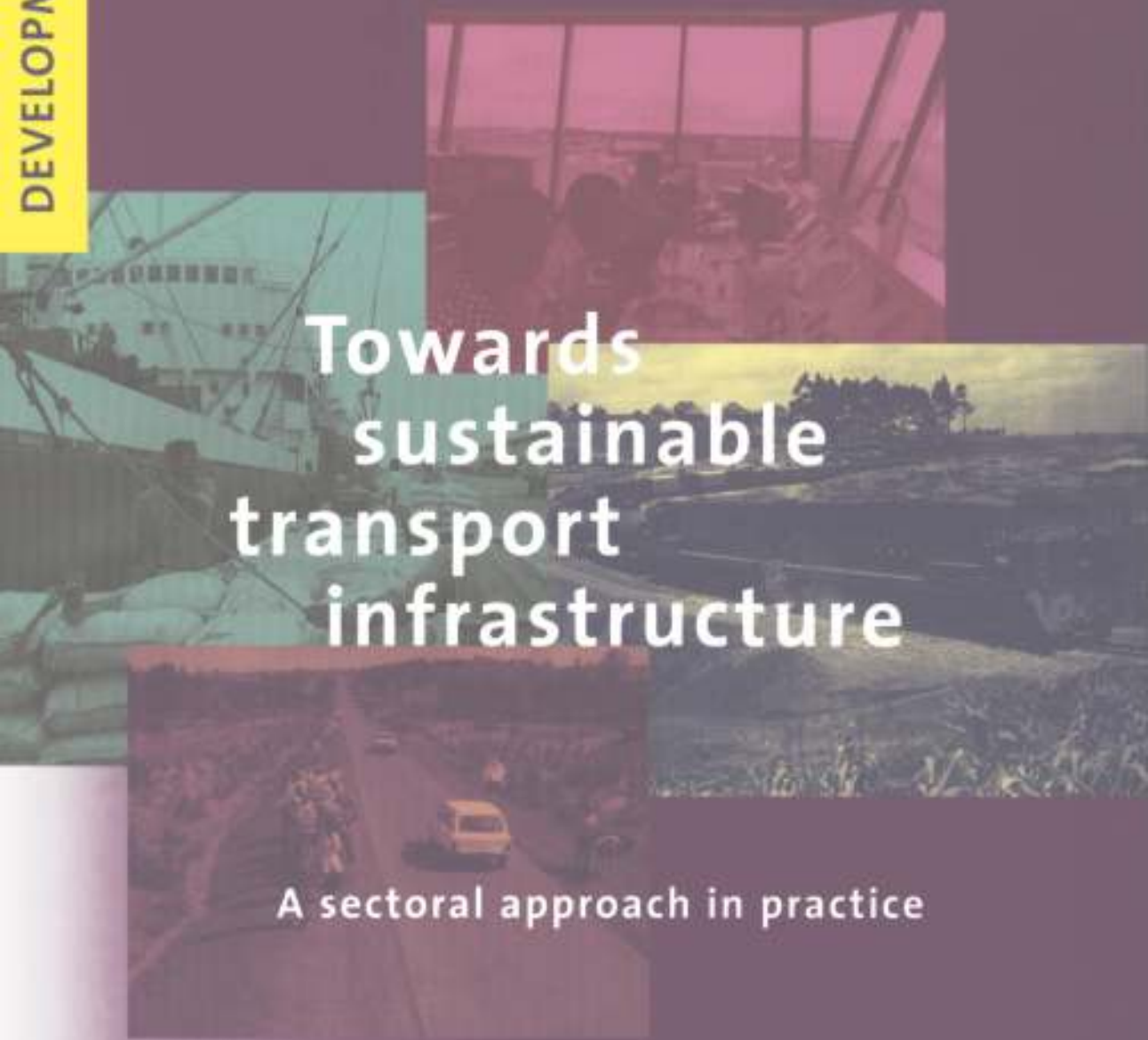
DEVELOPMENT

Transport sector guidelines



Towards sustainable transport infrastructure

A sectoral approach in practice

EUROPEAN COMMISSION
DIRECTORATE-GENERAL
FOR DEVELOPMENT

DEVELOPMENT



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European Commission
Directorate-General for Development

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Abstract
Towards sustainable transport infrastructure: a sectoral approach in practice gives practical guidance to transport experts and other specialists involved in this sector in developing countries. The book is divided into three parts, the first of which develops the essentials of a sectoral approach, focusing on roads, railways, ports, airports and urban transport. This provides the foundation for the guidelines in the second part for use in assessing requests for project financing and building sustainability. The second part follows the phases of Project Cycle Management adopted by the European Commission in managing development aid. Practical tools for implementing a sectoral approach are set out in the third part. These include standard formats for Terms of Reference for sectoral policy, prefeasibility and feasibility studies, and examples of indicators for monitoring project performance.

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Foreword



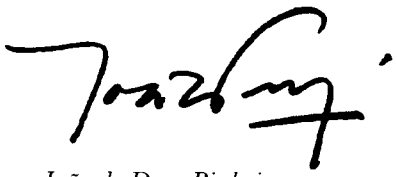
Transport infrastructure must facilitate the integration of developing countries into the world economy and foster regional and country cohesion. In working towards this goal, our challenge as one of the major donors to the sector is to ensure that investments in transport infrastructure respond to economic and social demands at country and regional level. This will enable the movement of produce and goods from production areas to markets and will give people access to employment and to health, education and other social services. Investments in transport infrastructure can help the functioning of urban areas and improved access in rural areas will contribute to poverty alleviation.

Meeting the European Union's objectives of development cooperation often relies on some mode of transport infrastructure. This key role of transport infrastructure is reflected in the investments through the Lomé I-IV Conventions. Expenditure in this sector is among the highest of all development sectors and amounts to 20% of programmable aid. It is no surprise that Sub Saharan Africa is the largest recipient of this aid. Because of the high cost of transport infrastructure in developing countries, investments demand justification on sound economic and social criteria.

Despite the high expenditure by both the recipient countries themselves and donors, transport and its infrastructure began to falter in many African, Caribbean and Pacific countries during the 1980s. This rapid expansion of infrastructure was no longer sustainable for a combination of reasons. External market fluctuations, reduced economic growth, weak policies and inadequate maintenance have taken their toll on transport networks.

The dilemma in many developing countries led to the European Union and its Member States joining forces with other major donors in searching for solutions. In 1991, the European Commission inspired Donor Code of Conduct led to strengthening coordination between donors and recipient countries and underlined commitment to the principles of the Road Maintenance Initiative. This was just the start of our efforts to improve our strategy for the complex task of managing our aid. In 1993, the European Commission launched a sector-wide evaluation of its transport investments financed by the European Development Fund. The evaluation called for a radical change of approach so that our future investments take account of the wider sectoral issues.

These guidelines are an important step towards improving our effectiveness in the transport infrastructure sector. I call upon all of you involved in transport infrastructure to use these guidelines to improve your understanding of the issues of a sectoral approach. Thereby, you will ensure transport investments contribute more effectively to our overall objectives of development cooperation.



João de Deus Pinheiro
Member of the Commission

Preface

These guidelines will help in finding answers to many of the requests made for funding roads, railways, ports and airports. These range from requests to rebuild an almost impassable road or to upgrade earth roads to bituminous roads, to requests for yet more equipment for railways, ports and airports. Such requests trigger more questions. Why is the project needed? What has to be done in the identification phase? Why is the port quay being extended when warehouse storage needs improving? Are there model Terms of Reference for consultants?

Such a wide range of issues to be dealt with involving many different people calls for comprehensive and practical sectoral guidelines. The guidelines should provide the broad sectoral perspective and insight into the issues, pitfalls and trends in advancing sector sustainability. These guidelines respond to the needs of desk officers, professionals and others working in various capacities in the European Commission and its Delegations. Staff of ministries and organizations in recipient countries are also looking for guidelines and so too are the consultants who are called upon to contribute to the sector in many varied ways. The guidelines are to be used by transport experts and other specialists, because regardless of individual background, everyone involved in the sector has a common goal to improve its sustainability.

The starting point for the guidelines was an evaluation of transport projects financed by the European Development Fund. The recommendations of this evaluation provide a sound foundation for a sectoral approach. The process of preparing the guidelines started with identifying the sectoral issues and the various solutions emerging in developing countries. A steering group of desk officers and transport experts gave input and guidance at regular intervals during this process. On the steering committee's recommendation the draft guidelines were submitted to field testing in mid-1995. The guidelines together with an evaluation questionnaire were issued to a wide audience in the European Commission and its Delegations, transport experts of the Member States, other development agencies, recipient countries and consultants. The response was very encouraging and

the feedback has helped to strengthen and focus the practical application of the guidelines. The end result is a set of practical guidelines to help build and apply a sectoral approach to transport infrastructure in Project Cycle Management.

Although the guidelines draw largely on experience in transport projects in African, Pacific and Caribbean states, the principles of a sectoral approach are equally applicable to other developing countries. The guidelines deal with the infrastructure of roads, railways, ports and airports and also examine urban transport issues. Clearly, there is no standard formula for applying a sectoral approach because circumstances and conditions vary from country to country. Nevertheless, the basic principles should be applied to all countries so that a consensus on country-specific solutions emerges.

The guidelines could not have been produced without the advice, encouragement and assistance of colleagues in the steering group and the many people who took the time and effort to complete the questionnaire and to provide additional comments. Recognition is also given to the valued contributions of Associated Consultants Europe, Belgium; TecnEcon, United Kingdom; and PCM Consortium, Belgium.

Ideas and concepts are continually evolving, and no less so in the transport infrastructure sector. These guidelines will be used in a series of training workshops to support and encourage their wider use. At the same time, exchanges and dialogue in the workshops and with colleagues in using the guidelines will form the basis for future updates.

During the preparation of these guidelines, the need became apparent for further guidelines on specific themes and technical issues. Whatever the topic, the objective of any guidelines must be to contribute to matching transport infrastructure to economic and social needs while providing a framework that sustains the network and benefits to stakeholders.

Bruce Thompson
Sustainable Development and
Natural Resources Unit
Directorate-General for Development

How to use the guidelines

The guidelines aim to provide a comprehensive overview of the issues in moving towards more sustainable transport infrastructure in developing countries. Furthermore, the guidelines provide a sectoral framework in which project proposals and requests for European Union assistance to the sector can be examined.

The guidelines comprise three parts, each with its own specific purpose. It is quite possible to use one part of the guideline independently of the other parts. The three parts are, however, interrelated and to use these guidelines to the maximum effect, the three parts should be applied as follows.

Part I: Building a sectoral approach

The first part of the guidelines, Building a sectoral approach, provides an insight into the key issues in transport infrastructure in developing countries and the emerging solutions of a sectoral approach. The first step in using the guidelines, therefore, is to read Part I in order to gain an understanding of the wider issues and implications of a sectoral approach. This should be done before attempting to apply this approach to individual projects.

Part II: Applying a sectoral approach to Project Cycle Management

Part II provides the means of applying a sectoral approach to examine proposals and requests for assistance in financing transport infrastructure projects. It is organized according to the phases in Project Cycle Management adopted by the European Commission in managing development aid (see page 80). For each of these phases, the issues affecting project sustainability are raised in a series of key questions. Possible problems and potential actions are proposed for each of the key questions. Thus the potential sustainability of proposed projects can be assessed by posing the questions for the appropriate project cycle phase. The lists of questions are, however, by no means exhaustive and should be used as the starting point to trigger further questions in bringing to light and examining the underlying causes of problems.

Part III: Tools of a sectoral approach

Tools for developing and monitoring projects within a sectoral framework are provided in Part III. These are standard formats for Terms of Reference and reports for studies in different phases of the project cycle. These are for a transport sectoral policy study which is generally done during programming, a prefeasibility study in the identification phase and a feasibility study in the formulation phase. The standard formats should be used in preparing Terms of Reference for consultants. Examples of sectoral and project monitoring indicators are also given and can be used in project implementation and monitoring. This will ensure that all the key issues affecting the sustainability of proposed projects are investigated, and that adequate information is available for informed decision making.

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Part I

Building a sectoral approach

Chapter 1

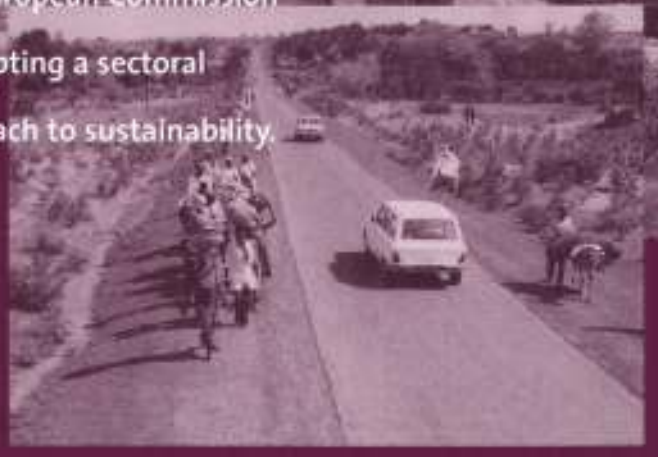
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Over-sized transport networks are a major financial burden for many developing countries. As a result of deferred maintenance, roads, railways, ports and airports are deteriorating, in some cases beyond repair. Recipient countries and donors are thus now seeking ways of sustaining these vital national assets. The European Commission is adopting a sectoral approach to sustainability.











A sector emerging from crisis

Transport infrastructure is essential for economic and social development. It provides vital links between centres of production and markets in economic sectors such as agriculture, industry and mining, and tourism. For regional development, it facilitates the flow of goods and people along import-export corridors linking coastal ports and landlocked countries. Transport infrastructure also gives people access to employment, health, education, recreation and a wide range of other social services. While transport is essential for the effective functioning of urban areas, recent studies have underlined the significance of improved rural access to poverty alleviation. Thus transport is not an end in itself, but rather a means to increasing economic and social development.

Transport makes a significant contribution to Gross Domestic Product (GDP), although less than other productive sectors such as agriculture, industry or tourism. In an evaluation in 13 African, Caribbean and Pacific (ACP) countries in 1993, the transport sector was shown to contribute on average 5 to 6% of GDP, ranging from 2 to 10%. Nevertheless, transport is one of the key factors determining the price of goods. Thus it is essential that the sector operates effectively and efficiently. Without a dynamic transport infrastructure, economic sectors will not be able to contribute effectively to national development.

