this way an NTS can help provide a framework for the development of detailed policy and legislation as well as identifying investment priorities.

The purpose of this report is to assist policy makers and planners in developing countries in the preparation of an NTS. The report highlights lessons that can be learned from NTSs developed by different countries around the world. It draws upon transport strategy and policy documents from 23 countries and from a range of World Bank source material. The aim is not to provide a ready-made strategy document but to identify relevant questions and choices that need to be considered in preparing an NTS. At each stage of the development of the NTS, a checklist of considerations is given, and, where appropriate, examples of good and bad practice are identified.

Within the report particular attention is paid to separately identifying **Objectives, Policy Principles** and **Strategies**. **Objectives** express society's goals, which should reflect the general socio-economic goals of the country—goals that are shared with other (non-transport) sectors. **Policy Principles** represent the principles that should govern the pursuit of those goals. They are the guiding philosophy for decisions within the sector. **Strategies** represent the ways in which goals are to be achieved in line with the policy principles.

A wide range of policies relating to the sector as a whole and to different modes of transport are considered in the report, covering topics such as investment planning, private provision of road infrastructure, transport services, rail infrastructure and operations, ports and multi-modal transport, route service franchising, pricing, cost recovery and taxation. In addition, a series of examples of how strategies can be formulated based on objectives and policy principles are given.

Throughout the report, consultation and transparency in the preparation of an NTS are stressed. It is believed that that an NTS is far more likely to be successfully implemented if the process of preparation is open to public scrutiny.

It is observed that too often objectives are formulated in a way that implicitly embraces a certain strategy (that is, shifting traffic from road to rail, privatizing state owned enterprises or building more expressways) or that objectives are defined in purely physical terms such as the development of transport capacity, rather than in terms of human or environmental welfare. By defining objectives in this way, the range of solutions that can be adopted to meet the fundamental goals of society or solve underlying issues becomes unnecessarily limited.

Other weaknesses identified in National Transport Strategies include:

- A tendency to focus too much on investment rather than institutional, regulatory and pricing measures to achieve a desired result;
- A tendency to avoid taking a comprehensive approach towards dealing with poverty, safety and environmental issues;
- Poor sustainability with regard to the environment, pricing and cost recovery.

The report concludes with a broad assessment of the strengths and weaknesses of NTSs reviewed for the report.

PREPARING A NATIONAL TRANSPORT STRATEGY

1 WHAT IS A NATIONAL TRANSPORT STRATEGY... AND WHY HAVE ONE?

Governments in many countries make public the strategies they intend to follow in developing and managing the transport sector. For perfectly valid reasons, these rarely follow a common format—they might emphasize different aspects of transport, for example, or have different kinds of target readership, or deal with quite different transport systems—but several common types of issues need to be addressed if the resulting strategy is to be useful and effective.

The purpose of this report is to highlight the lessons that can be learned from efforts around the world to develop a National Transport Strategy (NTS).¹ It does not provide an off-the-shelf NTS; instead, it identifies the questions that need to be asked and the choices that need to be made in framing an NTS that suits the circumstances of the country in question. The report draws upon documents from a range of countries and from World Bank sources relating to the Transport sector.² At each stage it offers a checklist of considerations and, where appropriate, examples of good and bad practice that may help those facing choices. Its aim is to encourage policy makers and planners to adopt a structured approach to assessing sector shortcomings, defining goals and mapping out the steps needed to achieve these.

All transport modes—road, rail, maritime, air and waterway—are covered, but one of the report's themes is consistency in the rules applicable to them all to encourage an economically efficient allocation of investment and other resources.

1.1 What is an NTS?

There is no single “best” NTS—countries differ in their level of development and rates of economic growth, the structure and characteristics of their transport systems, the patterns of demand and needs of transport users, the respective roles of government and private sectors, and their governments' overall philosophy and priorities. As this review has found, countries' approaches in preparing an NTS also differ: some discuss individual transport modes (road, rail, maritime, urban and so on) separately, some are written with a particular theme in mind (for example, poverty reduction, rural accessibility, international linkages), others justify the activities of a government ministry, others again might be intended to serve as a blueprint for sector-wide reform. By no means will every country want to tackle all the questions raised in this report. Even so, despite the different, underlying aims, good NTSs share some fundamental features:

- A set of basic objectives;
- A set of principles to guide the efforts to meet these objectives;

¹ An immediate difficulty, of course, is that the success of different NTSs, in terms of sector outcomes, cannot easily be assessed by a broad review such as this. Lessons can only be drawn about how well selected examples clarified objectives, issues and choices, and gave useful guidance to decision-makers.

² See <http://www.worldbank.org/transport>.

- An assessment of the adequacy of existing arrangements in the sector in relation to both of the above;
- A set of strategies for addressing shortcomings and meeting the objectives in accordance with the policy principles, and within the funding and institutional constraints that are expected to prevail;
- A set of prioritized actions—plans—that are key steps in implementing the strategies;
- A set of procedures to be used to check whether the strategies and plans are implemented in ways that are conducive to achieving the objectives in accordance with the policy principles, defining the level of involvement of central government at the sub-national level (regions, cities, and so on).

1.2 Why have an NTS?

AN NTS can be useful in:

- Helping people to understand the reasoning behind their government's decisions and actions in the sector by explaining the government's goals and the principles that guide it;
- Showing how actions in different policy areas are linked in pursuit of common goals;
- Guiding decision-makers by showing them the context of their actions and their expected progress towards specific objectives (thereby also providing the basis for a system of monitoring and accountability);
- Helping to ensure consistency in the application of policy principles across all transport sub-sectors and in pursuit of different objectives;
- Helping to identify gaps and shortcomings in existing policies and strategies, thereby flagging priorities for addressing them.

2 KEY STEPS IN DEVELOPING AN NTS

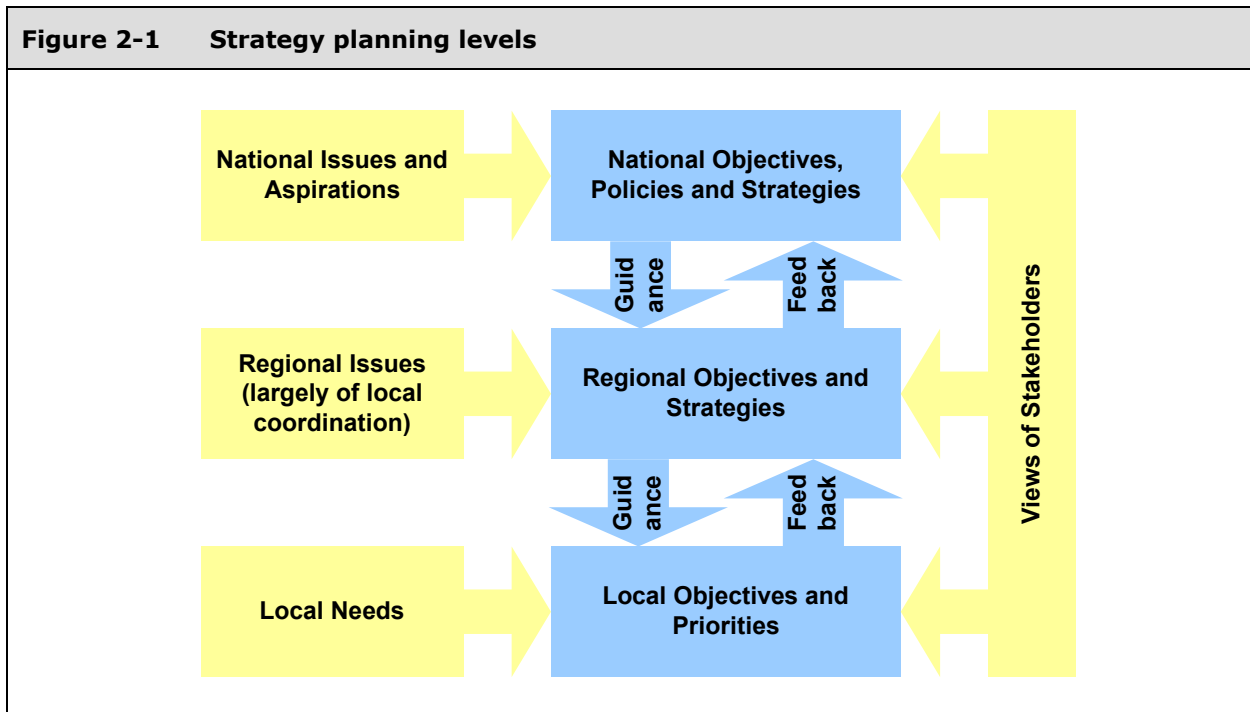
2.1 Who should develop an NTS and how?

Countries approach the task in different ways, depending on their administrative systems and the intended purpose of the NTS. Some link it to the process of developing multi-year national development plans. China, for example, bases national socio-economic development on five-year plans and, although its strategies for transport are produced by different ministries (the Railways Ministry is separate from the Ministry of Communications, which is responsible for the other modes), these are consistent with a broader strategic framework. Others (for example Fiji, New Zealand, among many) tend to produce them when there is a change of government and of policy priorities.

There are also differences between “top-down” and “bottom-up” approaches. In small countries like Bhutan or Guyana, with few levels of administration, the national government tends to prepare a (top-down) plan for implementation by weaker, lower-level administrations or sectoral agencies. In other countries, a (bottom-up) plan emerges as a compilation of proposals made by local and regional administrations. Others again combine the two, often in an iterative process that may take several months, because it serves as a blueprint for multi-year plans and provinces and local governments have considerable responsibilities for infrastructure development and management. China’s plan, for example, represents a mix of the two approaches, the result of extensive consultations over local and national policies as well as priorities.

There can be drawbacks to each approach. A top-down NTS lacks the flexibility to identify and adjust to local needs at the implementation stage. A bottom-up approach often results in a “shopping-list” of projects without a consistent policy framework. A plan that is fixed for many years can lack flexibility in responding to unforeseen changes in circumstances.

Ideally, even for countries with quite different administrative structures, the NTS should represent a consensus of views on the way forward (Figure 2-1): the views of national-level governments on the basic objectives and principles of sector policy; the views of lower-level governments on the most suitable ways of meeting the needs of their constituencies; and the views of the different stakeholders at each level.



The mechanism for developing an NTS, therefore, should provide for inputs from each administrative level and for a process of review, revision and feedback. Sometimes this throws up conflicting objectives and priorities—a useful output of the consultation process. For countries whose systems dictate a top-down approach, the guidance and coordination from central government will be strong; in those that use a bottom-up approach, the mechanism for developing an NTS will serve mainly to give a consistent framework for local plans and priorities.

2.2 Allocation of resources to the transport sector and to sub-sectors

The allocation of government budgets among different sectors and sub-sectors is clearly a vexed issue for which there is no simple and easy solution. Inevitably, a host of economic, social, environmental and strategic considerations may be taken into account before political decisions are made on budgetary allocation. Nevertheless, in developing a National Transport Strategy, a clear stance should be taken on whether the transport sector as a whole has sufficient resources in comparison with the competing claims of other sectors and whether the balance of resource deployment between different transport sub-sectors needs adjusting. There is a range of ways for finding guidance on allocation issues. The principal methods are as follows:

- **Cross-country comparisons.** These provide an indication of where the country stands, *vis-à-vis* other countries with similar characteristics and levels of development. The analysis can be based on factors such as the size of infrastructure or volume of service (per person, per unit of GDP, per unit of area, per vehicle and so on), their accessibility to the population (that is, average distance to the road network), and the amount and composition of expenditures going to different forms of investment, service provision and maintenance.

- **Economic internal rate-of-return (EIRR) analysis.** Project appraisal documents and sector studies that include strategic, programming and network analysis often provide economic rates-of-return data for investments in the transport sector. In analyzing this data, it is important to look at the rates of return of marginal projects (that is, the best projects that have been omitted or delayed because of shortage of funds, or the projects with the lowest rates of return that have been included in the program). So, data relating to marginal projects are more important from a budget allocation point of view than those that relate to the best, or to average, projects. If there are large differences among different sectors (or sub-sectors) in the rates-of-return of marginal projects, then there may be grounds to consider the reallocation of resources. However, it should also be remembered that for each type of project there are appraisal conventions that will often ignore both externalities and income distribution effects. Hence, rates-of-return relating to different types of project are not automatically comparable. Nevertheless, a rate-of-return analysis can provide important lessons. For example, road maintenance has been found to give very high rates-of-return, yet it is rarely properly funded.
- **Impact evaluation studies.** Impact evaluation studies that look at the past or existing investment projects can provide an indication as to how different types of investment projects meet their overall objectives. Most often, these studies analyze the effects of particular investment projects. However, they can also be based on statistical analysis to determine the effect of regional or national programs. Past evaluation studies can often provide a wider look at project impact than the conventional economic cost-benefit project analysis. Social, environmental, and to some extent multiplier effects (that is, the effects on the wider economy) can be investigated. Although it is not so straightforward to draw conclusions about budget allocations compared with rate-of-return calculations, the studies can provide some insights into what type of projects have been most successful.
- **The achievement of government targets.** Guidance on allocation can also be based on the degree to which access to infrastructure and associated services meet recognized government objectives and targets. For instance, if targets are close to being met for some sectors or sub-sectors, but are clearly far from being met in others, this may be an indication that more resources should be allocated to those that are deficient.

2.3 Administrative resource and data constraints, and technical solution choices

The choice of any technical solution used in preparing an NTS depends upon available administrative resources, and whether detailed analysis is needed to resolve key policy choices or expenditure options. The effort devoted to preparing an NTS should reflect the complexity of the policy and investment choices faced. Even for small countries with limited resources, a detailed analysis may sometimes be needed before critical choices can be made on, for example, the best way to organize and subsidize essential services to isolated regions, or set priorities among several alternative transport corridors or between road and rail transport. Often, these choices can be resolved by the use of national or regional transport planning models (Box 2-1). In other cases, even for large countries like China, the decision-making process, the division of institutional responsibilities among ministries and the iterative top-down/bottom-up approach to assembling plans in each sub-sector might make it unnecessary to carry out complex analyses of inter-modal or investment choices. In practice, whether or not a complex analysis of issues and options is necessary will depend on how contentious or difficult the choices are, on the degree of unanimity within government over the options, and whether it is needed to convince investors, doubters or the general public.

A major issue facing transport planners in many low- and middle-income countries is the general inadequacy of basic data on the transport sector. In this respect, the transport sector usually lags well behind other sectors such as agriculture, which usually has a well-funded department collecting data and regularly publishing basic statistics. Too often, the main sources of data, particularly for the dominant road sub-sector, lie in “one-off” investment appraisal reports and specific studies. For many countries, main road traffic counts and condition surveys are the only nationally organized road transport data collected on a regular basis. National household surveys tend to ignore transport indicators such as the Rural Access Index, or the share of household expenditure on transport and household trip making. Often, very little is known about the incidence of trip making, trip origins and destinations, road accidents, transport tariffs, commodity composition, rural and urban transport (both for infrastructure and services) and the main characteristics of the vehicle fleet. Most of these data are crucial to monitoring the overall performance of the sector and consideration should be given to finding resources to collect such data on a regular basis. It is also important to involve and encourage national statistical institutions to undertake regular transport surveys and integrate transport indicators into household surveys.

2.4 Consultation and transparency

The benefits of an NTS are more likely to be realized if the process of preparing and monitoring its implementation are open to scrutiny. Governments generally benefit from feedback when they are open about their goals and their plans for achieving them. The process of preparing an NTS, therefore, should provide for:

- Consultation with all interested parties—industry associations, transport service providers and their customers, non-transport ministries (those responsible for planning, regional development, trade, industry, competition, environment, social welfare, and so on), local governments, academia and other stakeholders—preferably through a permanent consultative body such as an advisory council;
- Open discussion and scrutiny of NTS issues, options and proposals with stakeholders, giving the public and the media ample opportunities to comment on and access relevant information through press releases, newsletters, discussion forums and/or a website;
- Procedures for monitoring performance against specific targets, preferably by independent (that is, non-government) reviewers;
- Arrangements for updating or adjusting the NTS in the light of changed circumstances or priorities.

Box 2-1 National transport planning models

National or regional transport planning models are often useful in comparing the consequences of alternative scenarios for investing in transport capacity. In simple terms, they involve forecasting future transport demand between origins and destinations and assigning this to alternative network paths depending on the characteristics of individual links and nodes, which in turn depend on the price, available capacity and other factors affected by policy or investment. The scenarios are usually compared on the basis of costs and benefits (savings in transport costs and travel times) over the planning period.

In practice, it is often difficult to maintain complex transport planning models as an up-to-date planning tool because specialized knowledge is required, the data requirements can be very large and the data expensive to collect. After the initial effort, they often tend to fall into disuse.

Good examples of the above approach include South Africa³ and a growing number of countries that use a website to encourage review and feedback (for example Swaziland⁴). Developed countries also

³ <http://www.transport.gov.za/library/docs> and http://www.polity.org.za/govdocs/white_papers/transwhite.html.

provide useful examples of interactive and informative policy formulation and planning.⁵ Section 8.3, at the end of this report, gives some suggestions to help establish effective arrangements for consultation and transparency.

2.5 Framing answers to the right questions

The approach suggested in this report follows a set of key questions facing policy makers and planners along the lines indicated earlier in Section 1.1; What are the overarching **objectives** we want to achieve? What fundamental **policy principles** should guide our efforts to achieve these objectives? What are the **shortcomings** in existing arrangements, both now and in the future—that is, to what extent do they fail to meet these objectives or apply these policy principles? Given forecast demand, the identified shortcomings and the investment and institutional resources likely to be available over the planning period, what **strategies** are likely to be most effective in achieving the objectives in accordance with the policy principles? What are the most important first steps in **implementing** these strategies?

While transport administrations do not necessarily follow these logical steps explicitly, even the simplest strategy generally includes an assessment of needs, a statement of objectives and an outline of strategies for achieving them.⁶ Those without an NTS would benefit by adopting the objectives > policy principles > shortcomings > strategies > implementation approach suggested in this report, even if it need only apply to a subset of the issues discussed below.

Box 2-2 Objectives, policies and strategies

Objectives express society's goals.

Policies express the principles that should govern the pursuit of those goals.

Strategies are the ways in which goals are to be achieved in accordance with the policy principles.

⁴ <http://www.gov.sz/home.asp?pid=1231>.

⁵ See, for example, Department of Infrastructure, Transport, Regional Development and Local Government, Australia (<http://www.dotars.gov.au/index.aspx>)

⁶ Examples: Bhutan (reviewed in World Bank, *Bhutan – Transport Sector Note*, Report No. 28522-BHU, August 2004); British Virgin Islands (<http://www.dpu.gov.vg/Plans/NIDS/Transportation>).

3 COMPONENTS OF AN NTS

The links among the components of an NTS—objectives, policy principles, strategies and plans—are shown in Figure 3-1, which also introduces a suggested classification of policy topics, discussed below.

There are several advantages to structuring an NTS this way, even to the extent of using the graphic format shown. It illustrates clearly how actions in each policy area (institutional, planning, operational and so on) combine to produce intended outcomes, and the links among them. It also encourages consistency in applying the policy principles across modes and in the pursuit of each objective.

Policy principles guide the pursuit of objectives. Like objectives, they will vary between countries—those of a socialist government, for example, will differ from those of a country that tries to minimize government intervention in a market economy—but they should at least be capable of answering the following types of question:

➤ **Institutional policies**

- What are to be the respective roles of government and the private sector in developing and operating transport infrastructure and services? What limits, if any, are to be put on the role of each?
- What are to be the respective roles of central government, other levels of government, and public authorities?
- How should public sector functions—for example those of policy formulation, planning, regulation, investment, and operations—be organized?

➤ **Planning and investment policies**

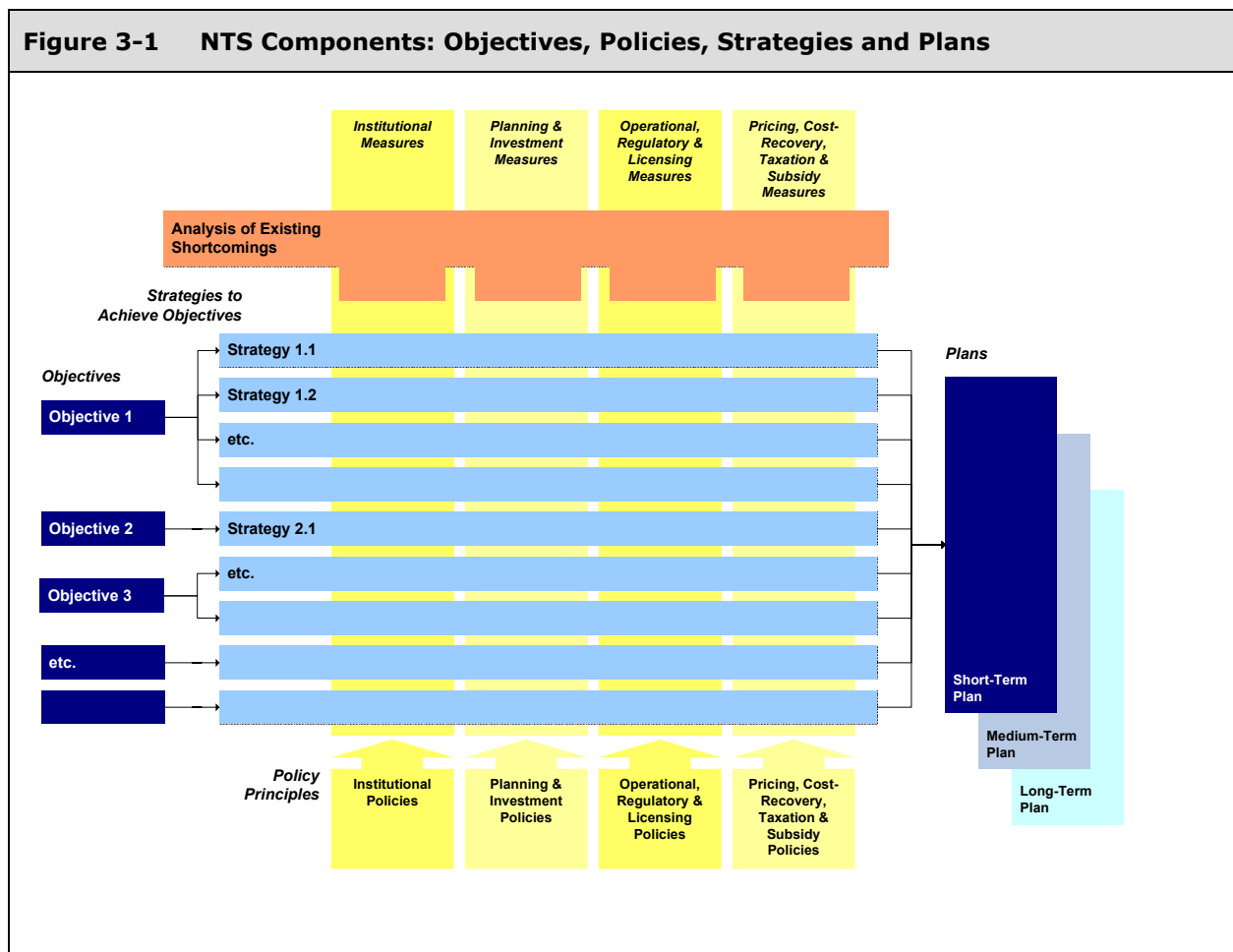
- What planning, environmental, safety, economic and/or financial criteria are to govern public investments in transport infrastructure, facilities and services?
- What controls (for example permit requirements, restrictions on foreign investment) should apply to private sector investments?

➤ **Operational, regulatory and licensing policies**

- What is the role of regulations, and what regulatory or licensing controls should be imposed over transport infrastructure and service operations?
- To what extent should competitive markets in transport infrastructure and services be encouraged? How should they be established, maintained, monitored and/or controlled? What about situations where public and private services compete?
- How can transport services and infrastructure promote development? How can we curb congestion and increase city competitiveness?
- How should public safety and the environment be protected?
- How can we reduce the risk of transmission of HIV/AIDS within transport projects and transport services?
- How should regulations be imposed or enforced in a way that is effective, minimizes costs to transport operations, and allows responsiveness to demand? How can corrupt practices be eliminated?
- What incentives or other measures should be used to complement regulatory controls over transport operations?

➤ **Pricing, cost recovery, taxation and subsidy policies**

- What principles should govern tariff setting for publicly owned transport infrastructure and services? What controls, if any, should be applied to private sector tariffs, and under what conditions?
- What level of cost recovery is to be achieved for publicly owned transport infrastructure? How should charges be structured to recover costs? How should deficits be financed? What should be done with surpluses?
- What is the role of pricing, cost recovery and taxation in relation to competition among transport modes? What types and levels of taxation should apply to public and private transport infrastructure and services? Under what circumstances might exemptions or concessions be applied?
- Under what circumstances would government subsidies be considered justified? How would they be applied and managed?



4 OBJECTIVES

Objectives should reflect the socio-economic goals of the country in question—goals shared with other (non-transport) sectors. They should not be stated in a way that presumes the best way of achieving them—that is the purpose of a strategy. Examples of good objectives might refer to the standard Millennium Development Goals (MDGs), which include goals such as eradicating extreme poverty; promoting gender equality and empowerment of women; achieving health and education targets; and ensuring environmental sustainability. Other goals could be the efficient use and allocation of resources; sustainable financing; equity, or fairness; affordability; quality of life; public safety; an efficient, effective and responsive public administration. Poor examples—since they also imply a strategy—would be: shifting traffic from road to rail, or from peak to off-peak periods; subsidizing rural transport; reducing fuel consumption; privatizing state-owned enterprises (SOEs); lowering the speed limit; banning heavy vehicles; building more expressways; separating regulatory and commercial functions. A common failing among the NTSs reviewed is to define objectives in purely physical terms—especially the development of infrastructure or transport capacity—and not in terms of human or environmental welfare.

Addressing user needs. It is important to recognize that objectives can conflict with one another, and that different groups may have different views about which are the most important. It is, therefore, worth spending time discussing and elaborating them, resolving choices among them when they appear to conflict and—most importantly—linking them to the government's overall objectives and priorities for socio-economic development. A good starting point is the Poverty Reduction Strategy Paper (PRSP) prepared by many countries.

Transport services should be delivered in a way that responds to the different and specific needs of users. Transportation is vital for breaking out of poverty. However, in many low-income countries, there are still major shortcomings and disparities in the availability and quality of transport services. For example, women tend to have less access to motorized services than men. There are also issues of violence and security in the streets and on public transport, which place particular constraints on women's mobility. People with disabilities—particularly those who are visually impaired or cannot move around easily—are often denied access to essential transport services and are thus prevented from attending school, having a job, or receiving medical treatment.

The availability of transport services for the poor, women, and other disadvantaged people has emerged as an important issue in the context of a number of transport policies. It requires the removal of institutional and physical barriers and the enhancement of incentives to increase the accessibility of diverse individuals and groups to transport opportunities. A transport strategy for all users should consider issues of urbanization and access to safe and efficient transport services for economic empowerment; socio-economic consequences linked to increased mobility; how users can contribute to the planning and development of transport services; and how transport can also be a source of business and incomes for the poor, including women.

Mitigating social and environmental risks. There are important social and environmental risks relating to planning decisions about transport systems. In the urban context, transport can be a significant contributor of noise, community disruption, consumption of open space and degraded air quality. Transport is the fastest growing source of CO₂ emissions and continued expansion of vehicle ownership and road traffic lead to high concentrations of air pollutants in the atmosphere, with serious respiratory and other health effects for the population, particularly in urban cities. Increasingly, many of the leading causes of death (high blood pressure, high cholesterol, and obesity) in developing countries are related to transport activity and associated lifestyle patterns that result in reduced

physical activity. There are significant direct health costs associated with road accidents—an estimated 1.2 million people dying each year in road accidents and up to 50 million people being injured annually—disproportionately affecting the poor. In addition to road injuries, strong evidence links transport routes to the spread of HIV, suggesting that the sector is a major vector of the disease. Likewise, transport sector workers are vulnerable to the disease because of their high-risk behavior at truck stops and border towns, with the potential to have an impact on the effectiveness and reliability of the sector.

Designing transport systems to improve the condition of the poor implies anticipating the possibilities of socially and environmentally undesirable consequences. A transport strategy should seek to optimize the social and environmental benefits of the sector's policies and investments, while minimizing negative impact, and to plan for measures of amelioration and control. An environmental and social focus in a transport strategy could include principles for transport safety (road safety, aviation safety, improved passenger comfort and safety in urban transport projects); the mitigation of HIV/AIDS; emergency transport for health access; and appropriate policy responses to the physical and economic linkages among transport and energy efficiency, vehicle emissions, public health impact and long-term greenhouse gas outcomes.

Although objectives should not presume strategies, the very task of formulating them encourages the planner to think about how they might be achieved: What contribution can the transport sector make towards achieving this objective? What complementary measures might be necessary? Table 4-1 illustrates this process.

By their very nature, objectives tend to be “motherhood” statements—society's aspirations.⁷ So, in order for them to have value for an NTS, it is best to link them to quantifiable targets. Setting quantified targets allows government and external reviewers to measure progress on, and test the effectiveness of, the NTS. Some guidelines on quantifiable measures associated with objectives are listed in Section 8.2.

⁷ For this reason, it is inappropriate to suggest what they might be, or even to quote examples of what might be considered “best practice.” Just about every NTS reviewed for this report (see Annex A) includes a statement of objectives. Unfortunately, many such statements veer into the realm of policies and strategies, particular in smaller, less developed countries, where physical infrastructure is poor and embarking on physical projects is seen as an aim itself.