Infrastructure is costly

Transport infrastructure is very costly for many developing countries to operate and maintain. Even the minimum provision of infrastructure can often far exceed likely traffic levels during its planned life. Take for example, large countries with widely dispersed populations and large distances between urban centres. A two-lane trunk road may be necessary but its minimum design capacity is some 8,000 vehicles per day, whereas traffic may never reach this level during its life. Although a transport link is necessary, it is important that the standards adopted are affordable to build and maintain. Similarly, small islands depend on their airports and ports for external access. Yet, airport and port design dictated by aircraft and ship operating needs requires a minimum size of infrastructure. Often this requires a higher capacity than the few daily flights and weekly vessel movements. Large distances, dispersed population centres and low traffic flows mean that in many cases infrastructure provision is proportionally more expensive in many developing countries.

Real cost of deferred maintenance

Large, oversized networks often mean that maintenance is a major financial burden for many countries. The total cost of road maintenance, for example, in Sub Saharan Africa is estimated at ECU 1,000 million per year. Without maintenance, these vital national assets – roads, railways, ports and airports – rapidly deteriorate to the point where the only option is to rebuild. This is expensive and economically unsound. Furthermore, deferring maintenance in favour of new roads without the resources for their upkeep leads to the loss of three to four kilometres of existing roads for every kilometre of new road built. But road users suffer most because they have to bear higher operating costs, estimated as two or three ecus for every ecu not spent on maintenance. Consequently, overall failure to maintain infrastructure translates into low quality service and higher costs for users, producers and consumers.

1.1 Expansion not linked to demand

In the 1980s, transport networks in many countries were deteriorating to such an extent that they were hindering rather than facilitating the movement of people and goods. This is the direct consequence of inadequate maintenance of the large networks expanded and upgraded by governments with donor assistance in the 1960s and 1970s. Roads linking capital cities and regional towns to country borders were upgraded to paved standards, or new roads built where none existed. Pre-independence railways with private sector interest became national railways, so reinforcing their monopolistic role. Ports were modernized and expanded in anticipation of increased trade. International airports were built to satisfy a national 'gateway' image, often leading to construction of over-sized terminals and the creation of national airlines. The euphoria went unchecked and when, for example, roads collapsed or were approaching the end of their design life they were rebuilt – generally with donor finance.

The evidence of inadequate maintenance is all too clear. Only a small proportion of road and rail networks received even the minimum routine maintenance. The extent of the crisis was revealed in the 1988 preparatory studies for the Sub Saharan Africa Transport Policy Programme (SSATP). Up to 50% of 300,000 km of paved roads was deemed to be in an acceptable condition, 25% was deteriorating fast and the remaining 25% was beyond repair. The 700,000 km of unpaved network was in even worse condition, with only 29% in acceptable condition, 32% mediocre, and 39% in a poor state. Railways experienced similar problems, with their share of freight traffic reduced from 80 to 40% of the total freight market. As a consequence of recovering only 50% of costs, passenger services have been severely curtailed. Ports became increasingly congested despite only limited growth in trade flows. Shipping lines frequently imposed port surcharges, and efficiency of operations declined. Similarly, substantial losses in traffic meant many airports and airlines were verging on commercial bankruptcy, only avoided by government subsidy.

1.2 Underlying problems and emerging solutions

This crisis situation in the transport sector is the result of a combination of interrelated factors. A few countries have made a start on tackling some of the problems with varying degrees of success.

Macro-economic constraints

The declining state of transport infrastructure largely reflects the macro-economic situation within many countries of Sub Saharan Africa. Slow or even negative economic growth accompanied by a heavy burden of external debt has led to decline or stagnation of per capita GDP and incomes in several ACP countries since the early 1980s. At the same time, population has grown rapidly at rates of up to 3 or 4% per year. Many people are poorer than they were in the 1970s in countries where investment rates are declining. Even after rescheduling, excessive external debts consume about 30% of export earnings.

Many developing countries are now taking difficult decisions to reverse these trends. Since the early 1980s, structural adjustment programmes have been launched to boost productivity and stimulate growth. Despite a hesitant start in some countries, more than half the countries of Sub Saharan Africa are embarking upon reform. Governments are still struggling to make available adequate funding to maintain infrastructure. Transport is no exception and there is still much to be done to find sustainable solutions.

Political and social unrest

Deterioration of some transport networks has been exacerbated by political and social unrest and called for additional investment in new routes to circumvent troubled areas. Closures of the Uganda and Rwanda border in the 1980s, for example, forced hauliers to find new routes, thus reducing the anticipated benefits from the considerable investment of governments and donors in the intermodal Northern Corridor linking Kenya, Uganda, Rwanda and Burundi. Yet another example is the civil unrest in Mozambique which paralysed freight transport in the railway corridor through Mozambique and into Zimbabwe. These disruptions not only create obstacles to development and higher transport costs to customers but also destroy all attempts at rational planning of the scarce financial resources allocated to transport.

Inadequate transport policies

Over the last two or three decades in many African countries, transport policy has evolved in a wider framework of economic policy focusing on state provision of services through parastatal organizations. The macro-economic effects of these strategies and the resultant impact on the transport sector have proven these policies inadequate. With government controlling transport there has been insufficient dialogue with either users or beneficiary sectors to ensure their needs and concerns were met. Consequently, transport has been supply-led rather than demand-driven with investment decisions based on factors other than sound economic criteria.

Inadequate policy without clearly defined strategies has meant that an integrated transport system has not developed which uses all modes effectively. Instead, investment has favoured

new infrastructure and equipment at the expense of maintaining the existing. Furthermore, each transport mode has developed largely in isolation and thus does not complement other modes.

Most governments are beginning to reform policies in line with transport infrastructure supporting economic development and taking account of user and beneficiary needs. This has been more successful in countries such as Senegal and Tanzania, which have sustained structural adjustment programmes and where such programmes have direct links with the transport sector. But even the few successes still have to withstand the test of time.

Insufficient finance for maintenance

Despite macro-economic reforms, many countries are encountering difficulties in allocating sufficient finance for transport infrastructure maintenance. This shortage of funds is partly due to the fact that decline in external revenues has not always been offset by mobilizing more domestic resources. Efforts in the transport sector to reduce costs are not generating sufficient additional funds for maintenance. Moreover, parallel efforts to re-allocate resources to priority sectors, such as transport infrastructure, that support major revenue sectors have run into bitter resistance, often of a political nature.

While contributing considerably to government revenue, the transport sector rarely receives adequate support for its operation and maintenance. Ports, for example, are often major earners of foreign exchange. Imports of fuel and petroleum products, vehicles, spare parts and capital goods for construction have a major impact on the balance of payments, and tariffs and duties on these goods generate significant revenues. Governments, however, view this revenue as a major source of central funds. Insufficient allocations have been made to maintenance and replacement of equipment. Spending cuts often fall more heavily on transport than other sectors. Maintenance, never a high profile activity, has always suffered most.

A number of countries are beginning to earmark a proportion of taxes and charges collected from transport users for infrastructure maintenance. Road funds are receiving finance from maintenance levies on fuel. Railways corporations and ports authorities are starting to review freight tariffs and passenger fares so that more revenue can be allocated to maintenance. However, securing sufficient finance for maintenance will continue to be one of the greatest challenges faced by the transport sector.

Public sector shortfalls

In the last few decades, government-owned transport has not established a distinguished record for the management of infrastructure and services. Experience shows that public ownership, either direct ministry control or through government agencies or parastatals, does not produce economies of scale. Instead, it tends to lead to numerous inefficiencies, such as administratively determined prices and tariffs, indirect subsidies of services and regulatory protection of domestic operators. Furthermore, operating in the public sector often means that transport agencies are plagued by restrictions on salaries, overmanning, demotivated staff, poor customer relations, corruption and militant



unionism. The combined effect is an inefficient transport system producing much higher costs.

Governments are beginning to realise that transport can no longer be run as a public service with minimum or no cost to users and that the sector requires a commercial approach. As a result, various reforms are being introduced. Many parastatals are either being commercialized or closed down in favour of private sector operations. Civil service reforms have been planned to tackle overmanning and related problems but implementation is slow. Railways corporations are being separated from their parent ministries and expected to operate as self-sustaining entities but are realising that it takes time to become commercially viable. Independent authorities set up to manage and operate ports and airports are struggling with competition from neighbouring countries. Even the ownership of roads which is likely to remain in the public domain is being redefined and in some cases independent authorities are being created. In all transport modes, the skills, resources and attitudes of the private sector are being tapped in providing services and maintaining infrastructure. Turning civil servants into entrepreneurs, however, is proving a long and difficult task.

Neglect of the environment and sociocultural issues

Recognition of the environment in the transport sector is now gaining increasing momentum in developing countries. A decade or so ago, environmental impact considerations were seen as part of the civil engineering design process and not as a separate issue within a broader framework. National environmental legislation was rather general and specific issues were left to external pressure groups. Environmental sustainability was thus not high on the agenda. Resulting from a worldwide concern for the environment, the impact of infrastructure construction and its longer term operation are slowly leading to a greater focus on improved design and impact amelioration measures.

Likewise, transport infrastructure has not taken sufficient account of the social issues in the communities and the needs of beneficiaries. Insufficient consultation and participation of communities often resulted in higher costs for the government in terms of provision, operation and maintenance. Opportunities were lost for increasing employment, generating income and involving women who head 22% of households in Africa (rising to 60% in areas of high male emigration). More user and beneficiary participation coupled with greater awareness of gender issues is helping to shape policy and practices that address these lost opportunities and problems.

Inadequate regulatory control

Inadequate regulatory control has led to over-loading, thus accelerating infrastructure deterioration. Vehicle and wagon over-loading is endemic on road and rail networks. Increasing axle loads beyond those the roads are designed to carry leads to disproportionately high damage to roads, thus bringing forward the need for periodic maintenance or rehabilitation. For example, a 50% increase in axle load leads to a fivefold increase in road damage. While a mere 20% increase, say from 12 to 14 tonnes, doubles the damaging effects and halves the expected road life. Over-loading on

railways is equally damaging and can increase the incidence of derailment causing damage to the rail, rolling stock and freight.

Most countries are well aware of the problems of controlling over-loading. One of the most difficult problems to overcome is the exposure of poorly paid officials to corruptive practices. Several countries have experimented with different mechanisms to enforce regulations but with limited success and have been frustrated by political interference. Some countries are reviewing their regulations and enforcement procedures and are actively seeking the cooperation of transport hauliers to find a sustainable solution.

Rising accident rates

Studies show that road accidents are a major cause of death in developing countries. Road accidents are the second highest cause of early death for the age group 5–44 years. The situation appears to be worsening with accident fatalities in Africa showing a 300% increase between the early 1970s and the late 1980s. In contrast, the number of fatalities in developed countries actually declined by 25% over the same period. Moreover, road accidents cost developing countries around 1% of GDP, measured in simple terms of replacement parts, medicines and hospital costs. These costs and increasing public awareness have prompted many road agencies to examine the fragmented responsibility for road safety, to update regulations and to improve enforcement procedures.

1.3 European Union support

The European Union in partnership with the African, Caribbean and Pacific States has, through successive Lomé Conventions, supported the financing of the transport sector. From Lomé I to III (1975–1990) investments approached ECU 2.5 billion, representing about 20% of programmable aid. Not surprisingly, Sub Saharan Africa has been the largest recipient.

Since the 1980s, donors have invested some ECU 12 billion in Sub Saharan Africa's transport networks, mostly on rehabilitating roads. Financing development in railways and ports, and strengthening institutional capacity received relatively smaller allocations. About 15 to 20% of this investment came from the European Union via the European Development Fund (EDF). European investment in the transport sector shows signs of increasing with allocations from the first financial protocol (1990–95) of the Lomé IV Convention at approximately 25% of programmable aid, an amount of ECU 2.0 billion. Only the World Bank gives as much aid to the transport sector. This makes the European Union one of the leading donors in this region of the world.

Early participation in the change process

Aware of the declining condition of transport networks and the large financial assets at stake, the European Commission together with European Union Member States and other donors started looking for solutions. Interest in reform began with the Sub Saharan Africa regional seminars of the Road Maintenance Initiative (RMI) held in 1989 and 1990 under the umbrella of the Sub



Saharan Africa Transport Policy Programme (SSATP). These seminars and follow-up workshops exposed donors and participants from both the public and private sectors to the problems associated with road deterioration and poor maintenance. Parallel initiatives began in the railways sector in 1988 and urban transport reforms were launched in 1991. These seminars helped the European Commission focus on ways of improving the development impact of one of its main investment sectors. It also became clear that the European Commission had to be at the forefront of any policy reforms.

Increased coordination with Member States

In 1990, the European Commission held consultations in the road sector with European Union Member States. This step led to the European Commission reinforcing its role in policy formulation and donor coordination. A year later in 1991, the European Commission and the

Coordinating donors

A Donor Code of Conduct resulted from the European Commission and the World Bank co-hosted Donor Conference on Road Maintenance held in Brussels in November 1991. The meeting continued the process of coordinating donor policies in support of the general objectives of the second United Nations Transport and Communications Decade (UNTACDA II).

Participants agreed that road maintenance is the priority and measures are necessary to restructure the roads sector in areas of management and finance, and the operation of road maintenance. These broad objectives led to a series of conclusions including the introduction of a coherent policy, improved legislative and administrative frameworks and appropriate cost recovery mechanisms in the recipient countries. The role for the private sector in contract works was recognized as well as use of labour-based methods in creating a national construction industry.

The Code declares that its subscribers will adhere to the common principles of the Road Maintenance Initiative (RMI) in accordance with the UNTACDA II recommendations. Furthermore, donors underlined their commitment to consultation and coordination between themselves, development agencies and recipient countries. Activities under the Code include:

- regularly exchanging information at central and local levels;
- jointly analysing road maintenance priorities in each country; and the capacity of countries to organize and manage the relevant services;
- setting up a continuous dialogue on road programmes underway;
- assessing the application of UNTACDA II/RMI principles;
- reporting annually to the appropriate bodies of the RMI.

The Code calls on all donors to encourage the countries of Sub Saharan Africa to subscribe to the Code's principles and recommendations and to actively contribute to the preparation of road sector reform programmes.

World Bank co-hosted a Donor Conference on Road Maintenance. From this Conference, which brought together donors involved in roads in Sub Saharan Africa, the Donor Code of Conduct emerged. This Code underlines donor commitment to the principles of the Road Maintenance Initiative and reinforces the process of consultation and coordination between donors and recipients.

1.4 Transport sector evaluation

In 1993, the European Commission launched an extensive evaluation of its activities in the transport sector. The evaluation covered over 200 EDF financed transport projects, 40 of which were subjected to field evaluation in 13 countries, with a more detailed sectoral evaluation in four of these countries. The evaluation comprised a critical and constructive examination of EDF operations, their efficiency and effectiveness, development impact and sustainability.