Table 4-1 Achieving objectives: How can transport initiatives help?	
Possible Objectives	Questions to be addressed
Sustained economic growth	How can transport initiatives best help achieve economic/income/trade growth? What are existing shortcomings in the transport system? Congestion and lack of capacity? Lack of adequate infrastructure? Inadequate maintenance? Inefficiencies in existing services? Is investment needed in new facilities and services or greater efficiency in existing services? How can investment be sustained? Are there market rigidities requiring deregulation, allowing services to respond more effectively to demand? Are transport modes failing to exploit their intrinsic advantages? How can a more level playing field be established among modes?
Efficient and demand-responsive services	How best can transport markets respond to users' needs? Are they constrained unnecessarily by regulations or market rigidities? Are there unnecessary restrictions on market entry, operations, prices or service quality? Is competition effective in lowering prices and improving service quality? Does the industry structure limit opportunities for higher-quality, more efficient services to develop? Do operators have adequate management capability and access to funds for investment?
Sustainable financing and maintenance of public infrastructure	Is funding for infrastructure development and maintenance adequate and sustainable? How can it be made more reliable? Are construction and maintenance standards cost-effective? Do users face charges that recover their attributable costs? Are the revenues channeled into improving maintenance? Is life-cycle management of maintenance effective? Are alternative solutions—for example performance-based contracts, outsourcing to an autonomous agency, privatization, community-based maintenance—likely to be more effective?
Poverty reduction, equity and affordability	How best can transport initiatives improve access for the poor and isolated? Is infrastructure providing adequate reach? Are there adequate employment opportunities for women in construction, maintenance and service provision? Are service-licensing regulations or tariff controls limiting the development of low-cost services? Could deregulation lead to greater competition, more flexible services and greater productivity? Are there essential services that would justify a subsidy? What is the most effective way of subsidizing these services?
Quality of life, safety and environmental protection	How effective are controls designed to protect public safety and the environment? Are management systems in place to assure the safety of transport infrastructure and services? Are safety enforcement procedures effective? How can they best be improved? Is corruption a problem? Are alternative measures, for example outsourcing of enforcement, pricing policies, incentives, education, likely to be more effective? Are there adequate regulations and policies in place to address HIV/AIDS issues both in construction and in the provision of services? Are transport facilities adequate for people with disabilities? Are there effective transport solutions that can help reduce greenhouse gas emissions and help the government meet internationally agreed targets to reduce global warming and climate change?
Efficient, effective and responsive public administration	Do existing administrative agencies provide efficient service? Are they following set objectives and held accountable for their performance? Is decision-making transparent and open to external scrutiny? Do stakeholders have a say? Would administrative functions be more efficient/effective if competitively outsourced?

5 POLICY PRINCIPLES

Policy principles are by no means “motherhood” statements, even though they too express aspirations and differ from one country to another. They provide the guiding philosophy for decisions in the sector. They require clear-headed thinking and often also special studies to resolve complex choices among alternatives. They are especially important if the sector is undergoing reform and the necessary adjustments involve radical change, with some groups gaining and others losing by the changes being made. The kinds of questions to be answered are illustrated in Table 5-1.

Table 5-1 Policy principles and the kinds of questions they raise	
Policy Principles	Questions to be addressed
<i>Institutional policies:</i>	
Roles of public and private sectors	What are the limits to the government’s role in the sector? Should it play a greater or lesser role in developing or operating infrastructure and services? Is its involvement resulting in inefficiencies or limiting opportunities for the private sector? Should it be confined to policy, planning and regulatory matters? Should it provide essential services itself?
Organization of government functions	Does the present administrative structure work efficiently and effectively? Are there incentives for effective performance? Should selected functions be assigned greater autonomy and accountability? Might there be advantages in establishing separate regulatory authorities?
<i>Planning and investment policies:</i>	
Criteria for public investments	Do existing procedures for long/medium/short-term planning enable decision-makers to anticipate future capacity requirements? Are planning/investment principles/criteria applied consistently across all sub-sectors? What are the minimum criteria for economic and financial return? Are projects required to meet specific environmental and safety standards? Can a case be made for advance provision of infrastructure to promote growth?
Controls on private sector investments	Are there areas where private sector investment is not encouraged? Why? Is there an adequate legal framework governing Private Sector Participation (PSP)? Are there procedures for dealing with unsolicited proposals? Is there a risk of private monopoly? Do PSP guidelines encourage competitive tendering for investment opportunities? Do concession agreements adequately identify and allocate risk?
<i>Operational, regulatory and licensing policies:</i>	
Role of regulations governing infrastructure and operations	What is the perceived role of regulations? Is their aim to facilitate competitive markets, protect safety and environmental standards and/or guide and control services? Do service/route licensing conditions limit market entry and competition or encourage them? Is there a procedure for reviewing regulatory impacts and effectiveness? Are licensing and regulatory controls effective in achieving their aims? If not, why not? Is the cost of regulation adding unnecessarily to the cost of transport?
Protection of public safety, infrastructure and the environment	How effective are existing measures in protecting public safety, infrastructure and the environment? Are agency responsibilities and accountabilities for safety performance clearly defined? What are the main factors contributing to accidents? Apart from stricter enforcement, are alternative ways of achieving safety or environmental objectives—for example through incentives or pricing policy—being tried? Are there better ways of penalizing poor safety performance or reducing air pollution and greenhouse gas emissions?
Enforcement of regulations	How effective is the enforcement of safety/environmental regulations? Is corruption a problem? Would decentralization or outsourcing of enforcement be more effective? Could more onus be placed on the operator, for example by linking safety/environmental performance with the issue/renewal of operating licenses?

Table 5-1 Policy principles and the kinds of questions they raise	
Policy Principles	Questions to be addressed
<i>Pricing, cost recovery, taxation and subsidy policies</i>	
Principles for tariff setting and taxation; price controls for private sector services	Are prices/tariffs set by the market or by regulation? Are price controls effective in achieving their aims? Do they have negative consequences for investment, innovation and service standards? What rules should govern when price controls are imposed? How should they be set/adjusted?
Cost recovery for public infrastructure	What should be the target level of cost recovery for public infrastructure? What principles should govern this? How should cost-recovery charges be structured? Should concessions apply? Do user charges also relate to objectives of capital financing and/or fleet restructuring? What should be the relationship between direct user charges and other fees/taxes imposed on users?
Pricing and inter-modal competition	Is pricing a tool for achieving objectives in relation to inter/multi-modal transport and the role of the respective transport modes? What principles should govern relative prices among modes?
Subsidy policy	Is there a role for subsidies? Under what conditions? Are they more effective in meeting goals than alternative measures to lower the cost of essential transport services? What form of subsidy is most suitable—cross subsidies, more targeted support or franchise arrangements?

5.1 Institutional policies

The role of government in providing transport infrastructure and services

The first of such questions is a key one: what are to be the respective roles of the public and private sectors in providing and operating transport infrastructure and services?

Infrastructure

Under what circumstances should the government provide transport infrastructure or continue to operate infrastructure it once provided? In many—indeed most—countries, roads, sea and river ports, public transport terminals, railways and airports, as well as safety-related infrastructure like navigational aids, continue to be the responsibility of central or regional governments. Other countries have privatized selected facilities or outsourced their provision or management to the private sector. Which is best?

The answer is that *either* can result in well-planned and efficiently-managed infrastructure, provided it incorporates appropriate incentives and monitoring arrangements that encourage effective management, efficient performance in pursuit of defined goals and an adequate and reliable source of funding.

Roads are usually built and managed by governments, but there has been recent interest in private provision, particularly of higher-class roads, and private maintenance of public roads under performance-based contracts. Where governments choose to retain responsibility, they sometimes delegate the task of building new roads and managing existing ones to a more autonomous *highway agency* or state-owned enterprise; India's National Highways Authority and South Africa's National Roads Agency are examples. This is done to bring a more independent, business-like approach to road asset management, and to insulate the task from bureaucratic civil-service rules and fluctuating government budgets. Such arrangements can benefit from an arm's-length relationship between the

government (as the owner) and highway agency (as the service provider), allowing the government to hold the agency accountable for its performance in managing the network (Box 5-1). Similar benefits can be derived from assigning responsibility to a private sector enterprise under contract.

Box 5-1 Highway agencies

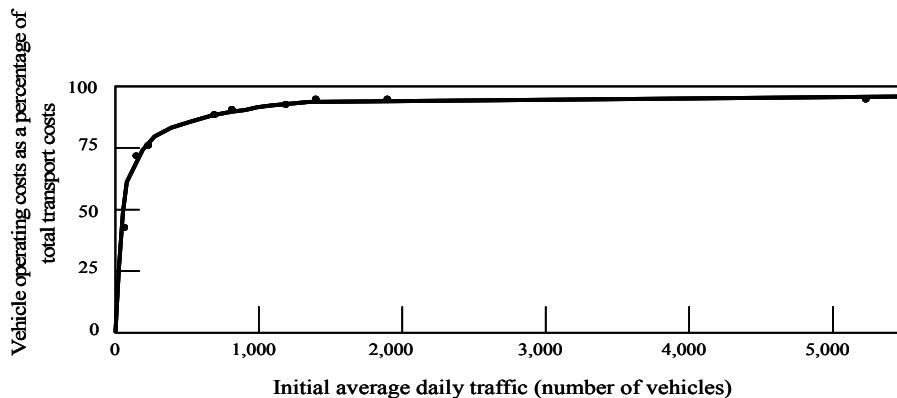
Even in the developed world, countries differ in their approach to highway management:

- In the UK, the Highways Agency manages the 10,000 km trunk road network on behalf of the government, from which it receives an annual budget. It is accountable to the Ministry of Transport for implementing annual and 3-5 year business plans.
- New Zealand outsources most functions other than policy formulation. It has corporatized and privatized its planning, design, construction and maintenance units, retaining only regulatory controls and a strict system of accountability.
- Australia has a federal structure, with most functions being the responsibility of the states and corporatized to a large degree. The National Transport Council acts as a policy coordinating body.
- In an attempt to reduce government deficits, Italy relies largely on individual project concessionaires to develop and manage its national network.
- Japan had to establish a refinancing agency to manage the large debts of its four previous public road corporations; it aims ultimately to revert to public sector management and to remove tolls.
- South Africa places emphasis on its corporatized National Roads Agency, funded mainly through government budget, but with commercial toll roads and some other functions competitively outsourced.
- Sweden relies on a more traditional public sector model, but with regional implementing agencies competing for contracts awarded by a road management division, which is held responsible for network performance.

Government-managed road networks suffer from having to compete with other sectors—education, health and others—for scarce resources. The result is almost invariably a lower-than-optimal level of maintenance funding and consequently increased costs for road users. These additional costs, the result of rougher pavements and lower speeds, generally far outweigh the “savings” from skimping on maintenance. Over the life of a pavement, road user costs far outweigh the costs incurred by the road agency (Box 5-2).⁸ A good rule of thumb is that for every dollar “saved” on maintenance, road user costs rise by about three dollars. One of the most important priorities for any highway agency, public or private, is to provide adequate resources for effective maintenance—ideally, a level that minimizes discounted road-agency and user costs over the life of each road. In seeking to ensure more reliable funding for road maintenance, some countries have introduced *road funds*. These are discussed in Section 5-4.

Almost all the road-related NTSs reviewed for this report identify better road maintenance as a critical priority. Many countries, however, fail to provide sustainable arrangements for funding and managing road maintenance. Several (for example, Papua New Guinea, Fiji) have committed to special road funding arrangements (including road funds) but have experienced difficulties in implementing them.

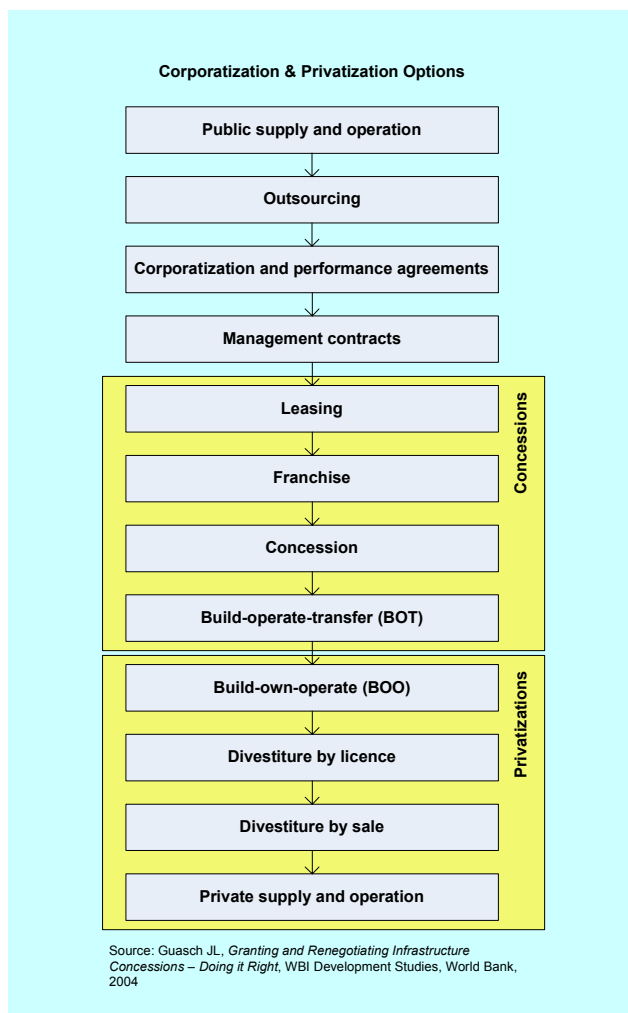
⁸ Even for roads carrying little traffic, the cost of skimping on maintenance, which can include loss of access in certain periods of the year, usually outweigh the apparent savings.

Box 5-2 Significance of user costs in relation to road agency costs⁹

Shortages of funds for construction, as opposed to maintenance, have given rise to interest in Private Sector Participation (PSP) of road infrastructure, usually tolled expressways or bridges. Approaches to PSP vary between countries—from simple outsourcing of individual tasks (design, construction, supervision, operational management, financing) to variations on the BOT (Build Operate Transfer) model (Box 5-3), in which the private sector contracts to finance, build, manage and operate the project for a period in return for a share of toll revenues or a schedule of payments from the government (“shadow-tolling”). Small developing countries, however, have not rushed to implement PSP projects, often lacking the institutional capacity to handle them effectively. Private sector finance is generally more expensive than government borrowing or bonds, so models relying on it need to offer other benefits to make them worthwhile: greater cost certainty, expedited implementation, greater efficiency, higher quality, innovative technology, specialized expertise, and so on. Private provision of infrastructure can sometimes bring forward projects that would otherwise have to wait for government budgets, as well as bring an entrepreneurial, profit-oriented approach to highway development, management and operation. But PSP is not a universal panacea; in several countries its benefits are being questioned. A strategy for PSP should be based on a careful comparison of value – for money offered by each approach, weighing the PSP option against a “public sector comparator”, the alternative involving government financing, implementation and management, with outsourcing of selected tasks where appropriate (Box 5-4). This is a complex task, which requires technical assistance from specialists.

The benefits of PSP in road infrastructure, whether in outsourced construction, maintenance or operational tasks, or through more independent BOT-like models, will be at risk, however, without two key features; (i) open, transparent competition among potential service providers to ensure that the best one is chosen (as measured against clear selection criteria); and (ii) a system for monitoring and holding service-providers accountable for their performance.

⁹ This plot is reproduced from a study carried out in the 1980s that drew attention to the economic costs associated with neglect of road maintenance: *Road Deterioration in Developing Countries*, World Bank Washington DC, June 1988.

Box 5-3 Approaches to private provision of road infrastructure**Box 5-4 Securing value for money through PSP**

Involving private management and finance is usually more expensive and takes longer to arrange. Efficiency or quality benefits are thus needed to justify the higher cost. Value –for money is only likely if the project is large enough to justify the additional transaction, management and legal costs by providing scope for optimizing risk allocation and adding value or lowering costs—and if there is a market of competent private enterprises willing to bid and capable of delivering or managing the project. Assessing this is difficult: it involves comparing the additional costs and delays in project preparation, tendering, evaluation, approval, corporatization, financing, and so on, the higher tolls needed to cover these (which have the effect of lowering economic benefits), and the benefits of management efficiency, project quality, schedule adherence, increased productivity and securing additional (even if more expensive) capital. The UK Treasury has developed guidelines and a standard evaluation spreadsheet for assessing whether PSP offers better value for money when compared with the traditional approach. The Australian states of Victoria and Queensland, among others, have also issued value for money guidelines. Australia has established a National PPP Forum to promote a consistent approach to public/private partnership projects (including standard risk-allocation models and tendering procedures), improve coordination and information-sharing with private industry, provide a forum for resolving concerns and develop PPP skills through training and staff secondment.

For most developing countries, however, a PSP strategy is risky. Making it work effectively requires specialist assistance.

Railway infrastructure (track, stations, signaling, and so on) is also usually provided by governments, though some (for example railways serving mining projects) have been developed by the private sector, and others have been privatized or their management outsourced under concession arrangements. Some governments have transferred responsibility for railway infrastructure to more autonomous agencies, and in a growing number of cases these have been separated from the organizations, public or private, that are given operating rights over or access to the infrastructure (Box 5-5). Again, which is best?

Box 5-5 Alternative models of railway infrastructure and operations

Railways around the world differ in ownership, organization and government regulation. In the US and Canada freight services are provided by six principal and many regional and local railways, all privately owned. Intercity passenger services are provided in the US by Amtrak and in Canada by Via Rail, both government-owned. Elsewhere, national governments almost invariably own the rail infrastructure and, in most cases, the operating companies as well. In most Latin American and some European and African countries, governments have granted concessions to private operators. Most EU railways have separated infrastructure management, freight operations and passenger operations, though most are still government-owned. In contrast, in the US and Canada, freight railways mostly own their infrastructure and operate their own trains, with some competition through trackage rights, with one railway allowed to operate services on lines owned by another.

Most passenger services are loss making and require government budget support.

The outright sale of public railways is uncommon (profitable railways are rare¹⁰), but separating management of infrastructure from operations and placing infrastructure management in the hands of a more independent track agency, has become more common in recent years (Box 5-6). The aim is to encourage competition among independent freight and/or passenger service providers and achieve better infrastructure cost recovery from access charges. But most railway systems—especially those offering mainly passenger services, which tend to be priced below variable cost (Box 5-7)—are not sufficiently profitable to be able to cover infrastructure maintenance and replacement costs from operating revenues, so track agencies tend to require continuing budget support. Moreover, opening up track access to third-party service providers can result in downward pressure on the rates of state-owned operators, as existing bulk customers and forwarders threaten to run their own services instead, and the loss of more profitable freight services to third-party providers leaves loss-making passenger operations without a source of cross-subsidy and in need of greater financial support from the government budget. This has come to be recognized as a critical issue in Vietnam, which is attempting to restructure its railways.

Box 5-6 Separation of railway infrastructure and operations

Claimed benefits from separating rail infrastructure from operations include: lower unit costs, competition in provision of rail services, a better commercial focus, clearer public policy and a better balance between the roles of public and private sectors. Countries that have attempted this kind of separation include Argentina, Sweden and the UK, but each has found the process difficult, with problems posed by lack of control over infrastructure standards, fair allocation of capacity, pricing and safety regulation.

¹⁰ Note, however, that railways may sometimes be attractive to investors more because of the value of the land they own or occupy than due to their operational profitability.

Box 5-7 Average and variable Costs

The cost of providing transport is made up of fixed and variable components. Fixed costs (for example office overheads, major equipment items) do not vary with the level of output, while variable costs do. Different transport modes have different mixes of the two. Railways' fixed costs are a relatively high proportion of total costs for short hauls, but the average (total) cost per ton-km or passenger-km falls below other modes over long distances (see also Box 5-9).

Radical restructuring of railway systems should be approached with caution. The benefits of focused management, a more business-like approach and greater competition through PSP certainly may be worth pursuing, but they must be weighed against the financial pressures on passenger operations, the tension among the needs of third-party users and the ability of a track authority to fund investment, asset replacement and maintenance, and the negative impacts on employees.

Concessioneering (Box 5-7) is an alternative, whereby responsibility for operating the railway, or selected railway services, is transferred to a private enterprise for a defined period in exchange for revenues and, where necessary, an agreed government subsidy. This can bring most of the benefits of cost-conscious commercial management and incentives to attract traffic and run operations efficiently. But it also, usually, involves a reduction in the workforce, which is resisted by employees.

Box 5-8 Railway concessioneering¹¹

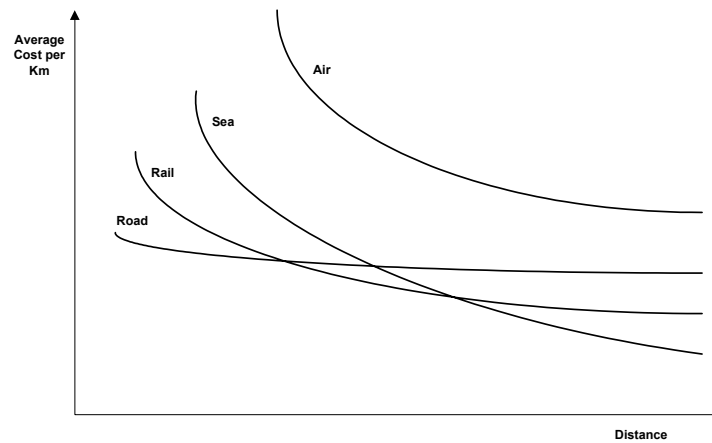
In 2005, there had been 13 rail concessions in Africa since 1993, four having operated for five years or more. Most had benefited from initial injections of capital, equipment and upgraded facilities. A review found that these operations were arguably performing better than if they had not been concessioneered. Labor and asset productivity, cost structures, marketing, quality of service and internal business practices had all improved. Public Service Obligations (PSOs) were generally being met, even though bus-based systems might have been more economical. In most cases, however, the railways were unlikely to be able to finance major infrastructure renewals from retained revenues. It was therefore questionable whether purely privately financed rail concessions would be achievable in much of Africa in the foreseeable future.

Whether or not railway restructuring is attempted, efforts should also focus on ensuring that railway services are able to exploit their competitive advantage *vis-à-vis* other modes (Box 5-9); in many countries they fail to do so, largely because of their bureaucratic management, operating inefficiencies and lack of investment. Railway transport should be cheaper than road transport over distances of around 200 km. or more, particularly for lower-value, bulk, less time-sensitive commodities and containerized freight. (Higher-value, time-sensitive goods will generally be difficult to attract for all but high-speed services over long distances.) If rail fails to be competitive over long distances, efforts should be made to reduce the costs and delays of transshipment (for example by unitization of loads and mechanization of handling), improve running speeds and delivery times, increase unit capacity and ensure that the tariffs charged for competing modes generally reflect all the costs involved (see Section 5.4).

¹¹ *Results of Railway Privatization in Africa*, Richard Bullock, World Bank Transport Papers No. TP-8, Washington DC, 2005.

Box 5-9 Unit transport costs by alternative modes, by distance

Over long distances, transport modes with high fixed costs but low variable costs—such as railways and air transport—are able to reduce average costs.



However, users are also concerned about service quality, reliability and security from loss or damage.

Ports and port-related facilities (wharves, container yards, storage, transshipment facilities, and so on) also tend to have been provided by governments but have sometimes benefited from PSP. While several different approaches are used, the majority is formed by concessions such as (long-term) lease contracts and BOT structures.

Ports around the world are managed along one of the principal management models:

- **Public Service Ports.** Service ports have a predominantly public character. The number of service ports is declining. Many former service ports are in transition toward a landlord port structure. However, some ports in developing countries are still managed according to the service model. Under this model, the port authority offers the complete range of services required for the functioning of the seaport system. The port owns, maintains, and operates every available asset (fixed and mobile), and cargo-handling activities are executed by labor employed directly by the port authority. Service ports are usually controlled by (or even part of) the ministry of transport (or communications) and the chairman (or director general) is a civil servant appointed by, or directly reporting to, the minister concerned. Among the main functions of a service port are cargo handling activities. In some developing country ports, the cargo handling activities are executed by a separate public entity, often referred to as the cargo handling company. Such public companies usually report to the same ministry as the port authority.
- **Landlord Ports.** As noted, the landlord port is characterized by its mixed public-private orientation. Under this model, the port authority acts as regulatory body and as landlord, while port operations (especially cargo handling) are carried out by private companies. Today, the landlord port is the dominant port model in larger and medium-sized ports. In the landlord port model, infrastructure is leased to private operating companies or to industries such as refineries, tank terminals, and chemical plants. The lease to be paid to the port authority is usually a fixed sum per square meter per year, typically indexed to some measure of inflation. The initial lease amount is related to the initial preparation and construction costs (for example, land reclamation and quay wall construction). The private port operators provide and maintain their own superstructure, including buildings (offices, sheds, warehouses, container

freight stations, workshops). They also purchase and install their own equipment on the terminal grounds, as required by their business. In landlord ports, dock labor is employed by private terminal operators.

- **Private Service Ports.** Fully privatized ports (which often take the form of a private service port) are few in number, and can be found mainly in the United Kingdom and New Zealand. Full privatization is considered by many as an extreme form of port reform. It suggests that the state no longer has any meaningful involvement or public policy interest in the port sector. In fully privatized ports, port land is privately owned, unlike the situation in other port management models. This requires the transfer of ownership of such land from the public to the private sector. In addition, along with the sale of port land to private interests, some governments may simultaneously transfer the regulatory functions to private successor companies.
- **Tool Port.** The Tool Port, a fourth model, is relatively rare. Its management model is a blend between the Public Service and the Landlord models.

The Port Reform Toolkit Second Edition of the World Bank contains extensive information on port management, reform, regulation and strategy (www.worldbank.org/transport/ports/toolkit.htm).

Many government-managed ports, even when managed by more autonomous port authorities, tend to be slow in responding to users' needs and to have relatively low productivity and poorly-structured charges, while a system of privately developed ports risks duplication and lack of integration within an overall plan. Therefore, the Landlord port model is generally considered as the balanced model, in which basic port infrastructure is planned, established and maintained by the public sector and the development and operation of terminals and related facilities are outsourced to the private sector for specified periods. Box 5-10 provides an overview of how the management structure works under the different management models.

Box 5-10 Port management models¹²

Type	Infrastructure	Superstructure	Port Labor	Other Functions
Public Service Port	Public	Public	Public	Majority public
Landlord Port	Public	Private	Private	Public/private
Private Service Port	Private	Private	Private	Majority public
Tool Port	Private	Public	Private	Public private

Air transport. As in the case of ports, similar considerations apply to **airports**, where strategic decisions about the location, scale and basic configuration tend to be made best by governments within an overall national **Air Transport Master-Plan**, while the development and operation of passenger and freight terminals, aircraft maintenance, catering and related services can benefit from commercial management and provide opportunities for private sector involvement. Like ports, airports

¹² See: World Bank *Port Reform Toolkit, Module 3, Alternative Port Management Structures and Ownership Models*. <http://www.worldbank.org/transport/ports/toolkit.htm>.

need substantial capital funding, making long concession periods necessary to recover investment costs under PSP options. This entails the risk of monopolistic pricing and makes appropriate design of the regulatory framework and concession agreement very important (see Section 5.2). In addition, a national airport system usually consists of high-volume (and profitable) international gateways supporting a network of non self-sustaining peripheral airports that are an important part of the transportation network. Since most infrastructure investment in air transport is nodal rather than covering the entire distance of travel (contrary to rail and road networks), a well-distributed airport system can provide the necessary access to more remote and rural areas that are not supported by substantial ground-based transportation investment.

In general, there are strong arguments for the private sector to provide air transport services and most other airport services, while governments have an advantage in providing safety oversight and the basic infrastructure in terms of runways, navigational aids, weather services, and air traffic control. The oversight authority ideally is a financially autonomous agency sustained by fees collected from over flights, passenger fees, and other applicable airline fees. To ensure consistent and reliable oversight and enforcement in low demand and peripheral locations, regional pooling of oversight resources (including aircraft inspectors) may be necessary.

Security is becoming increasingly important. Here too, the options include provision and operation of security equipment (for example surveillance and scanning equipment at ports and airports) by government agencies (port/airport authority or government security services) or under contract by the private sector. In each case, the key lies in designing appropriate targets and procedures for monitoring efficiency and effectiveness.

Responsibilities for **multimodal passenger and freight transport facilities** (freight and passenger interchanges, inland container depots, freight terminals, and so on) often tend to fall between the government agencies responsible for individual modes (Box 5-11). Yet the efficient transfer of goods between road, rail, inland waterway and maritime transport can be crucial to the economy's competitiveness and the needs of passengers. This is a critical issue for urban passenger terminals, where different modes and services meet, and often compete, for customers. The often fragmented structure of infrastructure ownership—government railways, private road services, state port authorities—tends further to frustrate the development of coordinated services and complicates the provision of inter- or multimodal facilities by the private sector.¹³ Both government and private sectors can play a role in overcoming these constraints: the government by developing an integrated multimodal plan, encouraging a more commercial and coordinated approach by state-owned transport agencies and removing regulatory restrictions on the private sector's involvement; and the private sector by developing integrated multimodal solutions to the needs of freight customers and passengers, spanning the separate regulatory frameworks governing each mode. This change to a multimodal perspective is not often in evidence in the NTSs reviewed; most countries continue to suffer from a delineation of modal responsibilities that make multimodal coordination difficult.

¹³ Multimodal transport is the carriage of goods by two or more transport modes under one contract, with one party (the multimodal transport operator) responsible for the entire carriage. It is a key component of modern logistics, the whole supply chain including packing, handling, storage, inventory management, customs clearance, documentation and consignment tracking as well as direct transport. Multimodal transport is not quite the same as intermodal transport, which refers to the movement of goods in a single unit through two or more transport modes without the need to handle the individual goods themselves when changing modes.

Box 5-11 Multimodal transport facilities¹⁴

A recent study in Vietnam found that multimodal transport and logistics services were in their infancy, as in many other developing countries. Customers were not fully aware of their benefits; they focused on reducing transport costs but did not realize that higher-quality, more reliable transport would open new markets, improve export prices, reduce losses and damage to goods and enable reductions in inventory costs. Operators of individual services did not see themselves as part of an integrated logistics chain. Multimodal transport services were mainly provided by freight forwarders; there were only a few specialized Third Party Logistics (3PL) providers. New and revised laws governing trade, customs, competition, investment, enterprise reform and management of transport modes provided a better facilitating environment, but their implementation mechanisms had shortcomings.

Efficient multimodal services could be established under existing laws but modal laws and regulations (governing road, rail transport and so on) needed updating and there were inconsistencies and overlaps in existing regulations. The study recommended placing all regulations governing multimodal transport in a new decree and gave guidelines to help ensure consistency in policy on matters affecting multimodal transport and the economic regulation of individual modes.