The overall findings led to the conclusion that major investment in the transport sector has produced primary infrastructure of generally good quality. But much more needed to be done to match the overall objective of aid and the purpose of transport investments. The evaluation showed an increasing discrepancy between these two objectives. A sectoral approach had not been adequately applied, and recipient countries have not adequately maintained their infrastructure.

Recommendations cover many areas, starting with policy and continuing through each phase of the project cycle, from programming to evaluation. The evaluation also called for the European Commission to modify its approach to implementing and monitoring the recommendations. Furthermore, the evaluation recognized and encouraged the European Commission's contribution to SSATP, in particular the Road Maintenance Initiative, and its participatory role in multi-donor programmes addressing sectoral issues. These programmes include the Integrated Road Project (IRP) in Tanzania and the Projet d'Adjustement Sectoriel des Transports (PAST) in Senegal.

An approach that integrates transport into the national planning process was called for. This sectoral approach should ensure transport investments respond to the needs of users and beneficiaries at country or regional level and are coherent with the government and donor development objectives in other sectors. At a project level, this approach requires more rigour throughout each phase, particularly identification and formulation. Adopting a sectoral approach will help secure the sustainability of transport infrastructure.

Chapter 2

2

A sectoral approach matches transport infrastructure to economic and social demands, and provides a framework for sustaining the network and benefits to stakeholders. This approach must include on-going dialogue between governments and transport stakeholders, a process which the European Commission is encouraging and supporting.





Essentials of a sectoral approach

Governments and donors are reaching a consensus on the foundations of sustainable transport infrastructure in their efforts to overcome the vicious cycle of build, collapse and rebuild that has dominated the transport sector. In practical terms, this means replacing the project-by-project approach with a sectoral approach covering all issues of sustainability.

Sustainable infrastructure

A sectoral approach links the provision and operation of transport infrastructure to the demands of beneficiaries. This means infrastructure – roads, railways, ports and airports – must be considered in relation to economic sectors such as agriculture, industry, mining and tourism, and to their beneficiaries – farmers, industrialists and their workers. Transport infrastructure must also respond to social needs such as education and health of rural and urban populations. Thus to ensure that the transport sector responds to demand, there must be continuous dialogue between government and transport users and beneficiaries. This may be a new experience for many countries, but it is a process that the European Commission encourages. Dialogue is the only way of ensuring that transport is linked to demand in a sustainable way.

In addition to user and beneficiary involvement and support, sustainable infrastructure depends on a number of interrelated factors. Perhaps the most important is a secure flow of sufficient funds for operation and maintenance. Furthermore, transport needs to be run as a business and this implies re-defining the responsibilities and tasks of institutions involved in transport. The most efficient structure would be for government to focus on policy making and regulation and to place network management and maintenance on a more commercial basis, where appropriate in autonomous agencies. More commercial management then opens the way for greater private sector participation.

What should a sectoral approach to sustainable transport infrastructure encompass? This is developed in the following sections which provide a framework for understanding the specific needs of – roads, railways, ports, airports and urban transport – considered separately in the subsequent chapters.

2.1 Shaping a policy framework

A national transport policy is required to ensure that transport contributes effectively to the country's economic and social development. Furthermore, trans-

From projects to a sectoral approach

'They finish their projects and leave us with the problems'. This comment made by a civil servant in a developing country expresses concisely the tasks donors face in endeavouring to solve problems with project and programme aid.

A project is a convenient way of administering aid and makes it easier to compare expected and real results after implementation. Experience, however, shows that the traditional project approach has several weaknesses. For one, this approach focuses on inputs and seldom tackles institutional issues. Furthermore, projects generally have short time scales and are not geared to structural changes. But more importantly, by focusing on project implementation the consequential effects or alternative solutions are neglected, thus at times producing inconsistencies between projects and the sustainability issues.

Aware of these drawbacks, the Government of Tanzania adopted a sectoral approach to the Transport Sector Recovery Programme for roads, railways and ports. Under this programme, the Integrated Roads Project tackled basic policy issues and the sustainability of the road network as well as extensive rehabilitation works. A coherent policy was developed and plans implemented to improve road management and financing. This included switching from road works undertaken with direct labour under a central ministry to decentralizing contract management and building capacity in the domestic private sector for road maintenance.

Integrated Roads Project, Tanzania

port policy must be consistent with and supportive of regional development strategies and regional transit agreements, and also the obligations of international agreements in the case of some transport operations. Thus policy must be based on a consistent and realistic needs assessment of economic and social sectors, and other development policies.

Fitting into the macro-economic context

Investment in transport as opposed to, say, health and education must reflect the government priorities in determining the economic balance between sectors. The need for investment in transport infrastructure arises from the demand of development strategies in economic and social sectors. There are many and varied strategies requiring transport support including, for example, increasing agricultural production to keep pace with population growth, improving food security and expanding agro-industries. The demand for additional or improved infrastructure to move a forecasted expansion in crop production may hinge on other factors such as the removal of price control, and the availability and affordability of fertilizers. Therefore, the criteria and assumptions on which strategies are based must be realistically assessed, if investment in intermodal transport and individual transport modes is not to distort the overall macro-economic balance.

The European Commission has developed a manual for Financial and Economic Analysis that considers these wider issues as well as those at project level.

Intermodal network

In making cost-effective use of transport infrastructure, careful consideration needs to be given to establishing links between separate parts of the same transport mode and between different modes. Such links also include cross-border transport with the neighbouring countries. In achieving an intermodal transport network which responds to user and beneficiary demands many aspects need to be assessed. These range from physical requirements such as transshipment terminals to institutional changes such as removing restrictions on certain modes to carry specific commodities on given routes. A full-scale comparison is required of all transport modes and where appropriate, all relevant routes, taking into account traffic volume, relative transit costs, and the capacity of links and different modes within the transport chain.

Balance maintenance and investment

Within the transport sector, a way has to be found to match infrastructure to demand and to balance funding between investment and maintenance. Failure to do this has sometimes resulted in supply-led policies and plans, for example, paving the entire trunk road network or designing roads and airports according to their administrative functions rather than the expected traffic volumes.

The basic principle is only build infrastructure that can be maintained. Transport policy, therefore, must strive for a balance between maintaining the existing assets and the requirement for investment in new facilities. In achieving this balance, priority must be given to maintaining economically strategic parts of the transport network and those parts which provide access to essential services, especially for the poor. If infrastructure is allowed to deteriorate, not only operating costs but also the investment required to return infrastructure to its original condition will rise dramatically. In certain circumstances, this may mean reducing the size of the network to a maintainable core. A coherent maintenance policy is thus crucial to the continued operation of any transport network.

Intermediate transport

Transport policies need to give higher recognition to non-motorized and intermediate transport. These are common forms of transport in developing countries and include walking, use of wheelbarrows, animal-drawn sledges and carts, bicycles, motorcycles and tractors. Efforts should be made to raise awareness of the value of these types of transport and in some cases to reduce local and cultural barriers to their use. Particular attention needs to be given to the potential of non-motorized, traditional transport in increasing mobility in urban centres. In some countries, intermediate transport may be the only way for communities, especially the poor, to participate in the domestic economy. The infrastructure required is likely to be relatively inexpensive, and governments should thus consider the potential economic and social value of intermediate transport for both urban and rural areas more favourably.

Research

More emphasis needs to be placed on proactive research to support transport's response to the needs of the economic and social sectors. Research must focus on the specific problems in developing countries. It can no longer be assumed that small local adaptions of the latest research findings will provide the answers. There must be greater awareness of the need to use research and technological developments that explicitly recognize the features and conditions of developing regions and countries, such as soil types, construction materials, high transport costs, vehicle types and rural urban migration.

Research can provide tools to address problems in all stages of transport development and operation. Regular collection and analysis of data are needed to support transport policy and programme development. During implementation and operation, research can assist in developing sustainable solutions to country-specific problems, by producing appropriate equipment, processes and test procedures. National and regional research capacities are essential for exchange of experience, are channels for technology transfer, and also act as a focus for training from policy to practical skills.

2.2 Involving stakeholders

The involvement and support of key stakeholders will help governments ensure that transport meets demand. Three broad categories of stakeholders can be distinguished: in country; neighbouring countries and regional groups; and donors.

In country

Stakeholder participation will smooth the way for introducing the reforms needed for ensuring network sustainability. Stakeholders include key government departments, private sector organizations including transport operators and unions, and the private sector representatives from the major industries such as agriculture, mining and tourism. Local communities should also be represented in this dialogue. Launching and sustaining dialogue, however, is a time consuming process. But once there is confidence and trust among the key stakeholders, experience shows that policy reform and mobilizing donor funds for investment are easier.

Regional coordination

Dialogue with the neighbouring countries and sub-regional groups is essential to ensure that regional and international transport agreements are respected. Without regional coordination, national transport improvements are often seriously impaired. This is particularly a problem for landlocked countries which depend on the transport policies and procedures of the transit countries. Similarly, smaller islands are dependent on the transport policies and procedures governing the regional transport services shared with larger island groups or with continental countries. The priority areas requiring coordination are regulations governing transit traffic, customs and immigration procedures, and infrastructure construction and maintenance standards. Therefore, regular meetings must be encouraged of regional technical groups working within an established political cooperation framework or independently.

Donor coordination

Greater coordination of donors in the transport sector can enhance the impact of their assistance. More donor coordination is needed not only at the project level but also at the sectoral level to establish a coherent approach and to tackle the issues underpinning transport sustainability. The European Commission inspired Code of Conduct agreed by the major donors in the framework of the Road Maintenance Initiative is one example.

There is even more need for coordination between donors and a recipient government as donor support moves towards sectoral programmes financed by several donors. Ideally, the recipient country should lead the coordination because donor procedures and requirements need to be matched to the country's legal and administrative procedures. Where there is more coordination and governments are undertaking sectoral reform, donors have shown their willingness to finance programmes tackling the maintenance backlog and contributing to sector sustainability.

2.3 Securing finance

A secure flow of sufficient funds must be available for operating and maintaining the existing transport network. If necessary, the network size will have to be reduced to match the level of funds for its maintenance. Effective pricing of user charges is a key to rationalizing transport demand, to raising revenue for infrastructure maintenance and to achieving the long-term sustainability of the transport network.

Convince users to pay

One of the essential elements in achieving sustainable infrastructure is that the users are willing and able to pay for its operation and maintenance. If this user pay principle is not accepted then transport systems will continue to decline. Ways have to be found of increasing the awareness of users and beneficiaries and involving them actively in decision making on financial planning and management. This can be done in the roads sector, for example, by giving users and beneficiaries substantial representation on roads boards and by enabling them to participate in managing and operating funds controlled by Roads Boards.

Prices and pricing mechanisms

Government controls on transport prices are generally ineffective. A World Bank review of 15 developing countries in the late 1980s showed that roads suffered from inadequate funds for maintenance, all railways made losses, some ports made losses while others made profits, and several airports made profits but airlines made losses. Government control of prices is loosing credibility and most countries are now moving towards cost recovery prices.

Getting prices right, particularly relative prices between the transport modes, is crucial to an efficient transport system. Providing transport at below cost price has been seen as a means of redistributing national income, increasing job opportunities and stimulating economic activity in deprived regions. While some of these arguments may still be valid today, this rationale must not distract governments from introducing market-based pricing in order to use scarce transport revenue more efficiently. Transport

users should then be left to choose a transport mode according to attributes such as price, speed, comfort, reliability and safety.

A rational pricing policy should aim at reducing and eventually eliminating pricing that distorts and restricts transport demand. Prices should at least cover the financial cost to the community. The level of user charges will, however, depend on how robust the economy is and the usage of the transport networks. Nevertheless, prices should cover the operating and maintenance costs and in the long term should generate sufficient revenue to meet repayments on capital investment plus interest. In certain circumstances, extra charges for controlling traffic congestion or environmental damage may be justified. Setting prices at the right level and regular review are prerequisites for more efficient use of transport resources.

Pricing mechanisms should be determined by current and projected demand which is, in turn, affected by pricing policies. For example, setting fuel prices below the economic cost may stimulate extra road journeys, perhaps at the expense of the railways on inter-urban journeys. Conversely, controls or high tariffs on vehicle imports may raise transport costs. Too high or too low prices can lead to inefficient decisions by both corporate and personal transport users, regarding development and production factors such as location, inputs, technology and employment. Pricing policy, therefore, must be analysed in conjunction with transport demand.

While low effective demand may render some transport systems commercially unviable, the government may have good reason to subsidize transport. Social reasons may justify support for transport services, such as access to medical and educational facilities, and compensation for externalities such as support for public transport in urban congestion. However, subsidies should be explicitly targeted at beneficiaries rather than through internal cross-subsidization. Care must be taken to avoid inefficiency and waste which often occur when subsidies abandon commercial principles.

2.4 Restructuring institutions and involving the private sector

It is now time to stop managing transport as a bureaucracy and to start managing it as a business based on sound management practices. As a general principle, policy and regulation should remain the domain of the government. While management, operation and maintenance should be put on more of a commercial footing, thus giving opportunity for greater private sector involvement. This means defining clear management objectives, and introducing commercial-style management methods.

Reform in the public sector

The first step in reform in the public sector must be to clarify the tasks and responsibilities of different and often overlapping administrations involved in transport. This requires simplifying management structures by placing responsibility for infrastructure at different administrative levels, for example, main roads at national level and community roads at local level. Infrastructure management and operation need to be



released from the rigidities and inefficiencies often inherent in large public sector organizations. This means that responsibilities for various operations will need to be transferred where possible to autonomous agencies or to the private sector. Government, however, will need to retain the authority to approve operating contracts and monitor performance, and where necessary, to fund obligatory public services. In addition, more commercial management in autonomous agencies would help to close the gap in professional remuneration and standards between the private and public sectors, which has widened in many developing countries over the last 20 years.

Capabilities within ministries must be strengthened to understand, establish and enforce sound transport policies and regulations. It is essential that government departments retain and recruit sufficient staff of the right calibre to carry out these pivotal tasks. This means ministries responsible for transport must have staff with capabilities in planning, monitoring, supervision, regulation and contract management.

Management information systems

The efficiency of management and operation is improved with the aid of well-designed management information systems. Computer-based management information systems can support planning, budgeting, accounting, analysing business trends and transport network conditions, and monitoring the use and safety of equipment and facilities. Like infrastructure, however, these systems need constant maintenance. A realistic approach§ is to search for a simple solution which can be easily maintained.

Commercial management and private sector participation

Every opportunity should be taken to introduce commercial management and operating practices, including agreeing objectives and measurable outputs, and monitoring performance. To operate in the commercial environment, the public sector will need to adopt more private sector attitudes and procedures such as simple management and information systems, and private sector accounting and auditing systems. Changing attitudes lead to new ways of working and deciding whether certain services are best retained in the public sector or whether the private sector has the resources and skills to deliver them more effectively and efficiently.

Apart from transport operations, the private sector is more active and generally efficient in delivering consultancy and contracting services. Private sector involvement in infrastructure construction and maintenance needs to be expanded so that it becomes normal practice to contract out design work and direct supervision, major rehabilitation, periodic maintenance and most routine maintenance using labour-based methods where possible. For this approach to gain momentum and achieve sustainability, local consultants and contractors should be an integral part of projects and programmes in the sector.

2.5 Integrating the environment and society

The environment

Like many other economic activities, the transport sector brings enormous benefits to society, yet it also damages

the environment. The most obvious forms of environmental damage are the visual intrusion of infrastructure construction, air pollution from vehicle exhausts, and noise pollution from aircraft in some locations and from road and rail traffic generally. Urban traffic congestion is clearly an environmental blight adding to air and noise pollution and increasing the cost of commercial and social activities. Limiting these impacts in transport infrastructure and services must be high on the agenda of improving people's wellbeing and reducing the risk of accidents.

Environmental issues have generally been tackled within the transport sector rather than transport being required to respond to the needs of the environment. Although project formulation incorporates sound environmental standards, increased environmental awareness means that major projects are also subject to an environmental impact assessment (EIA). This is generally carried out at a project level. EIAs are having favourable effects, such as improved project planning and design, and better decision making. Some deficiencies, however, remain that cannot be handled at the EIA project level such as the cumulative impacts of different projects within the same geographical area or the same sector. Similarly, the effect of changes in the operation of transport systems, including increased motorization in urban areas and changes in traffic patterns between the transport modes pass undetected.

These issues may only be remedied by extending environmental assessment to an earlier stage in the planning process and introducing sector-wide measures to monitor them. This requires governments to formulate environmental policies and to ensure that their environmental principles are reflected in transport sectoral policies and action plans. Such an approach will increase the awareness of transport agencies and managers of transport systems of the options in developing transport systems.

The European Commission has developed a manual of environmental procedures and methodology for considering these issues throughout the project cycle.

Employment and gender issues

Insufficient involvement of society and communities in infrastructure provision, operation and maintenance is a loss of opportunities to contribute to poverty alleviation. In countries with high unemployment, for example, job opportunities can be enhanced through greater use of labour-based methods involving both women and men. This can create significant employment during construction, but most of these jobs only offer short-term employment. Permanent employment can be created though the use of labour-based methods for operations and maintenance.

The European Commission has developed manuals for integrating Women in Development and also for Employment and Structural Adjustment plus guidelines on steps to take in developing projects.

AIDS and health

While new or improved infrastructure brings economic and social benefits, it can also facilitate the spread of disease. Opening up new traffic routes and improving access and personal mobility



AIDS and Transport

World Health Organization figures show that more than half of the world's 15 million AIDs sufferers are in Africa. East Africa is allegedly the worst afflicted region with truckers and prostitutes comprising two of the highest risk groups. The Kenya Medical Research Institute reports one in four truckers test HIV positive. Little wonder then that AIDs and other diseases are transmitted along the main transport routes. Truckers and prostitutes are now targeted for education and screening by government and non-governmental programmes in some African countries, such as Kenya, Tanzania and Nigeria.

European Commission Transport Sector Evaluation, March 1995

can contribute to the rapid spread of communicable diseases such as AIDS. Extra health measures must be given by health agencies and contractors during the construction stage, when there might be many temporary migrants in a community. When works are complete, health agencies must cope with the greater number of travellers in passing traffic who can both bring and carry away infections.

2.6 Improving regulations and operations

It is necessary to strive for a situation in which effective use is made of available technology within a supportive regulatory framework. This may mean giving preference to labour-based methods where there is an abundance of local resources. However, firm enforcement of suitable regulations is needed to ensure safe and secure operations.

Safety

The high road accident rate in many developing countries results from a wide range of interrelated causes. These include the poor condition of infrastructure, vehicle over-loading, substandard condition and use of vehicles and inappropriate driver behaviour. There are other issues such as poorly defined and fragmented responsibilities between parastatal agencies and ministries. Moreover, the low pay of the police and other officials exposes them to corruption, thus making it difficult to enforce regulations. These factors together with inadequate data on accidents complicate the analysis of the accident causes and the design of remedial measures. Safety programmes touch many different sectors and experience in countries with a high level of motorization shows the vital need for a coordinated and integrated approach.

Safer transport is usually achieved by regulation and operation control and through rigorous enforcement of safety standards, including better design and maintenance standards in the infrastructure itself. Getting users involved in setting regulations and even in policing their own operations, particularly in the competitive road haulage sector, can help in securing effective enforcement.

Education, information and training can also play an important role in raising safety standards. Specialist maritime institutions or railway training centres are important in this respect, as well as road driver safety programmes which should be made widely available.

Labour-based methods

A major issue in the transport sector is the choice between capital-intensive and labour-based methods, especially for infrastructure maintenance. The apparent bias against labour-based methods should be resisted in countries where labour is plentiful and cheap, and where unemployment is high. The choice of method should be determined on the basis of an economic comparison of total costs, accurately reflecting the relative cost of local labour and capital equipment, which is often imported.

2.7 Towards sectoral sustainability

Build a coherent national transport policy.
There must be a national transport policy based on a consistent and realistic assessment of the economic and social demand for transport and other development policies. Policy must be developed within the framework of continuous dialogue between government and transport stakeholders. Policy development requires an overall understanding of the transport sector, the role of each transport mode and the potential for intermodal transport.

Adjust the transport network to resources.
A way must be found for adjusting the network to demand, while at the same time balancing resources between new investment and maintenance. The guiding principle must be adjust the size of the transport network to the resources available to maintain it.

Secure revenue from user charges.
A secure flow of sufficient funds must be available to operate and maintain the existing transport network. This means transport will have to be operated more commercially on a user pays principle. Thus in introducing market-based pricing of user charges, government controls will need to be removed in order to eliminate pricing that distorts and restricts transport demand.

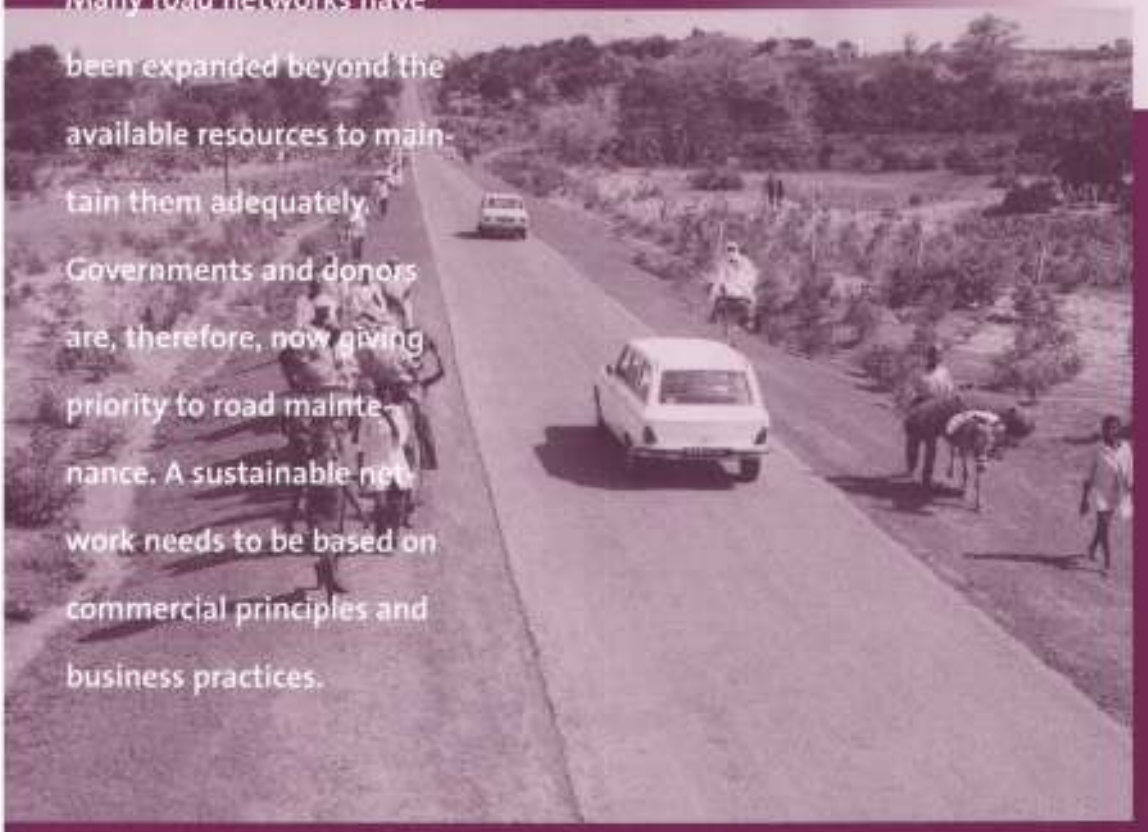
Adopt a more commercial approach.
Transport needs to be run as a business and this implies re-defining the responsibilities and tasks of institutions involved. The most efficient structure would be for government to focus on policy making and regulation and to place network management and maintenance on a more commercial basis, where appropriate in autonomous agencies. Commercial management then opens the way for greater private sector participation.

Increase awareness of the environment and sociocultural issues.
The actions of transport agencies and entities actions must positively contribute to the environment, gender issues and employment, as well as avoiding or mitigating any negative impacts.

Chapter 3

3

Roads are the major transport mode in most developing countries. Many road networks have been expanded beyond the available resources to maintain them adequately. Governments and donors are, therefore, now giving priority to road maintenance. A sustainable network needs to be based on commercial principles and business practices.





Roads sector

Roads dominate the transport sector in most developing countries, carrying 80 to 90% of passenger and freight traffic. Generally, roads are the only means of access to most rural communities and often the only means of inland transport on the island countries of the Caribbean and Pacific. In African, Caribbean and Pacific (ACP) countries, roads take up to 5 to 10% of government recurrent budgets and 10 to 20% of capital development budgets. Capital expenditure on roads makes up a significant part of the external debt of many developing countries.

An essential part of modern economic and social life, roads are a flexible and convenient mode of transport which can function even where infrastructure is in poor condition. Furthermore, road transport provides access to all other transport modes and is practically the only mode giving door-to-door service.

Roads are big business, not only in terms of capital investment, but also in the related transport services, vehicle assembly and support industries, and as an essential service to all productive and social sectors. Road operations can be demand responsive, economically efficient and financially viable for a wide range of freight and passenger needs. Consequently, failure of the road network would have major economic and social consequences for any country.

3.1 Key issues

Road networks too large to be maintained
This has resulted from poorly conceived policies which are not sufficiently linked to economic and social demand. Consequently, many road networks have expanded well beyond the size and standard the country can afford to maintain.

Insufficient finance made available for road maintenance
This is a result of budget limitations as well as misallocation because of inadequate understanding of the importance of maintenance. Allocations from central government rarely meet road maintenance needs and the present level of road user charges is generally too low to make good the financial shortfalls.

Public sector dominance
Too many institutions with overlapping responsibilities are involved in road management and maintenance. Transport infrastructure is managed as a bureaucracy rather than a business. The skills and resources of the private sector are insufficiently employed in providing services and works.

3.2 Giving maintenance priority

Maintenance of large road networks has become an overwhelming problem for many roads agencies in developing countries. Deferred maintenance leads to destruction of road pavements and to escalating transport costs. Unmaintained roads have resulted in the loss of one-third of the capital invested in the Sub Saharan African road network. Diversion of resources for maintenance into the construction of new roads can result in the loss of three to four kilometres of existing road for every kilometre of new road built. Furthermore, as roads deteriorate, vehicle operating costs increase rapidly. World Bank estimates show that the extra costs imposed on road users, largely through increased vehicle operating costs, can be up to two to three times the savings on maintenance. The study concluded that investment in road maintenance gives on average almost twice the return of that from new road construction.

Maintenance is an easy target for governments seeking economies. In fact, these are usually false economies. The problem of deferred maintenance needs addressing, not only in terms of finance but across the whole range of institutional, technical and organizational support. This is the case in almost all developing countries. Deficiencies in these critical support areas have led to gross under-funding of roads, and coupled with weak management, has resulted in poor maintenance.

The backlog of deferred maintenance on priority roads must be given higher priority than road upgrading and construction of new roads. This does not mean no investment in economically justified new roads. Rather, it means that road maintenance must be given a much higher priority. Measures are, therefore, needed to ensure effective, efficient and sustainable road maintenance. Thus, support to the road sector should be reserved for a road network that can be maintained with the available resources.

The gradual erosion of the road network in many countries is leading to a radical change in policy. Governments have been forced to take action to stop this process and to create a sustainable mechanism for road maintenance. Donors have shifted their priorities to road maintenance rather than new construction. Recipient governments and donors are now fully aware of the need to establish road maintenance policies on a preventive rather than a curative basis.

Road Maintenance Initiative

The magnitude of the road maintenance problem led to the Road Maintenance Initiative (RMI) under the Sub Saharan Africa Transport Policy Programme (SSATP). With multi-donor support, the RMI aims to establish sustainable road maintenance policies in countries throughout the continent. Early lessons showed that poor road maintenance stems from a wider range of financing and management issues. Subsequent experience has led to defining fundamental principles for sustainable road maintenance. These are: involving stakeholders, secure financing, responsible institutions, and sound business practices.

These principles are interdependent and reform in one area alone will fail to achieve sustainability without reform in the other areas. How these reforms are



introduced, however, will vary from country to country but the principles must be adhered to.

3.3 Involving stakeholders

People are demanding better access to markets and social services and are prepared to pay for maintaining this access. However, as more maintenance revenue is generated from user charges, users and beneficiaries are demanding to know where and how funds are to be spent.

The views of users must be taken into account in determining the balance between maintenance and investment. Private sector operators and major representation of demand sectors should, therefore, be represented on supervisory boards responsible for the allocation of funds to road investment. Road user representatives may be drawn from a range of groups including chambers of commerce; automobile associations; bus and trucking companies and their federations; farmers' associations; and major enterprises with substantial vehicle fleets.