Infrastructure in remote or poor areas, like isolated rural roads, airstrips, coastal jetties, or low-income suburban areas pose difficult issues of development, management and funding. They are usually not commercially viable; users cannot afford to pay for their development and upkeep, and no business would provide the needed infrastructure without subsidy. They tend therefore to be provided by governments, often local governments strapped for cash, and to fall into disrepair before the end of their intended lives. Different ways have been tried to overcome this problem, but the facilities generally stay in the public sector. Some depend on voluntary or paid community labor, others on outsourcing arrangements, but always with some element of government support. Note that remote transport *services*, as opposed to infrastructure, often lend themselves better to PSP; these are discussed below.

Some of the countries reviewed have recognized the importance of rural transport and have developed special programs under their NTS. Examples include South Africa, China and Tanzania.¹⁵

In cases where PSP is envisaged, the **regulatory framework** governing concessioning and private sector provision of infrastructure is critical. Too often, cases arise where governments award PSP contracts through arrangements that are opaque and open to corruption, and that provide few effective incentives to improve performance. Instead, the concession award and regulatory process should have the following key features:

- Separation of the functions of owner and operator, so that the government can hold the operator accountable for performance in pursuit of clearly-defined objectives;
- Open, transparent competition among potential investors, service providers, managers or operators, and straightforward criteria for selecting the preferred bid;
- A policy on unsolicited proposals, to maintain competition and help ensure the best option is chosen;
- An agreement on the allocation of all risks between government and private parties;
- Concession agreements that formalize all rights and responsibilities and include arrangements for monitoring compliance.

¹⁴ Ministry of Transport and World Bank, *Vietnam: Multimodal Transport Regulatory Review*, PPIAF Grant No. A010304/L/TMT/RF/VN, Meyrick and Associates in association with TDSI and Carl Broa|s, April 2006.

¹⁵ Tanzania's *National Transport Policy 2003*—a good example of an NTS—is interesting on account of its structure. Rather than adopt a strategy based on transport modes, as many others do, it is organized—after setting out shortcomings, objectives, goals and policy framework—around strategies for urban, rural, pan-territorial, international and special transport.

Governments should view private finance and management of infrastructure as an option, not a precondition, for successful project implementation and asset management. They should test whether alternative financing/management options offer better value for money.

In summary, either approach—public or private provision of transport infrastructure—can be made to work effectively, but whether it does so depends on the incentives provided and how the government controls its operations. Government agencies can manage infrastructure efficiently and effectively if managers have a strong incentive to do so—if clear, realistic targets are set, and managers are given decision-making autonomy and adequate, sustainable resources, and are held accountable for performance, penalized for under-performing and rewarded for achieving targets (though none of the NTSs reviewed met these criteria fully). Private sector management can also be effective if there are open, transparent competition in the award of concessions; clearly-specified performance targets, a rational system of pricing; and procedures for monitoring compliance with well-designed concession agreements and dealing fairly with disputes.

Transport services

Transport services—more ubiquitous than major items of infrastructure and requiring the ability to respond more flexibly to the needs of users—are better suited to competitive private sector supply. The key word is **competitive**. Passengers seek the service that meets their requirements for availability, quality, reliability, speed, security and price. In many rural and urban areas, walking is the main alternative mode of choice to vehicle-based transport, which people use to go to work and access basic social facilities. Freight customers always seek better logistics solutions; they are not just concerned about the out-of-pocket cost of transport (if that were the case, all freight would move by the cheapest mode, which clearly it does not). Freight transport services have quality attributes—cost, transit time, reliability, availability and security from loss or damage—whose relative importance depends on the type of freight and the circumstances in which it is being transported. The non-monetary, “quality” attributes are especially important for the growing trade in intermediate goods, in which developed countries outsource parts of the production process, especially in garments, where fashions change rapidly and the production cycle must be short (Box 5-12). The logistics system, including transport services, must be capable of responding rapidly and reliably to these needs.

Box 5-12 Importance of quality attributes of transport

The clothing and textile industry is one where it is essential that supply chains be responsive, reliable, fast and efficient. Most garments are ordered in a particular style to fixed deadlines to reflect fashion trends. Late or unreliable delivery that misses the fashion launch is, in most cases, equivalent to no delivery at all, and will result in production being redirected in future to providers with more efficient supply and distribution systems.

Very few of the NTSs reviewed recognize the importance of this. Much is made of competition as an agent in bringing down prices, but the role of competition in supplying the kinds of quality services needed to meet the requirements of external markets is rarely mentioned.

Experience has shown that state-owned transport service providers are usually not good at this; those enjoying a monopoly are even less so. Their relatively low rates of pay, reliance on government budgets and decision-making and lack of commercial incentive make them comparatively

unresponsive and inefficient.¹⁶ Moreover, their existence tends to act as a brake on the development of efficient, demand-responsive services by the private sector; governments tend to protect them when they are threatened and favor them when awarding contracts (Box 5-13).

Box 5-13 Responding to changing markets

China has committed to opening up its distribution and logistics markets to foreign participation. This will raise competition, hasten industry consolidation and improve service quality. Already domestic companies are consolidating and developing a more market-driven, customer-focused approach in preparation and in response to new business opportunities. Probably more than any other factor, this will help reduce inefficiencies in the road freight industry, raise quality and security, improve commercial management and strengthen workforce skills.

Modernization of logistics is a top priority. National and provincial governments are investing in infrastructure and logistics hubs. The Ministry of Communications is trying to help consolidate the industry and build market leaders as competitors to foreign market entrants or targets for foreign participation. Manufacturers and traders are increasingly out-sourcing logistics tasks in order to focus on their core competencies. Their interest in one-stop service is encouraging the integration of supply-chain functions. SOEs and local logistics and transport enterprises will need to adjust to competition and pressure for better service quality and lower costs from consumers, customers and shippers, most of which are unlikely to develop their own distribution networks.

Independent 3PL service providers are also responding to distribution markets that are expected to grow by more than 30 percent p.a. They are keen to develop modern logistics networks, including warehouses, packaging plants, intermodal trans-shipment facilities, freight consolidation centers, and so on. Many players (including traditional logistics SOEs, new private companies, own-account operators turning to logistics and foreign service providers) are already doing this. It will not be long before their share of the logistics market will rise from 2 percent in 2001 to levels closer to those seen in the US (8 percent) and Europe (10 percent). The market is large: China spent \$ 350 billion on logistics services in 2004, 16.6 percent up on 2003.

Even in centrally planned economies, the growing evidence overwhelmingly supports a strategy to open up transport markets to competition, encouraging the development of a competitive private sector and winding down the role of SOEs.

Transport services do need to be regulated to ensure that they are safe, to help reduce congestion and ensure that an adequate service frequency is maintained. In this respect, the nature of competition may have to be controlled. In many congested cities in developing countries, an uncontrolled multiplicity of passenger transport service vehicles, legally operating or not, often compete on the streets to gain the maximum number of passengers, causing both accidents and unnecessary congestion. In this instance, competition “for the market”, that is, bidding for different routes, may be preferable to the current form of competition that operates “within the market” (see Section 5.3). There are also situations where it is difficult to establish competition among service providers. In much of Africa, interurban freight and some passenger transport operations are dominated by cartels, operated through an enforced system of queuing for loads and passengers at truck and bus parks, giving rise to very high tariffs, inefficient operations with low vehicle utilization and, in rural areas, low service frequency.¹⁷ It is often easier to sustain such monopolistic/cartel

¹⁶ There are exceptions. Some government operators are efficient—China, for example, has some road transport and shipping companies that are world class—but usually only when they have been freed from the government’s bureaucratic procedures and given almost complete autonomy to manage their affairs on a commercial basis.

¹⁷ This is documented in numerous reports. See for example *Improving Rural Mobility: Options for Developing Motorized and Non motorized Transport in Rural Areas* by Starkey, Ellis, Hine and Ternell, World Bank Technical Paper No. 525, Washington DC, 2002.

operations in areas of low density of demand. In contrast, in Asia, where the density of demand is high, it is more difficult to sustain cartels, and long distance services are provided competitively at much lower cost. There are no easy solutions to deal with entrenched widespread cartels and monopolistic practices. Strong local political leadership, to promote greater customer and public awareness to help discourage the queuing practices and create new forms of competition can play a part.

A lack of service availability can be a key problem where demand is very thin and commercial services unprofitable. This occurs in sparsely populated areas and island communities. Should governments provide services in these situations? They certainly recognize the need for such services: Tanzania, South Africa, PNG, Guyana, Vanuatu, Fiji, China and Bhutan, among many others, all stress the development of rural transport services or services to remote island communities. But when governments do provide them, they tend to be poorly funded and neglected, and there is little incentive for the operators (for example local governments) to strive to be efficient or attract customers by raising quality. Alternatives are possible which capture some of the incentives of competition, cost-cutting and profit-seeking: a system based on the award of route franchises (that is, bidding “for the market”), in which operators are invited to bid for the right to operate a defined service for a period in return for revenues collected and a periodic subsidy, with the winner awarded on the basis of the minimum subsidy and/or tariff (Box 5-14); operating rights can be re-bid at the end of the franchise period.

The advantage of such arrangements is that performance under the franchise agreement can be monitored and the level of subsidy periodically weighed against the perceived benefits of the service. Alternative approaches involving loss-making services being subsidized by profitable ones conceal the subsidy, making a cost-benefit comparison difficult, as well as disadvantaging users on the more profitable routes.

Box 5-14 Route/service franchising

The government of Fiji periodically invites competitive tenders from inter-island operators to service routes under the Government Shipping Franchise scheme. Under this scheme, the operators receive a subsidy—the amount of the subsidy is one of the selection criteria—in return for a commitment to provide service of a nominated frequency to specific locations within each island group (Lau, Kadavu, Yasawa North-Eastern Vanua Levu, Gau, Nairai, Rotuma and Batiki).

Difficulties in establishing competition sometimes also arise with international air and maritime transport, where there is often a desire to maintain a national champion against foreign competition. Despite government protection, such services are often loss making. Even here, there are opportunities—like code-sharing for outsourcing the service to privately-owned specialists—and, in the extreme, running a “virtual” state-owned service, advertised as being provided by the national carrier but actually fully outsourced to private service providers.

Organization of government functions

It is not uncommon for governments to be both regulator and operator of services that are essentially commercial in nature and subject to private sector competition, or both owner and operator of infrastructure that might otherwise benefit from more independent, business-like management.

When governments plan, regulate and provide transport services and infrastructure, they tend to protect them from competition. As a result, state-owned service providers have less incentive to operate efficiently and flexibly in response to users' needs. Private operators that would be more motivated to do so are squeezed out, to the disadvantage of users and the competitiveness of the economy as a whole—hence the preference for open, competitive markets and expansion of the private sector's role.

A move towards more competitive markets, however, changes the role of government from one of providing infrastructure and services itself to one of monitoring and regulating the performance of other service providers to secure the interests of users and the general public. This has implications—unrecognized in many of the NTSs reviewed—for its own institutional structure: more emphasis on planning, regulating, coordinating and monitoring functions, and less on building and operating infrastructure and services. Countries respond to these changes in various ways, for example by:

- Separating the government functions of planning, regulating, coordinating and monitoring from the functions of developing and operating infrastructure or services;
- Establishing more autonomous agencies and enterprises to manage state-owned commercial assets more efficiently—and ultimately auctioning such assets to the private sector (while avoiding the creation of a private monopoly in place of a public one);
- Beefing up planning, regulatory and monitoring skills (which differ from the skills needed to build and run transport services), especially in areas concerned with market entry, competition, pricing, taxation, public safety and environmental protection (see also Section 5.2);
- Introducing improved procedures for outsourcing selected tasks, including better contract and concession agreements, performance standards and targets, monitoring procedures and arrangements for resolving disputes;
- Opening up the process of planning, regulation and performance monitoring to external review.

Box 5-15 Key institutional reforms

- Separating planning, regulating, coordinating and monitoring functions from those of developing and operating infrastructure or services;
- Establishing more autonomous agencies to manage state-owned commercial assets in a more business-like way—and selling them to the private sector when there is a competitive market;
- Beefing up planning, regulatory and monitoring skills, especially in market entry, competition, pricing, taxation, public safety and environmental protection;
- Outsourcing tasks with improved contract/concession agreements, performance targets, monitoring procedures and dispute resolution arrangements;
- Exposing planning, regulation and performance monitoring to external review.

5.2 Planning and investment policies

Within the scope of this document it is difficult to suggest in detail how projects should be prioritized—there is a wealth of literature on techniques for project planning and evaluation—other than by saying that they should anticipate future developments and changes in demand and provide the capacity to meet future needs in the most economically efficient way—a policy most NTSs endorse. As noted in Box 2-1, this can sometimes involve the use of national or regional network planning models. But it is

important that governments set out a consistent set of criteria that will guide the planning process, and this is often not done, especially among transport modes.

Principles and criteria governing public sector investments

Public sector investment planning should be guided by **consistent, rational criteria**, applicable across all modes, in relation to environmental impacts, public safety and economic and/or financial returns. Few of the NTSs reviewed have been consistent in applying such criteria. To help achieve this, a strict process of project evaluation and appraisal is needed, carried out in accordance with well-established guidelines.

Public projects should meet or exceed:

- Minimum acceptable standards of environmental impact (usually specified by the ministry responsible for environmental protection)—air and water pollution, noise, impacts on flora and fauna and so on—and their design and implementation should include measures to mitigate negative impacts;
- Minimum safety-related standards—for example design standards for visibility, reliability, guardrails, lighting, visibility, geometry, and so on;
- For the majority of projects that are justified on economic grounds, a minimum threshold economic return should be achieved; that is, a positive Net Present Value (NPV) calculated using a specified economic discount rate, or Economic Internal Rate of Return (EIRR), which is above the discount rate for the costs and benefits forecast over a specified period;
- Where appropriate (that is, where user charges are levied and the project serves a commercial purpose), a threshold financial internal rate of return (FIRR).

Where projects are specifically designed to meet particular social criteria (for example rural roads to meet basic access requirements) a prioritization planning procedure should be adopted to help rank projects so that the overall program achieves the best value for money. To do this, it will be necessary to quantify the social (and, if appropriate, additional economic) criteria for each project as directly as possible (for example, identifying not only the cost of each road project but also the benefits in terms of, say, the increase in the number of people living within 2 km of an all-season road).

The economic value of a project depends on our assumptions and ability to identify and measure all the relevant costs and benefits of a project. Some components (for example existing traffic volumes) will be known with reasonable certainty from an analysis of current traffic data. However, other components such as the growth in traffic arising from other investment projects, changes in vehicle specifications, changes in trade policy and market structure, or the wider developmental impact arising from the project, will be uncertain and will probably be omitted from the conventional project appraisal procedure. Statements of government intention and other planning processes may identify national and regional policy and investment interventions which will, in turn, affect the underlying assumptions of the appraisal procedure and may well have an important bearing on the overall economic success of different projects. Investment projects are most likely to be implemented and have successful outcomes if they are consistent with sensible and realistic longer term strategic and regional development plans, policies and goals. To be successful, unsolicited proposals by the private sector should also meet those criteria.