Agencies that encourage and enable some user participation are discovering new benefits. User acceptance of increasing charges makes it easier for the Ministry of Finance to regularly adjust charges. User participation, through say Roads Boards, makes it more difficult for the Ministry of Finance to borrow from road funds.

Regional coordination

The roads sector offers considerable opportunity for regional integration but requires good coordination. This starts with policy ensuring that neighbouring country policies are not contradictory and that transit traffic regulations are compatible. This extends beyond the direct regulation of traffic into the pricing policy for fuel and spare parts. If there are wide differences between costs in neighbouring countries, operators will buy the cheapest fuel in suffi-

Involving users through Roads Boards

Governments clearly accept the rationale of involving users and beneficiaries in carrying out reform and improving management of the road network. Several African countries, for example, Benin and Mozambique, have established or re-established Road Boards. This enables users, who pay for road maintenance, to influence policy, become involved in strategies so road networks respond to demands, ensure actions are carried out according to agreed plans and monitor. Governments are also finding user involvement especially helpful when it comes to increasing user charges or other fees. Bringing together representatives of producers, industry, farmer and construction organizations and transport service operators, hauliers and institutions with the road agencies creates confidence and makes the stakeholders take their individual and corporate responsibility seriously.

Source: Balcerac de Richecour and Heggie, 1995

cient quantities to cover lengthy return journeys, and cross-border smuggling thrives. There are regional bodies throughout Sub Saharan Africa for the management of transit traffic along corridor routes and within sub-regional groups. Public sector bodies are generally concerned with infrastructure and fixing regulations. Private sector operators form associations to aid the harmonization of procedures ranging from licences to transit documents and customs procedures, and to counter excessive government controls. The complexity of transit traffic suggests that more coordination between public and private sectors is necessary, with donors acting as facilitators.

3.4 Securing finance

Road maintenance has been provided by public sector roads agencies on the basis of a budget controlled to a greater or lesser extent by the Ministry of Finance. In most countries, road expenditure tends to be financed from the general government budget and thus competes with other public sectors for funds. As a result, spending allocations often have little relationship to underlying needs or economic importance.

A regular and sufficient flow of funds is a prerequisite for an efficient road maintenance system. Budget allocations for road maintenance, however, rarely exceed 30% of requirement. Even countries which have introduced substantial reform have available only about half the amount needed for long-term network sustainability. Thus, ways to improve revenue generation must be found.

Finance for road infrastructure has traditionally come from general taxes and duties which are also levied on vehicles and fuel. The finance raised has to cover both capital expenditure for new roads and maintenance expenditure. This general tax revenue is usually supplemented by road user charges. Generally seen as a 'fee for service', these charges include vehicle and driver licence fees, transit licences, fuel levies, and bridge and road tolls. These charges are often earmarked for road maintenance. The medium term aim should be that revenues collected from road users should cover all operating and maintenance costs of the road network. In the longer term, user revenues should also contribute towards the capital cost.

Given the 'open' nature of the road network, with freedom of access to all users, it is difficult to bring charging for using the network directly into the commercial sector. Thus for the foreseeable future, funding for roads is likely to come from general taxation and user charges, such as fuel levies.

Pricing policy

The full costs of the roads ultimately have to be paid. Loans have to be repaid. There is a strong case for those who benefit from the roads should pay for them and those who benefit most should pay most.

An economically efficient pricing policy requires users to pay at least the marginal cost of each journey, that is the additional costs the journey imposes on the community. This cost comprises the cost of pavement wear and tear, and of traffic congestion. In most developing countries, however, the congestion cost



is only significant in urban areas. Incremental environmental costs are also likely to be more significant on the more heavily trafficked urban road network.

While it is desirable to introduce an efficient pricing system, there are considerable practical problems in its implementation. Many governments may deem it politically too sensitive to recover annual road expenditure from the users. This problem may be further compounded by a low fuel price, which is effectively a subsidy to vehicle users and encourages road travel unnecessarily. The most practical way is to introduce a policy of indirect taxes. This should, however, not deter people from using the roads. Instead, policy should be structured to recover the residual cost not covered by direct taxes on those sections of the community directly benefiting from road use.

Charging road users

Road user charges are an efficient means of financing road infrastructure for two main reasons. Firstly, a well directed system of road user charges promotes efficient allocation of resources, because road users pay the economic cost of their transport and travel decisions. Secondly, road user charges are an important means of cost recovery for governments.

A practical system of road user charges can be based on the general principle that charges should dissuade road use by those not prepared to pay the cost their journey imposes on the community. As far as possible, charges should apply directly to each journey so that users can make a rational decision about that journey, for example bridge tolls and fuel levies. More complex systems, such as mileage based charges, are likely to be administratively unworkable.

Earmarking and road funds

Revenue collected from road user charges can be channelled to a dedicated road fund for maintenance. Earmarking of certain user charges for this purpose, and possibly certain taxes such as on fuel and tyres, is one way of securing more adequate funds. Governments, however, often resist earmarking for specific purposes because this constrains effective budgetary controls and limits scope for allocating funds between spending priorities. But if revenues are not earmarked, there is a risk that road maintenance is postponed because the effect on the roads is not immediately evident.

Road funds are proving effective for maintenance funding provided simple mechanisms are created for revenue collection and transparent systems operate for revenue allocation and disbursement from the fund to various roads agencies. Ministries of Finance tend to look upon such funds with suspicion. This may not be justified if government and budgetary control systems are good and transparent. Where these exist, however, the case for a road fund would be weaker. Unfortunately, too few developing countries are in this position, so earmarking and road funds become the most workable solution. As long as these funds are perceived as 'fee for service' then the traditional objections of fiscal earmarking tend to disappear.

Road funds: securing adequate funds for maintenance

Road funds have arisen where government and budgetary systems are unable to allocate a regular flow of sufficient funds to maintain even a core network of roads. Several African countries have revived or created road funds to secure adequate finance for road maintenance. Some funds, for example, in Mozambique and Tanzania, also finance rehabilitation and others, such as the road fund in South Africa, go so far as to finance new constructions.

Revenue comes from two main sources – road user charges and allocations from general tax revenues. The first of these sources is relatively stable, while the second fluctuates widely. Road funds should be geared to user charges providing most of the revenue. User charges range from a maintenance levy on fuel, bridge and ferry tolls to vehicle licences and international transit fees. Of these charges, the fuel levy generally contributes about 80% of the revenue. An empirical figure of US$ 10 cents is set as a target to ensure operation and maintenance of the core road network. African countries are approaching this target, include Central African Republic, Mozambique, Sierra Leone and Tanzania.

Almost all road funds have a management board. To be efficient, the board needs a clear mandate on its operations and the delegation of the road fund administration. This makes it easier to counter wider government interference, and together with substantial user representation on the board, reduces the risk of raids on road funds. Furthermore, user representation eases the arrangements for regular review of user charges and funds revenue base.

Collection, allocation and disbursement of funds must be kept simple. The revenue flow from just a few sources of collection to the fund should be kept short. Ideally, the revenue should pass from collection points directly to the fund kept in a separate bank account. Allocations for main, rural and urban roads is best agreed at a central level and disbursed to the various road agencies directly responsible for the road fund. Ensuring these mechanisms work smoothly requires a regular financial and technical audit.

Source: Balcerac de Richecour and Heggie, 1995

3.5 Restructuring institutions and involving the private sector

In most countries, the main institution or agency responsible for road infrastructure is the Ministry of Public Works which may also be responsible for other types of public works. The ministry is often responsible only for main roads, while minor roads and sometimes also urban roads are in the hands of local authorities. Furthermore, many different organizations may be involved in road construction and maintenance, to varying degrees of decentralization. In one country, for example, some 650 organizations were found to be involved in road management, with resulting problems of consistency, coverage and efficiency. There are obviously inefficiencies at both extremes: giving one central



department control of all roads, or dividing the responsibility between hundreds of small departments. Therefore, it is essential to clarify which agency is best suited to road maintenance and management, to agree on the division of responsibility and the involvement of the private sector, and then to structure the institutions effectively.

Adopt commercial attitudes

Transport infrastructure has been managed as if it were a public service with minimal or no cost to users. But to be sustainable, transport has to be managed as a business. This means defining clear management objectives, introducing effective management information systems, and adopting business accounting and auditing systems. Every opportunity should be taken, therefore, to introduce commercial operating practices even to roads agencies in the public sector.

A clear organizational structure is essential for consistent management of different parts of the network. This demands clarification of responsibility among government departments at different levels and among roads agencies. Responsibility assignment encompasses operation, maintenance and road network development, traffic management and road safety and environmental impacts of roads and traffic. This entails matching responsibility and capacity at the local level for community roads, and at district level for rural and feeder roads often with some central government back-up. Main trunk roads and international routes are generally the responsibility of a central government agency, while urban roads are dealt with by local government. Traffic regulation, for example axle-load control, is a function of the main roads agency. Clearly, identifying responsibility according to actual or planned capacity at various levels helps develop consistent management in roads agencies.

Whether within the public sector or as autonomous institutions, roads agencies must have clear management responsibilities and a guaranteed source of income. These factors have major consequences for an agency's functioning and accountability. In the first instance, inadequate management responsibility increases the likelihood that roads, particularly in rural areas, are not officially gazetted and therefore not maintained. In addition, an agency must be able to budget for future expenditure and plan activities. The agency can then be audited against realistic and agreed targets for the nature, scope and cost of the works undertaken. This needs to include whether funds allocated have indeed been passed on to the relevant agencies and in a timely manner, and whether the agencies have spent the funds efficiently and effectively.

A commercial environment will not thrive while public sector professionals are poorly paid. In the Zambian public service, for example, the salaries of middle grade road engineers are a ninth of those of their counterparts in the private sector. Overall staff motivation and morale plummets. Any reform must address these issues. One reform is to remove the roads agency staff from unrealistic public sector pay scales.

Autonomous roads agencies

Autonomous agencies have been established in countries such as Ghana, Sierra Leone and Ethiopia. This approach can

help to overcome some of the problems in public services such as low salaries and poor motivation. A more commercially oriented management team can counter daylighting, manipulation of allowances and other devices used to supplement salaries. Moreover, financial autonomy allows agencies to develop long-term network planning and to secure financial means for sustaining the service the infrastructure is designed to deliver. It is usual for such agencies to have a performance contract with government against which activities and use of resources can be measured objectively by simple management information systems.

Management information systems

Management information systems are important tools in strengthening planning, programming and operational procedures in roads agencies. As roads agencies begin to adopt more business practices, there is increasing demand for reliable and appropriate information for decision making. Experience shows that past practices of gathering, processing and applying information are no longer sufficient for managing roads commercially and sustaining infrastructure and the services it delivers. Management information systems give managers access to basic information about the road network and its condition, and provide the means for preparing budget forecasts of annual investment and management programmes. Their use extends to monitoring network conditions, and technical and financial auditing of the network, be it maintenance of existing roads, upgrading, or new construction.

Getting the best return from these systems involves careful assessment of the needs of the roads agency and its users. Only when these needs are identified can an appropriate system be appraised and designed. The temptation to install the latest computerized system with numerous outputs must be resisted. The system design chosen must match the financial and manpower resources of the agency for its operation and maintenance. The data required to deliver information for decision making at various levels must be reliable and simple for the agency to collect, both in time and direct financial costs. It is important therefore that the basic system installed is the minimum the agency requires so that users gain confidence in it and the results produced.

Commercial management and private sector participation

Road networks are managed more commercially when the private sector becomes involved. This helps overcome many of the problems which contribute to poor road maintenance, such as general use of direct labour or force account labour, and the poor condition of public works plant and equipment.

Utilization rates for public sector plant and equipment are often only 20 to 30% compared with 80 to 90% in the private sector. There are many reasons for this state of affairs including use of non-standardized equipment, shortage of fuel and spare parts, pilferage, cannibalization of equipment, and poorly trained and paid staff. In part, this reflects the status of managerial responsibility and inadequate managerial and financial accountability for plant and equipment.

In nearly all cases, contract work is more cost effective and of better quality than



force account. However, there must be a reliable flow of funds to pay contractors on time and qualified staff to supervise them. Supervision should also be contracted out to the local private sector. This is part of capacity building of the local contracting industry, and therefore may need technical support.

Contracting to domestic contractors involves designing contracts to suit the technical and financial capacity of the local firms. Local contractors can be employed for a wide range of work – design and direct supervision, periodic maintenance and major rehabilitation and most routine maintenance using where possible labour-based methods. Many countries have successfully contracted work to entities ranging from single-man contractors to medium-size firms. One of the resources available to small firms is the plentiful supply of labour. Contractors need encouragement and training in the use of labour-based methods and the role of women in these activities.

Achieving management objectives and protecting infrastructure assets calls for effective regulation enforcement, particularly vehicle load control and improved safety. Again, there is an opportunity for greater use of local expertise in regulation enforcement as well as for data collection, research and technical development to ensure transport meets the needs of the economy and the population.

3.6 Integrating the environment and society

Roads respond to the demand from people and bring benefits in terms of improved economic opportunities and social welfare. These benefits include access to markets, jobs, health and education. Improved roads contribute to reducing transport costs for freight and passengers. In delivering these benefits, however, both negative and positive environmental and sociocultural impacts may arise. Measures must, therefore, be taken to reduce the short-term negative impact and to ameliorate and manage the long-term consequences.

With good planning and management, the environmental and sociocultural negative impacts of road rehabilitation and maintenance can be limited and will generally be outweighed by the positive benefits of reduced noise, accidents and traffic congestion, and increased employment. New road construction, road widening or major realignment can, however, have more significant impacts. When roads penetrate undisturbed country or are built in densely populated areas, the long-term consequences can be profound and more damaging than those during construction.

There is a range of potential environmental and sociocultural impacts. Rarely do all aspects occur together, but some will during road construction and maintenance. Therefore, it is important to be aware of these potential impacts and their consequences.

Potential negative environmental impacts:
- increased noise, air and dust pollution during construction;
- consequences of excavating and transporting road building materials;
- cutting through unstable geological formations likely to result in landslides and soil erosion;
- effect on drainage that restricts water channels used for agricultural irrigation;
- disturbance of flora and fauna.

With careful planning and by involving local communities there can be positive environmental gains:
- the benefit of new settlements, agriculture and other land use changes in undeveloped areas along the new road.

Potential negative sociocultural impacts:
- severance of communities and loss of accustomed travel paths;
- problems of population displacement and resettlement resulting in acquiring land;
- extra burden on local health services, particularly the spread of HIV/AIDS resulting from an influx of migrant workers.

With forethought and active community involvement, there are potential positive gains:
- local labour, including women, can find employment in construction and maintenance activities;
- isolated communities can be linked together and have increased access to education and health services, and employment and market opportunities.

The negative impacts largely occur during construction and may be avoided or substantially reduced by tackling the issues early on. The issues can be highlighted in early consultation with communities likely to be affected by road development. Together with suitable design techniques, this will help reduce the negative impacts and to establish mechanisms for dealing with the long-term problems.

The roads agency must also develop skills for creating appropriate environmental regulations and sociocultural standards. They need to be able to incorporate these regulations and standards in design and construction. For example, contractors need guidance on additional health facilities with specific measures for HIV/AIDS awareness creation and prevention. The environmental impact by road users, especially trucks, need to be monitored and environmental and sociocultural issues pursued once the project is completed.

3.7 Improving regulations and operations

Roads in most developing countries are faced with two major operational problems. The first is the over-loading of vehicles which results in accelerated road damage and deterioration. The second is the high rate of road deaths and injuries, well in excess of rates in Europe.

Over-loading

Over-loading goods vehicles is a major problem in most developing countries and is one of the principal causes of road deterioration. Many regulatory controls



are out-of-date for the traffic using the present infrastructure and even where appropriate, are inadequately enforced. Furthermore, axle load limits vary within a region causing difficulties for truckers to load and yet conform to different regional regulations. This has led to truckers ignoring regulations and overloading trucks far beyond the legal limit for which the road is designed. The results have been disastrous because increasing axle loads accelerate road deterioration exponentially. A 20% increase, say from 10 to 12 tonnes, doubles the damaging effect of the load and halves the expected road life. Many vehicles are over-loaded, sometimes with axle loads of over 20 tonnes because there are no rigorous or effective sanctions. This abuse, together with inadequate maintenance, are the principal causes of road deterioration.

Hauliers and carriers need to be made fully aware of the relationship between excessive axle loading and the impact on road and bridge deterioration. One way is for road user charges to reflect the damage likely to be caused by heavy trucks. Another way is to widely publicize information about the effects of overloaded axles on pavement damage and road repair as well as to privately owned trucks. Road hauliers involved in road management in Zambia have proposed and supported enforcement of radical improvements to the regulatory regime.

Safety

Road accidents are a serious problem in many developing countries and cost these countries about 1% of GDP per year. While the absolute number of deaths and injuries might be low compared with the traffic volume, the accident rate is much higher than in Europe. In principle, improvements to roads should enhance safety despite permitting higher speeds. But high speed plus inadequate driving standards and poorly maintained vehicles seems to be a fatal combination. The design of every road, whether rehabilitated or new, therefore should be carefully checked for likely accident black spots. Furthermore, calls for assistance with driver training, vehicle inspection and enforcement of traffic laws should be fully supported.

3.8 Steps towards sustainability

Update policy and plans.
The starting point is a clear policy negotiated between government and users and beneficiaries. Policy and plans for its implementation must focus on the development of an affordable, strategic network, together with the priorities for maintenance and construction. This will involve many changes and difficult decisions within the public sector. The need for change and the time it will take must be understood and supported at the highest level of government.

Secure funds for network maintenance.
Review the revenues and costs of operating the road network, and then establish secure sources of finance. This is likely to require earmarking of funds from general taxation and from road user charges, and establishing dedicated road funds. If funds are insufficient to maintain the network, even with the best management, then alternative maintenance methods have to be adopted, or the network size reduced to that which can be sustained at an agreed standard.

Restructure roads agencies.
Within the public sector, this will mean clarifying responsibilities and resolving the roles of overlapping agencies. Undoubtedly, this will require institutional re-organization with the potential for creating an autonomous roads agency responsible for, say, the trunk and international road network, with urban roads allocated to city government and rural roads to district government agencies. Autonomous agencies should have authority to set prices, collect and retain revenue, to invest and to have appropriate employment conditions, although ultimately responsible to the government for their actions.

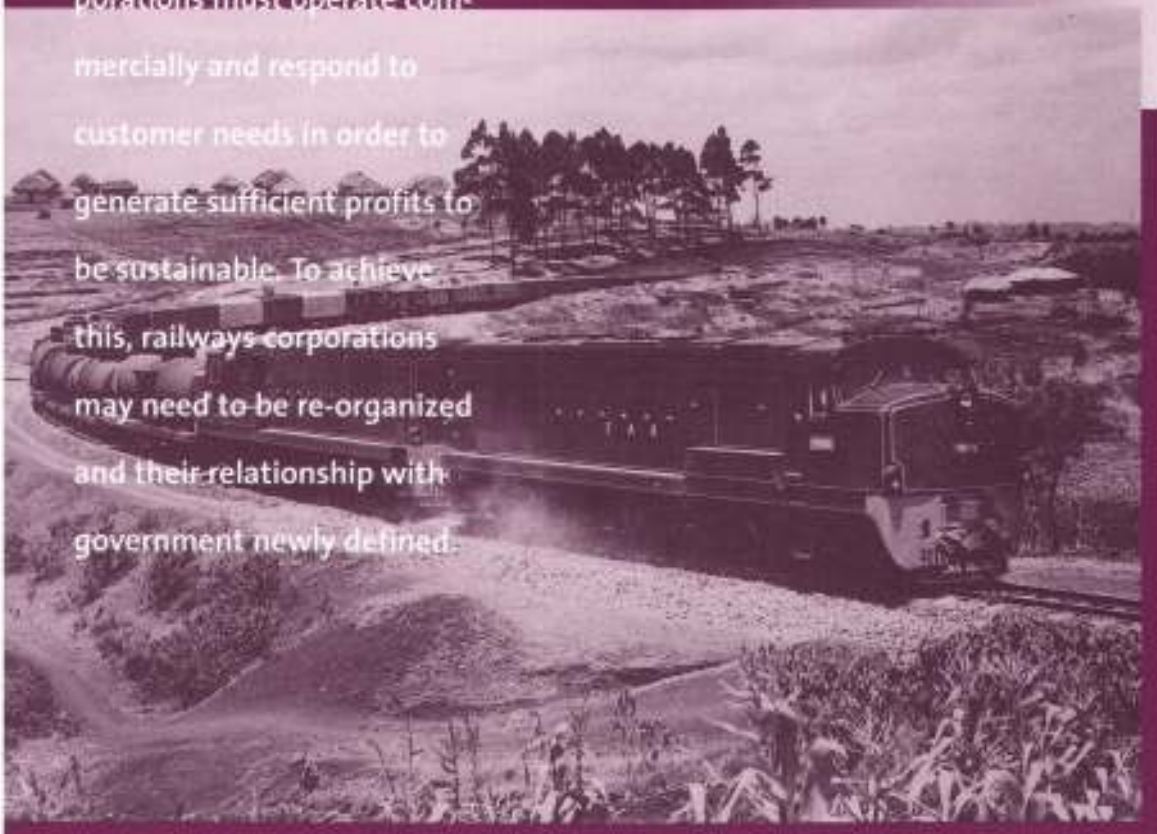
Introduce business management practices.
Introduce commercial management and business practices in all roads agencies. These will include setting and agreeing objectives, and monitoring results through an appropriate management information system, introducing commercial accounting systems, and achieving accountability by independent technical and financial audits.

Involve the private sector more.
The most likely mechanism is through contracting out a wide range of services and works, such as design, supervision, monitoring and basic and applied research. Contracting out of works is more advanced in construction and should be extended to all levels of maintenance using appropriate labour based methods. However, if this public-private sector partnership is to be successful, small local companies will need support in capacity building.

Chapter 4

4

Railways are efficient for the long distance transport of bulk freight. Railways corporations must operate commercially and respond to customer needs in order to generate sufficient profits to be sustainable. To achieve this, railways corporations may need to be re-organized and their relationship with government newly defined.





Railways sector

Railways are the most appropriate transport mode for hauling bulk loads over long distances and are very suitable for goods transport to and from the land-locked countries of Africa. When highly utilized, railways are a very efficient transport mode.

Railways are expensive to construct and equip, and require a higher degree of management sophistication than do roads. Over the last 20 years as the relative cost of road transport has fallen and rail services declined, much traffic and thus transport revenue has shifted from railways to roads. Consequently, the cost of maintaining and managing an extensive railway network is now beyond the means of many developing countries. As a result, there has been a steady deterioration of infrastructure and a decline in services.

Few new railway lines have been built and in some countries there has been a significant reduction in the railway track kilometres. In Kenya, for example, the length of track fell from 6,900 km in 1970 to 2,600 km in 1990. Over that same period, Zimbabwe cut back its railway network by 15% to 2,700 km. There are exceptions. Tanzania and Zambia, for example, have constructed the Tazara Railway. South Africa has added an extra 10% to its railway system bringing it to 23,500 km in total in 1990.

4.1 Key issues

Services do not reflect customer needs
Railways developed where there were few alternative means of transport. Services were often provided to satisfy the operating requirements of the railway system. Although the competitive environment has changed, railways still concentrate on fulfilling historical timetables rather than adjusting services to meet customer needs.

Insufficient revenue for maintenance
Restrictions on tariff increases and subsequent under-funding of the railways lead to insufficient maintenance or capital spending to ensure the network's integrity. Consequently, track and rolling stock are often in a state of disrepair and so too are signalling and control systems.

Public sector dominance
Railways corporations are usually large administrative units and are often major national employers. As a result, railways corporations tend to have a high political profile. Much of the work is labour-based and thus large numbers of semi-skilled and unskilled labourers are employed who would have difficulties securing other employment. Therefore, the sensitivities associated with changing the function, management or control of the railway system will need to be fully

explored in any realistic consideration of investment proposals.

Highly skilled resources in short supply
Railways need skilled management to operate infrastructure and train services. The level of technical complexity requires a higher level of competence and administration than is usually found in government organizations. A shortage of management expertise can be a symptom of poor training or inadequate incentive systems within the railway management. Civil service career and salary structures fail to attract good management and technical staff.

4.2 Involving stakeholders

Railways have traditionally provided a service which users have had to adapt to, and in some instances, governments have directed certain commodities to the railways. Now, however, railways are having to attract customers and to adjust and adapt services to meet their needs. It is, therefore, imperative that customers are involved in the decision-making process for railway investment and services. Furthermore, as railway customers are often involved in door-to-door transport of commodities, their needs should be examined in any consideration of intermodal and international transport.

An important step towards involving users is the introduction of a marketing function within the railways corporation. This will better equip the corporation to plan for future network development, whether it be expansion or contraction of facilities. This marketing function might best be introduced as part of railway management restructuring.

Prices and quality of service can be discussed with users and potential users. An effective way of doing this is to set up user panels to advise on business requirements for the railway network. Naturally, these requirements would need to be considered within the overall economic and social development which the government is realistically able to afford.

Regional coordination

Railways now have to compete with roads in providing linkages to and between economic centres within countries, regionally and internationally. Following independence, coordination between railways corporations on interlinked networks was good but has declined in many regions of Sub Saharan Africa, largely due to civil and social unrest. Increased competitiveness with roads and between railways corporations makes better coordination crucial for the survival of many railways. Clearly, interconnected railways must operate under similar policies and where possible, share common maintenance facilities. This means good coordination at intermodal transshipment points with regional customers, mainly landlocked countries, if railways are to retain their advantage for the efficient transport of freight over long distances.

4.3 Securing finance

Freight tariffs and passenger fares tend to be inadequate because they are often kept down for political and social reasons. As a result, railways are in a poor financial state. Many weaknesses can be traced to poor cash flow, inadequate investment finance and poor access

to foreign exchange. Capital investment loans from foreign sources and denominated in foreign currencies add to the railways' financial burden. It is imperative, therefore, that the finances of railways corporations are put on a firm footing.

The government must finance any non-financially self-sustaining services it wishes the railways to operate. The railways corporation must establish clear business objectives and acquire the financial and technical resources to meet those objectives. The corporation should then be free to operate independently, taking responsibility for managing its assets and for providing a commercially attractive service. Revenue would be generated from commercial charges or fares set by the corporation. Where governments oblige the corporation to operate public services that are not economic then the government should pay for any losses incurred.

If sufficient revenue is not forthcoming, even under the best management, then the size of the railway operation will need to be reduced. This may mean cutting back services, redundancies and closures of parts of the network.

Pricing

Consideration must be given to competition between rail and road transport, particularly the pricing strategy used for both modes. Under-pricing roads at the point of use will lead to a distorted demand, while unrealistic pricing of the railways may only further accelerate network decline. Competitive pricing of alternative modes needs to be carefully investigated to ensure that the railways are not at a permanent, albeit unrecognized, price disadvantage.

Before asking the railways to pay their own way, it is important to ensure that they are not being asked to pay too much in relation to other transport modes. Accounting practices, however, can distort the apparent financial returns. Railways corporations may have to meet stricter financial investment criteria than roads agencies, especially in terms of capital repayment and maintenance expenditure from internally generated revenues.

Subsidized passenger services

There is a demand for long-distance passenger services but the costs are often too high for full cost recovery from passengers. This calls for re-examination of services. However, discontinuing such services may not be socially acceptable and therefore governments or railways corporations may have to provide them. Whatever the source, subsidies should be targeted at particular groups and should not undermine commercial operations.

4.4 Restructuring institutions and involving the private sector

Railways corporations must be operated more commercially in order to meet customer needs. This could be achieved though private sector management of all or part of the railway operation. An appropriate means would be a management contract to operate rail services, or sourcing more of the support services from the private sector.

Adopt commercial attitudes

Railway restructuring is not simple and a good strategic plan and agreements for its implementation are complex. The regulatory framework provided by the

government needs to clarify the authority, responsibilities and freedoms in the relationship between the railways corporation and government. This process requires time, resources and a great deal of local involvement. A secure framework for railway development requires government involvement and approval at the highest level. Generally, this leads to a performance contract between the government and the railways corporation that clarifies the duties, freedoms and responsibilities of both parties.

The restructuring required is likely to involve a shift from functional to business responsibilities, including streamlining cumbersome procedures. A typical railways corporation is organized under technical headings such as operations, civil engineering, repairs and administration. A more market-focused organizational structure, however, might be based on business units, such as urban commuter services, bulk long distance freight and containers. Smaller railway systems are likely to remain within a single structure but will still need to become more responsive to customer needs, often through a more concentrated marketing effort.