Most NTSs are based on a technical and economic appraisal of investment options, but few state explicitly what criteria all public sector investments are expected to meet. Ideally, project proposals

should be subject to independent review, preferably by an agency separate from the sponsoring ministry; some countries (for example China, with its National Development and Reform Commission, and Indonesia, with its National Development Planning Agency, Bappenas) have planning or coordinating ministries. The review should test the possibility of variations in the assumptions used in evaluating them (for example forecast economic growth and transport demand, available investment resources and network capacity, transport prices and taxes), and should include an analysis of the factors that might put the project at risk of failing to meet its intended objectives (risk analysis).

For large cities, where each agency/institution often promotes its own transportation mode, sound appraisal for different modes should be carried out by an independent body, which is responsible for all transport investment and regulation in the urban area. It is extremely important when considering different mass transit schemes, that a proper range of alternatives is evaluated. For example, bus rapid transit can be extremely effective, yet it is often ignored when rail-based schemes are considered.

Technical standards are commonly set for infrastructure, such as geometric and load-bearing standards for roads and bridges. Sometimes these are unrelated to safety or environmental matters and could legitimately be reviewed. Guidelines relating road width to functional classification, for example, might result in standards that are uneconomically high when traffic is lower than usual. Inappropriately high standards might cause benefits to be foregone or investments unnecessarily delayed. Good planning would allow lower standards, or the staged development of higher standards in line with growth in demand, to be tested at the project evaluation stage.

Box 5-16 Technical standards

Technical standards for infrastructure are important in ensuring consistency in safety and environmental protection features throughout the network. But they can also result in an inappropriate level or timing of investment. Many expressway projects, for example, built according to fixed standards for number of lanes and cross-sectional geometry, might benefit from construction in stages in line with traffic growth, for example with two lanes initially and more lanes added later, when traffic levels justify the additional capacity.

This situation often arises where technical standards are predetermined and the project's timing is set by the fixed schedule of a planning pipeline, including donor support. The momentum of commitment to a project sequence also risks contributing to "optimism bias", as project proponents strive to find their projects viable.

Controls on private sector investment

What controls should apply to private sector investments? Like public investments, they should be **consistent with strategic plans**. Ideally, these plans should indicate those projects that are available for PSP and the procedures and criteria to be used in inviting and evaluating proposals, including project specifications, feasibility studies, bid evaluation criteria and model contract or concession documents.

Unsolicited proposals can present risks of inappropriate or poorly timed investment and arrangements for risk-sharing that favor the investor; corruption is not uncommon. Addressing these requires a proper framework for evaluating them in the context of a broader sector strategy. None of the countries reviewed had a stated policy on this. Some countries encourage unsolicited proposals but subject them to the same tests of risk and viability as other planned projects (usually at the expense of the proponent), and sometimes invite competing proposals. To compensate for the effort put in by the original sponsor, they adopt approaches like the "Swiss challenge": allowing proposals to

be made by competing bidders but then giving the original proponent the right to respond with a revised bid. An important aim of such an approach should be to retain the value of competition in maximizing quality and efficiency.

The process of **bidding and award of concessions** is not addressed in any of the NTSs reviewed; in many cases, it might be considered a matter of broader government procurement policy. But, ideally, the process should:

- Allow as much flexibility as possible in the bidder's approach—allowing him, for example, to propose innovative forms of financing, bundling with other projects and so on—in order to discover the best value for money outcome;
- Clarify all input assumptions, including tariffs and tariff-setting procedures, performance targets, penalties and incentives, and government contributions and/or guarantees;
- Adopt simple criteria that can be easily evaluated, for example lowest subsidy or revenue share for a given tariff, which make it easy to justify the award decision and do not require frequent amendment to cope with unforeseen circumstances during the concession/contract period;
- Specify outcomes and performance targets that can also form the basis for comparison of bids—for example service performance standards, maintenance standards, timetable for increases in capacity;
- Limit opportunities for renegotiation, by specifying the conditions in which renegotiation is permitted and making it clear that risks are otherwise assigned by a risk allocation matrix (see below) included in the agreement;
- Insist on open, transparent competition, exposed to independent scrutiny (with evaluation of bids verified by an independent panel, for example);
- Make all relevant information available to all bidders.

The **concession agreement** should set out clearly the rights and obligations of the parties involved; the nature and duration of the services outsourced; government contributions and guarantees; tariff-setting policies and procedures for varying them; performance measures, incentives, penalties and the basis for any revenue-sharing; standards of technical and financial record-keeping and reporting; arrangements for monitoring technical and financial performance; specific conditions giving rise to default and/or renegotiation (and conditions expressly excluded from consideration for renegotiation); and arrangements for jurisdiction and dispute resolution. Details of this are not included in any of the NTS policy statements reviewed, but they must be set out *somewhere*, if the common pitfalls are to be avoided.

The more the agreement eliminates ambiguities and clarifies and reduces risk for both parties, the lower the financing costs and the better the value for money of the outcome. Good concession design holds concessionaires to the terms of their original appointment and reduces the need for renegotiation. It makes clear what each party's rights and obligations are, contains incentives and penalties to encourage performance and provides for fair and objective resolution of disputes. Efforts should be made to pin down the key factors affecting cash flow and/or the assumptions on which they are based, including the allocation of all categories of risk.

The costs of PSP depend on the predictability of conditions affecting cash flow. A clear identification and allocation of all potential **risk factors** can play an important part in this.¹⁸ Traditional economic and financial risk analyses carried out at the feasibility study stage could be extended to include the task of identifying all risk factors and mitigation options, determining the party best able to control them, and presenting the results as a contingency table, clarifying the party responsible for any actions, costs or revenue shortfalls arising from each, to be included in the concession agreement and pre-bid documentation.

While these considerations are especially important in larger countries, where PSP is likely to be more common, they also apply to smaller developing countries where private finance or management is envisaged—for example in management of parts of the road network, or port terminals and so on.

Box 5-17 Allocation of risks

The absence of a clear allocation of all risks is a common cause of dispute in infrastructure concessioning. The risks take many forms; some can be reduced by the actions of one or other party while others cannot. The government should not transfer all risks to the private sector—this will attract a cost premium—but instead try to allocate each to whichever party is best able to manage it. Private involvement should not be sought until all significant risks have been identified and the government has decided which to retain and which to transfer to the private sector.

Providers of project debt or equity require some security of repayment, otherwise financing costs rise to compensate for their absence. They often require an equity contribution from government and/or guarantees of financial return, traffic or cost thresholds. As a result, the financial performance of such projects has to be higher than for projects built the “traditional” way, with public funds. In most cases, the (government) owner would carry a portion of the risk.

Ideally, the process should also provide for the **participation of stakeholders in planning and performance monitoring**. In many countries, notwithstanding statements about being responsive to the community’s needs, government management, financial and technical reports tend to be designed to meet internal requirements and are of little value to stakeholders and members of the public interested in assessing value for money; there is a lack of a culture of openness in reporting; little effort is made to keep the public informed of progress towards objectives and get them involved in reviewing this; the media are not used effectively to secure community support for management decisions. Yet a free flow of information on planning decisions, criteria and performance ought to benefit transport agencies and the government (by facilitating better-informed decisions) as well as stakeholders and the general public (by giving them confidence that their interests are recognized and being addressed).

Because it usually contributes to more effective projects and lowers the risk of corruption, it is important to raise public awareness and instill a culture of openness, transparency and customer-oriented responsiveness among transport agencies. This is becoming more common in the countries

¹⁸ Examples of risk categories include: the risk that project land will be unavailable or access to it made subject to unexpected conditions; that project preparation or implementation suffers unexpected costs or delays; that debt or equity financiers will not provide funding as expected; that the financial structure is incapable of providing fair returns, calling into question the project’s viability; that currency exchange rates move to the disadvantage of either party; that the operator will be unable to deliver the expected services according to specifications and/or within budget; that traffic or revenues will differ from projections; that the network in the project’s vicinity will change in a way that affects its viability; that government will unexpectedly change its regulations or policies (for example on toll rates) in a way that would impact negatively on the project; and that events outside the control of either party disrupt the project (*force majeure*).

reviewed—even those that have in the past been somewhat secretive—especially as the Internet becomes more widely used.

Box 5-18 Benefit of stakeholder participation in planning

Government agencies cannot be expected to initiate reforms designed to strengthen accountability and transparency if they are involved on both sides of the owner/operator fence. If these functions can be separated by an arm's-length relationship achieved through contract, then the benefits of transparency—pressure on the operator to perform in accordance with agreements—can be achieved. Achieving these requires the following information, at least, to be made available and accessible to interested parties: details of the project; the basis for selection and contract award; the operator's obligations, performance targets, incentives and penalties; and the key results of monitoring technical and financial performance.

When it comes to infrastructure planning, the basic strategy should be to establish a system of independent oversight that subjects investment, funding and management decisions to external scrutiny. This independent scrutiny, facilitated by transparent decision-making and reporting, would put pressure on the agency to achieve satisfactory performance. There should be a free flow of information on management decisions, criteria and performance.

Resource availability

An important issue in developing an NTS is the availability of resources, both for funding and in terms of institutional capacity and manpower (with the latter depending on decisions, discussed earlier, about the role of government). Projections should be made of the funds likely to be available from the government budget and the private sector. Since delays in projects that are already economically viable with result in loss of benefits, alternative sources of funds should be identified if projected budget allocations are found to be insufficient. These might come from the private sector, in which case a PAS framework will be necessary, or they may be raised by increased user charges and/or taxes, discussed in Section 5.4.

5.3 Operational, regulatory and licensing policies

The role of regulation and licensing

There is much talk of deregulation. What does it mean, and what is the role of regulation and licensing? Basically, it is to establish controls that help achieve society's goals in relation to efficient and demand-responsive services, public safety, the environment and protection of public assets. Most of the controls dismantled under a deregulation strategy tend to be those that unnecessarily constrain which providers, in what way and at what price, can offer what services and facilities. Dismantling them can enable new providers to enter the market, allow new types of service to develop and prices to reflect the better quality and greater productivity that is made possible by an easing of restrictions.

Many countries (for example China) adopt a heavily structured approach to service licensing in the pursuit of higher standards—better-maintained vehicles, higher-quality services. But a relaxation of controls can often help improve vehicle/vessel productivity, reduce unit costs and allow more flexible, affordable services to develop. Similarly, fragmentation of transport industries (for example a proliferation of small, poorly-managed service providers) is often addressed by government intervention and regulation to bring about consolidation, but alternative approaches are also possible that utilize market forces more effectively.

Competition and incentive

If governments want to achieve efficient, demand-responsive, safe and environmentally sound services, then incentives, rather than controls, are often the best way of doing so. Incentives can be of two kinds: those that result from operators striving against competitors to win market share and/or higher profit; and those that are encouraged by pricing/taxation tools—for example higher vehicle registration charges for heavy vehicles that damage road pavements, or higher taxes on polluting fuels.

Competition is the most powerful policy tool of all. Provided that basic standards of quality, safety, environmental and public asset protection are met (see Section 5.3, subheading Protection of Public Safety and the Environment), users benefit most when service providers compete to offer the best, most efficient service in response to their perceived needs. This competition is usually best achieved by phasing out SOEs and easing restrictions on:

- Market entry (usually resisted by incumbents), retaining basic standards of financial, management and safety performance as qualification for a license;
- Pricing, allowing operators to set prices based on costs and affordability (with effective competition, price gouging should not happen, but this can be monitored);
- Choice of technology, allowing operators to choose the vehicle or vessel they consider most suitable for the task;
- Route structure, allowing operators to allocate vehicles or vessels to routes as they choose, raising productivity and lowering unit costs;
- Operations (timetable, frequency of service and so on), allowing operators to schedule their services so as to maximize productivity.

Commercially minded operators tend to be better than government planners at deciding what customers want, but totally unregulated markets can sometimes result in chaos. The planner should monitor the situation and try to achieve an overall balance between demand and supply; sometimes this might require equitable arrangements for allocating more profitable/unprofitable or peak and off-peak services among operators.

In some cases—for example for urban bus services—it may be preferable to use competition in the allocation of routes rather than on the road (Box 5-19): competitive bidding for renewable route licenses or franchises can result in more ordered services.

Box 5-19 Urban bus route franchises

Urban bus services often impose a heavy workload on regulatory authorities, for example in administering rules about routes, schedules and terminal operations. It does not have to be this way. An alternative strategy might:

- Reduce the number of clients, by interacting with a limited number of route organizations (route associations, cooperatives or companies), not numerous individual vehicle operators
- Reduce the depth and scope of regulatory control, by (i) focusing on strategic planning and regulatory policy—a guiding role—not on operational details, (ii) transferring more responsibility for internal coordination of the route and operational aspects to the route organization and (iii) giving the route organizations some discretion to adjust services to meet demand, within guidelines
- Reduce regulatory complexity, by simplifying the categories of vehicles and routes, eliminating redundant regulations and choosing the best operator by tender; this is likely to require less subsequent intervention by the regulator.

Protection of public safety and the environment

Markets may be good at matching services with customers' needs, but they do not guarantee standards of public safety and protection of public assets and the environment. These require operators to comply with technical and operational standards—for the design of road infrastructure, vehicles/vessels, the use of safety equipment (seat belts, signal flares and so on), minimum qualifications for operators, drivers or pilots, and restrictions on certain operations found to be detrimental to public safety, the environment or public assets (for example speed restrictions, limits on overloading, emissions, noise and so on). In addition, minimum safety features should be mandated for public infrastructure (for example sight distances for roads and so on). Poorly regulated (and enforced) public transport services generally lead to unsafe and environmentally aggressive operations.

Even when such technical standards exist, there can be room for using incentives to promote compliance, in addition to enforcement measures (Section 5.3, subheading Enforcement of Regulations). The renewal of a business, operating or driving license, for example, could be made dependent on a satisfactory safety record. Operators caught overloading trucks or speeding could be fined points that are taken into account in a system of compliance-rating linked to license renewal (Box 5-20). None of the developing countries reviewed made use of this strategy.

Fuel taxation (although not popular) can be an important tool to encourage the adoption of more fuel-efficient vehicles and fuel-efficient transport solutions (such as the use of public transport rather than private cars), and thus could be a useful measure to help reduce air pollution and greenhouse gas emissions as well as reducing urban congestion.

Box 5-20 Safety rating and license renewal

In a great many developing countries, enforcement of road traffic and safety rules is not effective. The US, Canada and Australia use a mechanism based on safety-monitoring and rating of operators, linked to license renewal. The approach gives operators a strong incentive to comply with safety and overloading rules. It makes the right to hold a road transport operator permit conditional on achieving a satisfactory level of compliance and on-road performance. This requires:

- Effective on-road enforcement (for example truck weighing and inspection stations)
- A databank containing information on operators' compliance, the results of vehicle inspections, and involvement in collisions and traffic accidents, accessible to enforcement and licensing agencies
- A system for monitoring the data stored in the above databank
- A rating system that uses the monitoring results to grade operators
- A link between the right to operate a truck on the road and the safety-rating mechanism, so that operators deemed unfit by the rating mechanism lose the right to operate a truck
- A system whereby enforcement agencies can perform safety audits on selected operators, for example new entrants, randomly selected operators or operators that have reached a threshold on the rating scale.