Management information systems

Well-designed information systems are essential tools in strengthening planning, programming and operational procedures. More focus on customer services and greater internal operational efficiency demand appropriate information for informed decision making. Freight forwarding agencies and their customers need to be able to track goods delivery so that transshipment between modes is efficient. Similarly, railway operations staff need reliable information on the availability and location of locomotives and wagons so that rolling stock can be optimally matched to goods and passenger traffic. Management information systems give managers access to basic information about the railway network and its condition, and provide the means for preparing budget forecasts for annual investment and maintenance programmes. Their use extends to monitoring network conditions, and technical and financial auditing of the network. Equipped with these systems, a railways corporation can measure performance, improve its accountability to external scrutiny and is better placed to work within the private sector.

Staff and training

Railways struggle to recruit, train and keep operatives and staff of the right calibre, even though they are often grossly over-staffed at the lower skills level. The situation arises because most railways are hampered by the salary levels imposed on them, the industry's poor image, and the low personal achievement resulting from working in an under-performing industry. Thus any substantial effort to get the railways corporation to operate within its financial means and to introduce more commercial practices will involve making workers redundant and increasing the wages of those the organization wishes to attract or retain.

Remaining staff will need retraining and new staff will have to be appointed as the railways role changes, modern management methods are introduced, and new technologies created. Such training programmes have already been established for railways in Sub Saharan Africa, notably by the Southern African

Private sector takes over railways operations

A franchising agreement has given responsibility for operating the railways of Côte d'Ivoire and Burkina Faso to a private company. This public-private participation pioneers a reversal of the economic decline of the railways that started in the 1980s. This, coupled with decreasing rail traffic, management problems, and a worsening financial position, has led to deterioration and accelerated loss of rail traffic to road networks.

The two governments decided in 1992 to restructure their railways and to bring in the private sector to handle operations and maintenance. A private company, with mostly private share capital, has a franchise agreement to operate and maintain the railway for 15 years. Nevertheless, railway property, infrastructure and rolling stock are owned by two parastatal companies.

The franchise agreement awarded by competitive tender settled the crucial issues of investment, franchise fee and staffing levels. The franchisee has a fairly free hand in the allocation of invested capital. The franchise fee strikes a balance between providing an adequate income to the countries and yet being affordable by the franchisee. Commercialization has drastically cut staffing levels. As well as assisting redundant workers, donors are also financing a railway rehabilitation project. Donors include World Bank, Caisse Française de Développement, European Investment Bank, and the Belgian Administration for Development and Cooperation.

Early results are promising. Traffic is reaching the target of 9,000 tonnes per week and passenger traffic is increasing despite a 50% fare rise. Reviving the railways is a formidable task, but this enterprise may well shape the future of railways elsewhere in Africa.

Rail Business Report, 1996

Transport Communications Commission (SATCC).

Commercial management and private sector participation

Many railways corporations have yet to fully develop a commercial attitude to capture and retain their potential traffic share. This is not so surprising because the main managerial function has usually been to operate the railways. Introducing commercial management requires setting clear management objectives, adopting private sector accounting and auditing, and adapting to effective management information systems.

Moving to commercialization will require railways corporations to dispose of non-core activities, such as hotels, ferry services and ports, often placed under railway management in the past. This will enable available resources to be concentrated on the core railway service. Also, commercialization continues by taking more services into the private sector, for example, by means of a management contract or franchise agreement as in Burkina Faso and Côte d'Ivoire, where a private company is operating rail services with responsibility for maintaining rolling stock and infrastructure for a contract period of 15 years. Sourcing

of support services from the private sector can be increased for ballast supply, catering, repair and maintenance of track and rolling stock. Maintenance contracts for rolling stock are increasing with effective schemes operating in Kenya, Mali and Senegal. To contract out successfully, it is quite possible the railways corporation will need to be reinforced with skilled personnel, for example, in the adminstration and supervision of contracts, from outside the traditional railway industry.

4.5 Integrating the environment and society

Railway networks in most developing countries are declining, with rail closures now occurring more often than network expansions. Most investment in railways is on maintenance of the permanent way and rehabilitating and replacing rolling stock. Reductions in services and rail closures have led to substantial redundancies in railways corporations and reduced access to market and social services for the communities it serves. Consequently, the environmental impacts of many railway networks are limited. However, railway operation and maintenance can give rise to continuous environmental and sociocultural problems.

There is a range of potential environmental and sociocultural impacts. Rarely do all these impacts occur together but some will be found during operation and maintenance. Therefore, it is important to be aware of these potential impacts and their consequences.

Potential environmental impacts;
- increased traffic transferring from rail to other transport modes due to reduction in rail services and closures;
- on flora and fauna;
- air and noise pollution, particularly in urban and peri-urban areas.

Potential sociocultural impacts:
- needs of redundant staff, for example, financial compensation, retraining;
- impact on communities likely to lose their rail service;
- needs of the labour force engaged in maintenance in isolated areas, provision of food, and HIV/AIDS prevention measures.

However, improving railway services brings benefits to local populations. Production and business increase. Local people can sell goods at stations and can take trains to markets, hospitals and schools.

The railways corporation must also develop skills for creating appropriate environmental and sociocultural practices so that they can be incorporated in the working methods. To deal with the amelioration of environmental and sociocultural impacts, a monitoring mechanism needs to be used.

4.6 Improving regulations and operations

Railways in developing countries are typified by low availability of rolling stock (often less than 65% availability), low staff productivity (half to one-third of traffic movements per employee in more developed countries), and low system utilization (traffic units per kilo-



metre of track are approximately one-third that of developed countries).

Adapt to change

A railway should be principally concerned with bulk and container traffic. Although transport needs for a particular service might suggest that some locomotives should travel longer distances, it is often prudent to keep them on their national networks. This does not totally preclude leasing rolling stock to other corporations. However, to facilitate the movement of goods, there should be opportunity for wagons and those of customers to interchange with contiguous railways. Management systems should ensure the efficient use of wagons and that empty wagons are available, when required. This should include control of wagons awaiting action by customers and those on the lines of contiguous railways corporations.

More and more international trade is now carried in ISO shipping containers and a well-run railway should be able to win a high proportion of long distance container traffic to and from the ports. Therefore, most railways will have to reconsider how they can use labour-based methods for freight handling using covered box cars. Such wagons are intended primarily for break bulk and bagged cargoes that are not well suited to modern rail operations. These new operations require speedy turn-round and mechanical handling, especially for bulk cargoes. Railways will have to introduce such measures if they are to attract customers and shipping agents away from road haulage which is considered more reliable and secure.

Railways are overcoming these perceived shortcomings, by introducing more track and train control systems, more reliable locomotives and wagons, and building intermodal facilities such as inland and port container handling facilities. Moreover, shippers have been encouraged to return to railways with the introduction of point-to-point services of a complete train. Referred to as the block train, this concept eliminates marshalling delays and other changes on route, reduces documentation, and can provide regular, swift and reliable transport for large consignments.

Over-loading and accidents

The main causes of accidents are over-loading, high speeds and inadequate maintenance. High axle loads are not generally required in developing countries and a wagon carrying two containers would have a typical axle load of 15 to 18 tonnes, well within the normal operating limits of established railways. Generally, the track and supporting structures are of adequate standard to carry wagons at a reasonable speed. Therefore, any proposal to upgrade sections of the track, to raise axle load limits or to improve operating speeds needs to be reviewed thoroughly. Instead, railways corporations need to be more vigilant when loading wagons to ensure axle loads and loading gauges are respected and are not greater than those permitted on adjoining lines.

4.7 Steps towards sustainability

Set up contractual arrangements with government.

Establish the railway objectives and agree a strategy to attain them. Define

a clear contractual relationship between government and the railways corporation. Establish a policy framework for the relative pricing of rail with other modes.

Focus on customer services.
Organize the railways corporation into clearly defined business sectors and introduce a market and marketing-oriented approach. Involving users in the decision making process will help to direct investment to those areas most likely to be attractive for potential future business.

Operate competitively or downsize.
Secure sufficient funds from freight and passenger revenue to operate competitively. This may mean raising tariffs and fares, getting any essential subsidies, or reducing the scope of services. If sufficient revenue is not forthcoming, even under the best management, then the size of the railway operation will need downsizing.

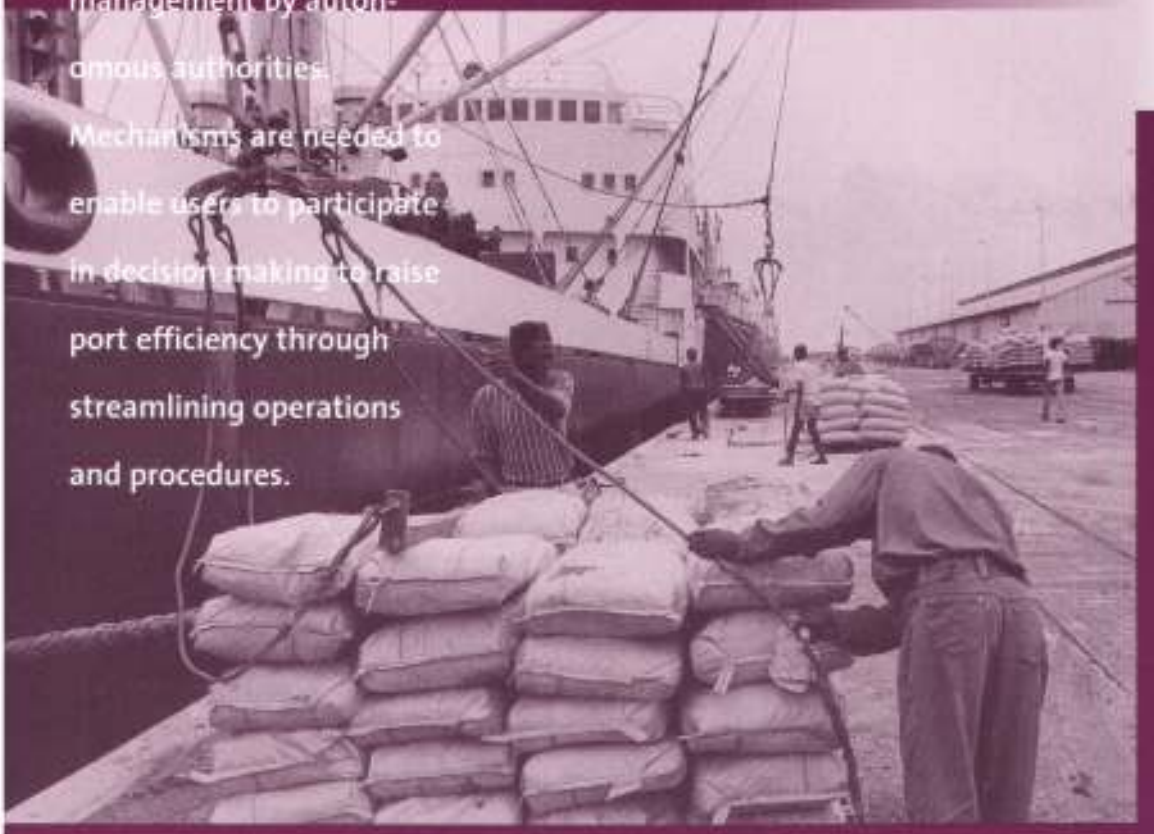
Adopt commercial management practices.
Dispose of non-core assets and activities. Restructure internally, gain responsibility for tariffs and fares, retain revenues, control costs, adjust the service to a sustainable size, and introduce attractive pay and conditions for remaining employees.

Contract out to the private sector.
Contract out supply of services – ballast supply, track and rolling stock maintenance and ticketing. Introduce contract management for operation of rail services as a whole.

Chapter 5

5

To attract trade and achieve financial viability, ports require sound commercial management by autonomous authorities. Mechanisms are needed to enable users to participate in decision making to raise port efficiency through streamlining operations and procedures.





Ports sector

Ports provide a vital link between sea and land transport, and in some countries with inland waterways. They are vital for the economies of island states and smaller countries which have no alternative access to international trade. Just about all imports and exports go through a country's ports and much of the traffic to the landlocked countries they also serve. Ports provide facilities for the transfer, storage, inspection and control of goods. Ports authorities have to interface with road and rail transport and a wide range of users. If port operations are inefficient, then the extra costs are reflected in the higher costs of imports and in more expensive and thus less competitive exports.

More so than roads and railways, ports have had to adapt to changes in goods transport worldwide. Cargo movements dominate traffic in most major ports with passenger traffic being more significant in smaller island ports. Developments in industrialized countries have led to changes in vessel design and cargo handling which were not foreseen when most ports in developing countries were designed and constructed. The most significant change has been containerization which has revolutionized cargo handling in maritime ports and led to the development of dry ports or inland container depots.

In the changing technological and economic environment, the management and operational practices of the past are no longer appropriate. Cumbersome practices are leading to increased costs with some ports loosing traffic to more competitive ports in neighbouring countries. Consequently, ports are having to adopt more commercial attitudes to vessel and cargo handling and to develop new commercial activities within the port areas and immediate vicinity.

5.1 Key Issues

Public sector dominance
Several government departments and parastatals are often involved, all grappling to control a complexity of operations carried out by government agencies and private operators in a relatively confined area. This leads to inefficiencies in port operations and increases costs to shipping lines, port users and their customers.

Outdated and cumbersome procedures
Regulations and procedures produce excessive customs control, inspection and documentation requirements, duplication of documentary procedures, and at times unnecessary security controls. These procedures lengthen the time vessels stay in ports and cargo clearance

through ports, thus resulting in higher costs and increased cargo damage and pilferage.

Rapidly changing technology
Fundamental to port operations is the whole range of changes from vessel design to greater containerization in the world transport system. At times, this means upgrading infrastructure but more often, major investment is required in new and more equipment, thus increasing the maintenance burden. Keeping pace with changing technology is a particular problem for smaller island ports and feeder ports.

5.2 Involving stakeholders

Port users have the greatest interest in increased efficiency of port operation and maintenance because ultimately this means reduced costs and time savings to them. Dialogue between ports authorities and users has, however, tended to focus mainly on labour relations with unions and with operators haggling over port tariffs. There is a need for mechanisms that create constructive dialogue and confidence, such as a port users council and user representation on port boards of directors. Involving users at different levels is likely to bring benefits to ports authorities, operators and users alike.

Regular dialogue with a representative cross-section of users will assist ports authorities and other government agencies, such as customs and excise, to adapt their management and administration to meet user needs. Representatives of port users may be drawn from shippers councils, shipowners and agent associations, major importers and exporters, freight forwarders, and land transport operators, or from their respective trade federations.