Enforcement of regulations

In developing countries, enforcement of safety, environmental and other (for example overloading) regulations is often ineffective and subject to corruption. How should regulations be imposed so that they are effective, minimize unnecessary costs to transport operations and allow responsiveness to demand? How can corrupt practices be eliminated?

It usually pays operators to evade the rules: if it helps avoid additional journeys, for example, the benefits of overloading a truck are far greater than the cost of a back-hander to a poorly-paid official. Facilities like weighbridges are often an important source of unofficial income. Measures with some potential to overcome these problems can include:

- Independent monitoring of enforcement efforts, in some cases even outsourcing the enforcement task under performance-based contract, combined with the use of random checks and surveys;
- Automating the enforcement task as much as possible (for example by the use of automated weighbridges), to minimize the involvement of personnel;
- Raising public awareness of the costs of ineffective enforcement;
- Capacity building for enforcement staff (for example, for police forces, managing traffic management issues and public transport rights of way).

Increasing the level of fines alone rarely helps: it can actually have the effect of increasing the incentive for corruption. Effective general deterrence of unsafe practices is achieved when, in addition to introducing severe penalties, there is a perceived high level of certainty that all offending will be detected and swiftly dealt with. Yet a common failing of many of the countries reviewed has been to continue with traditional efforts to strengthen enforcement, spending money on ineffective inspection stations and weighbridges, and continuing to make it attractive for enforcement officials to turn a blind eye to violations.

Box 5-21 Measures to improve enforcement

Corruption is a common problem in enforcing safety and overloading regulations. Under a World Bank-supported project, Indonesia has been trialing an experiment in Sumatra that involves outsourcing the operation of weighbridges to private sector specialists, with independent spot surveys to check compliance. The operators have incentives under their contract to ensure effective enforcement.

5.4 Pricing, cost recovery, taxation and subsidy policies

Inconsistent application of pricing policies and price controls seems to be common. It sometimes arises from a desire to keep prices low for particular groups of user, limit the inflationary impacts of transport or achieve a target allocation of traffics among modes. But it almost always results in market distortions and limits the ability of operators to develop the services needed by users.

Price controls tend to be a poor way of keeping the costs to users under control; they really only have a place where there is no prospect of competition. It is much better to encourage more efficient services by relaxing licensing and operating controls, allowing new market entrants, and encouraging operators to raise productivity and customize their services to suit demand. And economic efficiency can also be improved by making users face the full incremental costs of their transport decisions, including the costs of infrastructure and any externalities (congestion, pollution, accident risk and so on). While this has long been recognized, surprisingly few of the countries reviewed have made much progress towards consistent pricing policies.

Tariff setting

Tariffs for transport services and infrastructure should be set by markets wherever possible, reflecting quality of service, costs—including financing and provision for asset replacement—and the choices made by users faced with alternative suppliers. If government-owned services are to be priced at below marginal cost, this should be an explicit decision, made on the basis of a comparison of costs and benefits and with the subsidy clearly identified.

Private operators are keen to maximize profits, of course, and welcome the chance to set prices above costs. The arrangements established by governments to monitor transport markets should recognize and deal effectively with the possibility of collusion among suppliers—not necessarily through price controls, which would limit innovation and reinvestment, but by sanctions (such as loss of license), further removal of unnecessary controls inhibiting innovation, and the threat of permitting new entrants to the market.

While other factors (reliability, security, speed of delivery) are often more important, relative price can be a factor affecting the allocation of traffic among transport modes. A misallocation would occur if the prices set by each mode failed to reflect the costs involved—including the costs of externalities.

Taxation

What types and levels of taxation should apply to public and private transport infrastructure and services? Under what conditions might exemptions or concessions be applied?

Over and above a general level of taxation to raise government revenue, there is scope to apply special taxes to transport inputs. Often, in the past, these have been viewed as luxury taxes, levied on users like car owners and air travelers that are perceived to be at the higher end of the income scale. A low price elasticity of transport makes them a reliable source of public revenue.

But taxes also suppress demand and reduce the viability of transport services. Rather than aiming to maximize public revenue, governments should consider adopting a more structured system of taxation based on the principle of charging users for those costs they impose on society—the marginal costs of public infrastructure, congestion, noise, pollution, accident risk, and so on—that are not recovered in some other way. Thus, trucks would be charged for the incremental costs of road damage and congestion they cause; this would make their customers face the consequences of their transport decisions and would have the additional benefit of encouraging a restructuring of the truck fleet—the replacement of old trucks that do heavy damage per payload-ton with larger, more modern trucks that spread the load over more axles (Box 5-22). Unfortunately, most of the countries reviewed (Fiji and PNG are exceptions) have not stated an explicit policy on this.

In cities, car-parking taxation should also be considered as a tool to manage transport demand and better distribution among modes.

Box 5-22 Road damage and the structure of user charges

A study in PNG found that, like in many other countries, road maintenance had been under-funded for a long time. Roads were deteriorating, and user costs were 20 percent more than they would be if maintenance was funded and carried out properly. Various taxes and charges on users brought in more than was spent on maintaining roads, but the rates were not linked in any way with the costs of road maintenance.

The optimal level of maintenance spending is that which minimizes total costs: the costs incurred by the road agencies and the costs incurred by road users. The latter are always much more than the former (by a factor of 25 in PNG). The study estimated that spending the optimal amount on maintenance would lower user costs by 20 percent and total (user and agency) costs by 6 percent overall. It recommended a system of user charges that assigned a fair share of the costs of optimal maintenance among the different classes of users: those caused by heavy trucks were to be paid for by heavy truck operators, the rest fairly shared by all road users in relation to their use of the network. For all classes, savings in vehicle operating costs on better-maintained roads outweighed any increase in charges.

Infrastructure cost recovery

The argument for charging users for the costs they incur can be extended to infrastructure. Many countries are moving towards commercialization of ports, airports and toll roads, and thereby towards cost recovery for those types of infrastructure, but anomalies often remain: a structure of public sector port charges that do not adequately reflect costs incurred; or taxes on fuel and vehicles that do not make users face the costs of providing and maintaining the public road network. There are, of course, particular difficulties with applying full user charges for urban transport infrastructure such as urban railways or metros, where the infrastructure costs are very high (it is very rare for metro users to meet the full costs) and, in addition, there are major external benefits, particularly in the form of reduced road congestion, to take into account.

A rational structure of user charges and taxes, coupled with a policy of recovering the costs of externalities, would also help level the playing field for transport modes, encouraging traffic to be

carried by the mode that offers the best cost/quality combination and, thereby, encouraging further cost-saving investment.

Notwithstanding a policy of cost recovery, countries often fail to redirect the resulting revenues to meet infrastructure costs. It is not uncommon for road users, for example, to pay in tolls, taxes and annual license fees much more than the costs of maintaining the network, yet still have to put up with badly maintained roads.

One way around this is to establish dedicated funds that do not depend on government budgets but receive and manage the revenues from user charges. Usually this is linked to efforts to manage infrastructure like roads in a more business-like way on a fee-for-service basis by an independently managed agency. In the case of roads, it might involve a combination of (i) a dedicated road fund, used only for rehabilitation and maintenance, through which user charges are channeled, and (ii) an independent road board, representing stakeholders, to oversee the fund's management and ensure accountability and transparency. While road funds are a good idea, the experience with them has been mixed (Box 5-23).

Subsidies

Some countries promote services to the remote poor using price controls and/or cross-subsidies between profitable and non-profitable routes. Only a few (for example Fiji) address more directly the question of subsidy and have introduced service-franchising arrangements to support essential but unprofitable services. Appropriately designed, these can be effective in controlling costs, providing affordability for the poorest, and maintaining suitable standards of service. It is important to ensure that the subsidy is properly targeted and that the corresponding funds are secured. With the subsidies being explicit, not hidden, they can be weighed from time to time against the perceived benefits of the subsidized services. Moreover, they can be phased out over time, as demand develops and profitability improves.

Box 5-23 Road funds

Road funds existed before, but interest in them grew following the World Bank's report *Road Deterioration in Developing Countries*, by Harrell and Faiz (1988). This showed that poor maintenance had resulted in the loss of 15 percent of the capital invested in roads in 85 countries examined. The report gave rise to multi-donor initiatives to address the underlying causes. Another key publication was the *Commercial Management and Financing of Roads* (Heggie and Vickers, World Bank Technical paper No. 409, 1988). This suggested reform of road management along more business-like lines on a fee-for-service basis, with four main building blocks: (i) clarifying responsibility for roads as a basis for accountability; (ii) creating ownership by involving users in the management of roads; (iii) securing an adequate and reliable flow of funds; and (iv) strengthening management through sound business practices and accountability.

Introduced in the 1970s and 1980s (some in Eastern Europe came later), early road funds had the limited aim of protecting road funding from budget cuts. Off-budget accounts were set, funded by earmarked general tax revenues. Some financed all road expenditures, others only maintenance; some national/arterial roads, others secondary or urban roads too. Some even funded public transport and safety enforcement. There were also variations in arrangements for management and financial control. Most of these "first-generation" funds were unsuccessful. They were characterized by weak legal protection, a perception that they diverted funds away from other sectors, weak supervision arrangements and unsatisfactory day-to-day management, often by a road agency with no incentive to pursue efficiency.

Second generation (2G) road funds were introduced in the 1990s. Mostly, in contrast with first-generation funds, their aim was to "commercialize" roads, managing them as valuable assets in a more business-like way on a fee-for-service basis. They generally had the following features: (i) revenues were mainly from fuel levies, complemented by other tolls (ii) they tended not to require transfers from the government budget (iii) the tariffs created an explicit link between what users paid for roads and the quality of roads that resulted; and (iv) the revenues were deposited into a road fund managed and supervised transparently by an independent board. Their advantages stem mainly from the link between the road tariff and effective maintenance. Users are more willing to pay if they can see that it directly results in lower costs and that the funds are managed responsibly and transparently in their interests.

Over the last twenty years, there has been a significant improvement in the condition of the road network in many developing countries and, in part, this can be attributed to the introduction of road funds and the general raising of awareness of the road maintenance funding issue. However, although there have been notable improvements with the introduction of 2G road funds, underfunding of maintenance remains. There have been examples of excessive government interference in the funds, and there have also been examples of significant increases in maintenance funding by countries that have not introduced road funds. Clearly, government commitment is crucial to the success of whatever approach is taken to fund road maintenance.

6 STRATEGIES FOR ACHIEVING OBJECTIVES

There is no simple way to describe how strategies should be developed and structured. They depend on the objectives and policy principles, and the shortcomings to be overcome, and these differ from country to country. Choosing the best strategy is much easier, of course, if the objectives and policy principles are specified clearly. The steps required under each of the four main policy headings (institutional, planning, operational, pricing) then become self-evident, as the examples in Table 6-1 overleaf try to show. But they also depend on the circumstances of the country in question, the degree to which existing arrangements already comply with the stated policy principles, and the practical and political difficulties involved in implementing the required reforms. In many instances, studies will be needed to establish the best way from a number of alternatives. Consider the examples shown in Table 6-1.

Alternative **strategies for promoting economic growth** might involve fundamental choices between a planned approach to development—targeted government investments in infrastructure and continued government involvement in facilities like freight centers that are commercial in nature—and one that focuses more on corporatization and establishing an enabling environment for a private sector response to demand. The government would need to examine in detail the consequences of moves to corporatize railways, ports and so on: the funding of needed rehabilitation and upgrading, the impacts on financial performance, the need for continuing support for passenger and other non-profitable services, the regulatory environment for third-party access to assets, the safety implications of allowing third-party operations, the implications for employees. The adoption of cost-based pricing and a consistent approach to infrastructure cost recovery may have important implications for the allocation of traffics, the profitability of services and cost inflation, which will all need careful analysis. And the very need for this kind of policy analysis may require new skills and human resources that should be planned for.

Alternative **strategies for achieving poverty reduction** also require careful analysis, to determine priorities for infrastructure investments, establish mechanisms for funding, identifying opportunities and incentives for private sector involvement, devising ways to strengthen community ownership, promoting gender awareness and employment opportunities for women, and assisting communities to respond to the economic opportunities that are opened up.

There are also many different ways of **raising the quality of life and protecting public safety and the environment**. Targeted national road safety strategies have proved to be effective in progressively reducing road deaths and injuries. Different approaches can be used to implement these strategies (for example in managing commercial vehicle fleet safety.) An evaluation should be done of the effectiveness of regulatory and enforcement approaches—corruption at weighbridges, for example—and consideration could be given to alternatives involving the use of incentives and penalties to modify behavior (for example in demand management, restructuring the vehicle fleet, reducing overloading). These may require a review of the experience of other countries and the design of pilot implementation schemes to test effectiveness.

Institutional strategies—for example to achieve efficient, effective and responsive public administration—should also involve careful design and consideration of options. This might examine different mechanisms for stakeholder involvement and oversight, transparency in planning and performance monitoring, decentralization of functions, outsourcing of selected tasks and functions, and the use of performance measures as a basis for improved accountability.

Table 6-1 Examples of strategies to achieve objectives

Objective	Strategy ¹	Institutional Measures	Planning and Investment Measures	Operational, Regulatory and Licensing Measures	Pricing, Cost Recovery, Taxation and Subsidy Measures	Comments
	Key policy assumptions used in these examples:	Promote private sector participation; scale down role of SOEs; separate government's policy and commercial functions	Adopt consistent criteria for public investments; investments to meet threshold EIRR and FIRR	Promote competition; remove unnecessary restrictions on market entry and operations; tighten safety and environmental controls	Cost-based pricing; improve infrastructure cost recovery; apply direct subsidies for essential rural services	
Promote economic growth and improve the economy's efficiency and competitiveness	<p>Make the country's freight transport system more efficient</p> <p>Improve government's responsiveness to the needs of freight consignors/consignees</p> <p>Improve inter- and multimodal transport services</p> <p>Bring about a more economically efficient allocation of traffic between transport modes</p>	<p>Establish an Office of Multimodal Transport in the Ministry of Transport's Secretariat</p> <p>Establish an independent Freight Transport Advisory Committee to advise the Minister on logistics matters</p> <p>Hold an annual Freight Forum organized by the FTAC</p> <p>Eliminate restrictions on private sector provision of multimodal transport services</p> <p>Ratify international agreements on multimodal transport</p>	<p>As input to the first Freight Forum, identify critical infrastructure bottlenecks and development needs; prepare a draft Freight Transport Infrastructure Master Plan</p> <p>Draft criteria and guidelines for private sector involvement in transport infrastructure</p> <p>Strengthen requirements for public consultation on major infrastructure projects</p> <p>Develop guidelines on treatment of unsolicited project proposals</p>	<p>Identify and remove regulatory constraints preventing operators from offering integrated multimodal transport services</p> <p>Revoke Regulation 6/1985 (Railway Law) granting state industries priority in assigning railway capacity</p> <p>Draft and seek comment on an umbrella Transport Law eventually to replace the laws currently governing roads, road transport, railway transport, ports and maritime transport</p>	<p>Develop guidelines and an implementation plan for establishing uniform, cost-based pricing of transport services and infrastructure</p> <p>Implement a policy of charging for externalities</p>	Responsibility for assessing progress under this strategy could be assigned as a formal task to the FTAC
	Encourage the development of higher-quality road freight and logistics services	<p>Privatize the two remaining state-owned road transport companies</p> <p>Encourage an independent Road Haulage Industry Association</p> <p>Decentralize responsibilities for management of sub-national roads to provincial governments</p>	<p>Update the Tolled Expressway Plan and invite BOT bids for Phase I projects</p> <p>Bring forward Road/Bridge Strengthening projects for the declared Heavy Vehicle Network</p> <p>Outsource arterial road maintenance planning and the Road Maintenance Management System under tendered 3-year contract</p>	<p>Outsource weighbridge operations under renewable 2-year contracts with strengthened safeguards</p> <p>Implement the Transport Operator Safety Rating Scheme; revise the Road Law to make operators responsible for vehicles' safety performance</p> <p>Revise criteria for operator license renewal to incorporate the SRS</p>	<p>Revise the Road Law to authorize road and bridge tolls</p> <p>Restructure the Vehicle Registration Fee to reflect the pavement-damaging potential of vehicles</p> <p>Implement the Road Vehicle Fuel Tax and rebate scheme for non-transport users; allocate 65% of Fuel Tax receipts to provincial government road administrations</p>	Road transport costs for selected movements are sometimes used as a measure of performance, but this fails to capture improvements in service quality. Again, progress is best assessed by representatives of users themselves, for example the FTAC

Objective	Strategy ¹	Institutional Measures	Planning and Investment Measures	Operational, Regulatory and Licensing Measures	Pricing, Cost Recovery, Taxation and Subsidy Measures	Comments
	Key policy assumptions used in these examples:	Promote private sector participation; scale down role of SOEs; separate government's policy and commercial functions	Adopt consistent criteria for public investments; investments to meet threshold EIRR and FIRR	Promote competition; remove unnecessary restrictions on market entry and operations; tighten safety and environmental controls	Cost-based pricing; improve infrastructure cost recovery; apply direct subsidies for essential rural services	
	Help the railway to exploit its intrinsic advantage for long-distance freight traffic Reduce road/rail transshipment delays Establish the Railway Authority to regulate access to and operations using railway infrastructure	Offer selected Railways Corporation freight services to private concessionaires Allow private operators to offer third-party railway freight services Remove restrictions on private development of road/rail freight interchanges Privatize the Railway Forwarding Company and the Railway Property Management Company Approve the Railways 3-Year Business Plan and financial performance targets for the remaining business units of the Railways Corporation	Upgrade mainline rail freight capacity by implementing the World Bank railway rehabilitation project Transfer petroleum tanker rolling stock to the Oil Distribution Company Close the remaining uneconomic railway branch lines identified by the Hine Review	Revise the Railway Law to remove restrictions on foreign involvement in railway operations Draft changes to rules restricting third-party railway service providers	Establish the Railway Passenger Subsidy Fund to support continuation of railway passenger services Establish separate accounting and reporting systems for railway passenger services	Railway performance is often measured in operational terms, but the key indicators of interest here might be (i) the proportion of freight carried by rail and (ii) the financial performance of the Railway Corporation
	Overcome bottlenecks in the ports system Encourage port services to be more responsive to users' needs	Establish the Ports Authority to manage gazetted international ports on a commercial basis Relax restrictions on development of private port terminals	Develop six new container wharves and invite bids for their management Dredge channel to accommodate 15,000 dwt vessels Extend the coastal railway into North Port; invite bids for construction and operation of transshipment facilities	Port Authority to improve loading and unloading productivity by 40% and average ship clearance time to 18 hours with 24-hour working Maritime Safety Authority and Customs Department to achieve 24-hour working within 6 months	Port charges to be restructured to reflect costs Holding charges for cleared containers to be increased 200%	Key indicators will be related to port productivity and financial performance
	etc					
Reduce the proportion of people in poverty	Improve the accessibility of people in remote regions	Replace the Government Shipping Service with franchised private services Establish an Office of Rural Transport in each provincial transport administration Assign responsibility for the Regional Trust Fund to Provincial Councils	Develop inter-island wharves for all coastal communities of > 1,000 people Develop 240 rural bus terminals/stops Implement emergency rural road rehabilitation program; guarantee all-weather access to all communities served by existing roads	Invite tenders for six 3-year inter-island shipping franchises Reduce annual registration fees for buses on Class V routes Introduce temporary licenses for informal transport services	Allocate a guaranteed 25% of the Regional Fund to rural transport infrastructure Transfer committed subsidies under inter-island shipping franchises to the Regional Trust Fund	Key indicators could be the proportion of the poor served by formal road/shipping services
	etc					

Objective	Strategy ¹	Institutional Measures	Planning and Investment Measures	Operational, Regulatory and Licensing Measures	Pricing, Cost Recovery, Taxation and Subsidy Measures	Comments
	Key policy assumptions used in these examples:	Promote private sector participation; scale down role of SOEs; separate government's policy and commercial functions	Adopt consistent criteria for public investments; investments to meet threshold EIRR and FIRR	Promote competition; remove unnecessary restrictions on market entry and operations; tighten safety and environmental controls	Cost-based pricing; improve infrastructure cost recovery; apply direct subsidies for essential rural services	
Improve people's quality of life and protect public safety and the environment more effectively	Cut the road accident toll	Identify a lead agency in government to guide the national road safety effort, prepare a national road safety strategy with ambitious but achievable performance targets and a national action plan, allocate financial and human resources to implement the plan, and establish a Road Safety Council with membership from high-level transport, health, education and other stakeholders; to direct and coordinate strategy implementation.	Revise road design standards to meet the safety requirements of all road users; carry out annual safety risk audits and safety rating surveys; retrofit low cost protective features to reduce injury severity; harmonize vehicle safety standards with international best practice; and introduce traffic safety education into the core school curriculum.	Revise materials, criteria and procedures for driver training and testing; introduce graduated driver licensing systems for novice drivers; introduce points system for safety-related violations; implement general deterrence-based police enforcement and education to ensure compliance with safety standards and rules; upgrade vehicle inspection and testing standards; get 80% of unsafe vehicles off the roads within 2 years; make licensed operators share responsibility for safety performance of vehicles and drivers; introduce mandatory jail sentences for accepting bribes; and implement pre-hospital care and victim recovery services targeted to high-risk corridors.	Increase road safety program funding progressively to achieve effective delivery of national action plan; and increase penalties for safety-related offences to levels commensurate with achieving general deterrence outcomes.	Indicators: trends in accident and severity rates
	Improve air quality in urban areas etc	Establish an Air Quality Unit (AQU) in the Ministry of Environment and each provincial administration	Equip each provincial AQU with on-road emissions testing equipment	Mandate annual emissions tests for all vehicles older than 2 years Impound all vehicles failing on-road emissions standards; scrap government vehicles failing emissions standards	Channel all fines for emissions violations to provincial AQUs	Monitor air quality at key locations; maintain audited statistics on emissions tests

¹ These are just examples for illustration, of course. In most cases, other strategies would also be needed to implement the objectives set out in the first column.

7 WHAT SHOULD THE NTS LOOK LIKE?

Too often, NTSs are full of feel-good statements that are hard to pin down. There is never likely to be much useful public debate about strategies like “we plan to improve the road network so that people can have access to more employment opportunities” or “air quality is a critical problem, so we plan to introduce measures to lower levels of vehicle emissions.” Too often, too, the strategy is all, but objectives and basic principles are left unclear. A better approach would focus attention on key policy choices, answering more fundamental questions like: Is the public sector effective in delivering transport infrastructure and services? Is the regulatory environment effective in promoting competition, efficiency and service quality? Given that we all want the road network to be in better condition, what is the best way of funding road maintenance and holding the road agency more accountable for its performance in managing the network? Given that we all want better air quality, what economic inducements, regulations and enforcement measures are likely to be most effective in lowering emissions?

Again, this brings us back to fundamentals: What objectives are we trying to achieve? What fundamental policy principles should guide our efforts? What shortcomings are we trying to overcome? What strategies are likely to be the most effective? What are the most important first steps? And how will we tell whether we have succeeded? Answers to these are the key features of a good NTS.

How do the NTSs reviewed for this report measure up? Unfortunately, they were not all drafted to a consistent format, making comparison difficult. Some try to express a comprehensive strategy while others do not, but limit themselves to specific transport modes or aspects of sector performance. Some are able to presume broader government policies—for example on privatization, investment criteria, environmental protection, procurement, and so on—while others have no such background and have to state everything anew. And, most difficult of all, they address different readerships—by no means do they all speak to the general public about all that will be done, and why, in the transport sector.

Under these circumstances, the best that can be done is to highlight in general terms the pluses and minuses—those areas where NTSs score well, and successfully address the issues outlined in this report, and those that remain poorly dealt with or for which no policy or strategy is stated.

Figure 8-1 attempts this. Its main conclusions are that:

- There is, too frequently, a tendency to focus on investment projects before considering the contribution that could be made by alternative institutional, regulatory and pricing policy options in trying to achieve economic efficiency and other objectives;
- There is a tendency to avoid taking a comprehensive policy approach towards dealing with poverty, safety and environmental issues—rather, these issues are addressed within the confines of particular investment projects;
- Sustainability—not just of the environment but also of most other strategies adopted in pursuit of objectives—is not given enough attention, particularly in the application of pricing and cost recovery policies.

In preparing their NTS, governments should use the cells of Figure 3-1 and Figure 8-1 as a checklist of considerations to be taken into account when thinking about how particular policies can help address shortcomings in relation to each of their defined objectives.

As for the appearance (format) of the NTS, no special structure can be recommended. It depends on the target readership. As long as the intersecting elements of the matrix shown in Figure 3-1 are addressed (for which the format shown is likely to be useful in illustrating the contributions made by each element), it does not matter whether the strategies and plans of the NTS are structured according to transport sub sector (which may interest managers of the separate ministries or departments concerned), level of administration (of interest to national, regional and/or local governments), transport task or policy issue (of interest mainly to those narrowly concerned with one or the other).

8 MAKING THE NTS WORK AND MEASURING THE STRATEGY'S EFFECTIVENESS

8.1 Requirements for effective implementation

AN NTS is a plan to achieve stated objectives through a set of clearly defined strategies. If it is to be effective, it must also set out:

- Who is expected to do what in order to meet its aims;
- The expected outcomes of decisions and actions;
- The resources available;
- Measures by which performance, and the outcomes, can be judged;
- Procedures for monitoring performance and adjusting strategies as necessary.

Although these are the features of an Action Plan, they are an essential step in the process of sector management nonetheless: a strategy is of little use without a plan for putting it into action. There are several more columns to be added to the right of Figure 3-1, detailing the actions and the responsibilities and arrangements for its implementation.

8.2 Measures of effectiveness

International Development Agencies, such as the World Bank, set performance measures in the context of a log frame¹⁹ and/or monitoring and evaluation (M&E) framework for their projects. These can be quite detailed, often requiring expert resources to measure baseline conditions and changes that occur to a large number of variables during and after project implementation. In comparison, an effective NTS, being more general in nature, needs just a limited number of simple, key indicators of effectiveness for the most important objectives. Otherwise, performance can be unclear and debatable. It is particularly important to know how the transport sector performs with respect to those variables directly affecting transport users and the general public, that is, service frequency, transport fares and tariffs, journey times and accident rates.

It is also useful—though mostly for internal purposes, (that is, within the relevant planning or sector ministry)—to devise a set of measures or milestones for judging success in both policy and strategy implementation. These would indicate, for example, whether selected policies (for example promoting the role of the private sector, meeting a threshold rate of return for public projects, eliminating unnecessary regulatory controls, achieving cost recovery for public infrastructure) have been implemented as planned, and whether actions under a staged implementation plan for each strategy have in fact been carried out.

8.3 Consultations and external scrutiny

Public relations skills among transport ministries in developing countries are often weak. They tend to focus on projects, rather than outcomes. Projects are implemented with little public debate about where they should be and what they should be achieving. Cash outlays are often simply accounted for against physical progress on projects, and payments are usually made on the basis of inputs rather than performance and outcomes. There is often room for improvement in the way in which the cost-

¹⁹ A logical framework (*log frame*) is a matrix summarizing what a project intends to do and how, what the key assumptions are, and how outputs and outcomes will be monitored and evaluated.

effectiveness of programs and activities is gauged. Arrangements for financial management and reporting often do not provide an answer to the key question: Is the public receiving value for money?

A key aim should be to record the resources used in undertaking transport-related activities, so that they can be weighed against outcomes. This should be of concern not just to government but to all stakeholders with an interest in better transport and value for money from public funds: transport service providers, freight forwarders, traders, road users, agricultural producers, industrialists, importers and exporters, social/economic development agencies, NGOs, academia, the media and all manner of people among the general public interested in good governance. Common concerns with most oversight arrangements are that:

- Stakeholders have no say in how their tax money is spent; priorities and criteria for the allocation of funds are decided without reference to them
- Stakeholders have no formal role in reviewing sector management performance, and can do little about poor performance
- The process of consultation, if there is any, is of limited effectiveness in strengthening oversight and securing value for money in sector management
- Performance reports are of little value to stakeholders interested in assessing whether they are getting value for money; they are often inaccessible or are incomprehensible to the non-technical; financial and management performance reports are used mainly within government to account for cash expenditure and give no indication of efficiency or cost-effectiveness in achieving meaningful targets
- Little effort is made to listen to the public's needs, keep them informed of progress towards objectives and get them involved in reviewing this; the media are not used effectively to secure community support for management decisions.

The basic strategy should be to establish a system of independent oversight that subjects funding and management decisions to external scrutiny. This independent scrutiny, facilitated by transparent decision-making and reporting, would put pressure on the responsible transport agency to achieve satisfactory performance. A free flow of information on management decisions, criteria and performance would benefit all stakeholders, including the government: it would benefit the transport agency and government, on the one hand, by facilitating better-informed decisions, and stakeholders and the general public, on the other, by giving them confidence that their interests are recognized and being pursued.

Figure 8-1 Broad assessment of coverage of NTSs for the sample reviewed

Objectives	Policy Areas												Strategies
	Institutional		Planning & Investment		Regulatory				Pricing/Taxation/ Subsidy				
	Role of public/private sectors	Organiz'n of public-sector functions	Public investment criteria	Private investment criteria/controls	Regulations governing competition	Regs governing safety/environment	Enforcement of regulations	Incentives as adjunct to regulations	Tariff-setting	Infrastructure cost recovery	Intermodal taxation/pricing	Subsidy policy	
Economic growth/efficiency						n.a.							
Equity/poverty reduction							n.a.				n.a.		
Quality of life													
Safety/environmental protection													

Performance rating:

- Generally good coverage
- Sometimes adequately covered, often not
- If covered, often done poorly
- Rarely mentioned/addressed
- n.a. Not usually applicable

ANNEX: COUNTRY NATIONAL TRANSPORT STRATEGIES REVIEWED

For this report, National Transport Strategy documents and policy papers were compiled and reviewed for the following countries:

Australia	Bhutan	British Virgin Islands
Cambodia	Canada	Fiji
Finland	Guyana	Hungary
Iceland	India (National Road Transport Policy)	Jamaica
Kazakhstan	Malawi	New Zealand
Papua New Guinea (PNG)	China	South Africa
Tanzania	Thailand	
USA (National Freight Policy)	Vanuatu	Vietnam

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