Regional coordination
Ports enjoy a somewhat monopolistic position because of their geographical location and their position at the beginning and end of the land transport chain. The scope for regional coordination is not as wide as for other transport modes. Coordination is likely to centre on regional implementation of international maritime and associated trade agreements, the harmonization of documentation where a port serves a number of countries, and the safety of coastal navigation. Few port services lend themselves to being carried out on a regional basis, with the possible exception of dredging. However, regular coordination between small feeder ports and major hub ports within a region could lead to more efficient operations and for the smaller ports, lower operational costs.

5.3 Securing finance

A distinction needs to be made between the ability of large and small ports to generate revenue. Generally, major ports earn significant amounts of revenue, much of it in foreign exchange. Therefore these ports have the potential to generate sufficient funds to finance their own operation and maintenance, and in the long term to repay capital costs. The situation is quite different for smaller and island ports with low trade flows. A minimum multi-purpose port is a basic requirement for islands and in some regions where land transport is not a feasible alternative. However, it is



costly to adapt existing infrastructure and to equip small ports to handle general cargo, containers, and passengers. Thus these ports struggle to recover their costs. In order to maximize their revenues, smaller ports must become highly efficient and cost-competitive. Every effort should be made to raise the revenue to cover operation and maintenance costs before government considers any subsidy.

Revenue sources

Ports raise revenue by charging for vessel servicing and facilities, cargo services and facilities, and by leasing land in the port area for associated commercial and industrial activities. Charges for vessel servicing include fees for pilotage, tugs, stevedoring, water and sundry supplies, whereas charges for vessel facilities cover aids to navigation, pilotage, mooring and general port dues. Cargo service charges include any lighterage between vessel and shore, and all shore handling charges which generally are a significant part of overall port revenue. Cargo facilities charges cover wharfage and storage costs. With increasing awareness of their large land assets and their move towards commercialization, various ports are now leasing land for free trade zones and free processing zones.

The profitability of some ports is due to their monopoly position and high tariffs rather than good management and efficient operations. In West Africa, for example, container loading charges can vary between ports by as much as 100%. Such disparities reveal a number of issues ranging from inflated stevedoring charges, high handling costs of empty containers, to the practice and requirement for outturn of most containers in the port area. Many other ports suffer from the same problems to a lesser or greater extent and there is pressure for change from ship owners and shipping lines. With inland transport systems from ports improving and better equipped ports, shippers have a wider choice of ports serving the cargo destinations. This means that the monopoly position of many ports is weakening, and port authorities are having to examine their costs and charges to remain competitive.

There is a wide range of port charges and setting the correct price for charges that attract different vessels and cargoes is a complex exercise. To attract goods and remain competitive, therefore, careful consideration needs to be given to establishing the charging mechanisms. This requires decisions on whether to fix charges in local and/or foreign currency, the frequency of adjustment, and the level of similar charges in neighbouring ports. Ports handle general cargo vessels, container vessels, ro-ro (roll on roll off) vessels and bulk carriers for commodities such as oil, cement and grain. Port charges, however, make up only a small proportion of ship operating costs and their overall contribution to port revenues may decrease in ports earning significant revenue from other commercial activities. Therefore, when setting port charges, a balance has to be made between their contribution to overall port review and their impact on operators' commercial decision making.

Subsidies

Subsidies should not be needed for large ports that are major revenue earners but may be required for smaller and island ports providing essential services. These ports often have difficulties in providing

the minimum facility for the low cargo volumes and yet earning sufficient revenue to pay for operation and maintenance. In such situations, governments should ensure that revenues are maximized in order to reduce operational deficits. Adopting good business practices in management will help. Where several ports are under the management of a national ports authority, cross-subsidization could be considered or smaller ports could be subsidized directly by government. Whatever their source, subsidies should be targeted at particular activities and should not undermine commercial operations.

5.4 Restructuring institutions and involving the private sector

Traditionally, the public sector has dominated port management and operations and as a result their financial viability has been compromised, and infrastructure and equipment have deteriorated. Most ports are responding to the changing needs of shipping services and port users by restructuring along commercial lines and bringing in the private sector for more service provision.

Most ports have a number of government agencies responsible for and involved in their operations. These range from central ministries and harbour authorities to parastatal lighterage companies, and freight forwarding companies as well as customs and immigration authorities. This multitude of agencies and organizations has hindered the efficiency of port operations. Some governments are retaining responsibility for policy, regulation and overall supervision and are creating ports authorities with varying degrees of autonomy.

Adopt commercial attitudes

Ports authorities need full autonomy if ports are to survive in an increasingly competitive environment. For a ports authority to function commercially, there has to be clear understanding with the government on the transfer of obligations with maritime and other organizations, the requirements regarding the raising of revenue and any dividend payable to the government on financial surpluses. With agreement on the overall framework, the ports authority must have the power to control charges and tariffs, labour levels and the contracting out of operations to the private sector. Such an autonomous ports authority requires board members with business and financial experience, who can effectively monitor management in achieving their objectives. Unless governments are willing to allow port management and operation to adopt these commercial objectives, ports will fail to attract trade, and thus miss the opportunity for financial viability and loose their ability to contribute to the economy.

Management information systems

With the increasing need to be more competitive in shipping and port operations, more ports are introducing computer-based management systems. These systems have many applications including improving the movement of a wide variety of cargoes to and from vessels into warehouses and onwards to the next transport mode. They are also proving invaluable in monitoring cargo, port charges and customs revenues. In some case, however, the introduction of management information systems is



resisted. One way of overcoming this resistance is to start by installing a simple system that proves useful and shows quick returns in time saving or documentation reduction. It is important that users gain confidence in the system's applications before additional links are made to other interested parties such as shipowners and freight forwarding agents.

Staff, labour and training

Ports tend to be large employers with substantial casual labour forces working almost on a permanent basis. Restructuring port management and operations will lead to redundancies and to the virtual disappearance of casual labour forces. One of the main reasons for this is that new equipment and higher productivity require few but better trained staff and skilled labour. Therefore, trade unions in both the public and private sectors need to be made aware of the need for effective management to ensure the security and enhanced pay of their remaining workers.

Commercial management and private sector participation

Ports offer considerable opportunities for commercial management and for services provided by the private sector. Within the public sector, every opportunity should be taken to introduce or continue commercial operating practices. As some ports become thriving operations, consideration should be given to the opportunity for privatization. Many approaches are possible, and there is no single recommended model. In Europe, there are successful ports in the public sector, for example Hamburg (Germany), and in the private sector, Southampton (United Kingdom). This diversity of approach is also reflected in the ports of developing countries. Ports in South Africa, for example, which are the most efficient in southern Africa, are in the public sector, although operated on commercial lines and subject to increasing competition.

Whether or not full privatization goes ahead, many services are moving towards private sector operation. These include inspection and verification of cargo, port security services, transport of personnel, maintenance of equipment, and dredging of channels and vessel berths. Two areas becoming particularly attractive to the private sector are container handling and management of inland container depots or dry ports.

Essentially freight terminals, dry ports lend themselves to private sector operation aimed at reducing transit time and congestion. Also, dry ports are justified generally by the need to collect enough goods of the same type to prepare for shipment to maritime ports, or to handle containerized traffic. Similarly, container handling operations within ports can be privatized and, if terms are carefully negotiated, can become profitable for both the private operator and the ports. With efficient support services, such as smooth customs procedures, these private sector operations can overcome some of the problems of port congestion and reduce costs to all users.

5.5 Integrating the environment and society

The environmental impact of port development and operations depends on the scale and nature of the port and vessel traffic. An increased number of vessels

Commercial approach leads to greater efficiency and profitability

Port restructuring was essential to Ghana's economic recovery programme. Port congestion was hindering the flow of cargo and increasing the transport costs of agriculture, forestry and mineral exports. A programme was instituted to increase cargo throughput and staff productivity, and to overhaul the financial operations.

The results are encouraging. Throughput of cargo increased from 633,000 tonnes in 1984 to 1,700,000 tonnes in 1992 at Takoradi Port and from 1,811,000 to 3,909,000 tonnes over the same period at Tema Port. Staff productivity has increased 50% at Takoradi and by almost 200% at Tema. Container handling has surpassed forecasts. On the financial side, after port charges have been revised, port revenues can cover the repayment instalments on loans, maintenance and still leave a small surplus. More improvements can be achieved when private sector participation increases.

European Commission Transport Sector Evaluation, March 1995

will aggravate marine pollution problems and changes in port operations lead to different employment structures. New construction beyond the existing port boundaries is likely to have greater environmental and social impacts. All the potential environmental and sociocultural impacts rarely occur together but some will be found in most ports. Therefore, it is important to be aware of these potential impacts and their consequences.

Potential negative environmental impacts:
- dumping and spillage from vessels and shore-based operations and their effects on seawater quality and marine activities, such as fishing in the vicinity of the port. These issues are dealt with in the International Convention for the Prevention of Pollution from Ships;
- consequences of excavating and transporting construction materials;
- impact on the surrounding environment of increased commercial activity within the port and near vicinity.

Potential negative sociocultural impacts:
- changes in port operations are likely to lead to job losses, particularly for unskilled stevedores;
- on health centres and other facilities, particularly the spread of HIV/AIDS resulting from an influx of migrant workers;
- problems of population displacement and resettlement resulting from expansion requiring additional land.

With forethought and more port user involvement it is possible:
- to secure longer term and better employment for local labour;
- to raise the skills of the labour force;
- to create more opportunities for women, particularly in management functions and operation.



5.6 Improving regulations and operations

To respond efficiently to rapidly changing technology, appropriate regulations and procedures, especially customs, will need to be introduced to secure a safe maritime and landside environment. These issues must be tackled to ensure port infrastructure and well-maintained equipment are adapted to vessel and cargo needs.

Customs

Customs practices and security checks are often the major impedement to efficient cargo and container handling. These procedures have not always been reviewed and upgraded with the introduction of more commercial practices. Consequently, attempts to rationalize, simplify and reduce documents have at times led to increased documentation and checks, as the new system has not fully replaced the old. Procedures consisting of more than 20 steps in five phases are not exceptional in many ports. As a result, the average time for a container in port is considerable. The amount of cargo examined and the documentation required is overwhelming and liaison needs improving between customs authorities, the ports and the users. An automated customs data system will help in integrating the various agencies. This is where ports could save substantial sums of money.

Keep pace with technology

There is a trend towards larger vessels operating scheduled liner services between major ports, with smaller intra-regional services operating regional and local feeder services. Within this system, hub ports require specialized handling equipment, especially for containers, to service these mainline services. Island and local ports need broadly similar equipment, albeit in smaller numbers, to handle their lower cargo volumes. The way in which port infrastructure is adapted and equipment provided is important to efficient and cost-effective operations.

The ability and need to adjust to technological changes varies to a large extent with port size. Major ports may have to invest in upgrading infrastructure and in replacing equipment in order to maintain their trade and competitive position. Sufficient revenue must, however, be generated to finance new investments while at the same time covering existing and future operation and maintenance costs. Smaller ports will have to focus on rehabilitating and upgrading facilities, which may need to be financed by government. Care must be taken to avoid a proliferation of different manufacturers' equipment thus increasing the range of workshop facilities and spare parts required, as well as the maintenance costs. For large and small ports alike, any further expansion should only occur if a clear trend in demand is established.

All ports have to accommodate larger vessels that need deeper approach channels and berths. This can be a costly operation, depending on sea bed conditions, soft or hard ground, and tidal patterns. These factors can add significantly to the extent of regular dredging. Investment in dredging equipment and operations is costly and therefore ports authorities should examine the alternatives offered by contracting out dredging, possibly on a regional basis.

Safety and aids to navigation

The risk of accidents in coastal waters and port approaches is increasing because of a shortage of operational aids to navigation, and the unreliability of many of the functioning navigational aids. This state of affairs underlines the crucial need for regular maintenance. Reliable aids to navigation have become even more important with changing vessel design, fewer crew and the increasing use of automated navigation systems on board ship. At times, this is also reflected in the insurance surcharges for ships operating in poorly controlled waters. While major maritime accidents and their environmental consequences have been rare or gone unreported, the risk of such disasters is increasing and public awareness of the consequences is growing.

Responsibility for providing and maintaining aids to navigation goes back to the first international maritime conference held in 1889. Subsequent conferences of the International Maritime Organization (IMO) have provided suitable specifications, maintenance and proposals for maintenance financing. Similarly, the International Association of Lighthouse Authorities (IALA) brings together lighthouse authorities to improve aids to navigation and maritime traffic management practices. Ports authorities need to live up to these international obligations.

Safety ashore deserves higher priority. Although containerization is leading to more mechanization, a substantial labour force is still employed. This labour is not always visible in a highly mechanized environment. The minimum safety requirements for all personnel moving around the port must be hard hats plus protective and high visibility clothing. Such minimum measures, however, are no substitute for a proper safety culture. This must be stimulated and fostered through safety awareness campaigns and training programmes for management, operators and the labour force, and supported by health facilities to deal with minor accidents.

5.7 Steps towards sustainability

Grant autonomy and commercialize. To survive and thrive in a competitive environment, ports must be managed and operated by autonomous authorities. This means setting clear objectives, controlling port charges and tariffs, as well as labour levels, and involving the private sector. In addition to raising revenue from vessel and cargo charges, port land assets can be leased for commercial and industrial use.

Contract out to the private sector. Cargo handling costs and time can only be reduced effectively by adopting more commercial management practices which must be based on regular dialogue with port users to understand their needs. The efficiency of many operations can be increased by contracting out to the private sector, specifically container handling and the operation of inland container depots or dry ports.

Improve port efficiency and safety. Cumbersome customs procedures which impede the efficiency of many ports must be reviewed and upgraded simultaneously with the introduction of more commercial management practices. The safety of maritime traffic must be secured through adequate and reliable aids to navigation.

Chapter 6

6

Airports require sound commercial management under an autonomous authority in order to survive in an increasingly competitive environment. There is ample scope for the private sector to participate in airport ownership and operation. Solutions have to be found for smaller airports providing essential services yet earning insufficient revenue to be self-supporting because of low traffic flows.





Airports sector

Airports are gateways for developing countries, providing direct access to the world business community. For the island countries, airports provide direct regional and international links that would otherwise not be as accessible. Moreover, in island countries tourism is often a principal economic sector, necessitating a reliable international and domestic air network. For landlocked countries, airports not only provide additional links to land transport but enable the development of high value exports. Hence, airports serve a diverse range of users and beneficiaries linked to trade, tourism and services. Therefore, it is important that airport infrastructure and facilities match these demands.

Most countries have a range of airports varying in size and capacity. Usually, there are one or more major gateway airports providing facilities for intercontinental, regional, international and domestic air services. In addition, there are regional airports for domestic services and some international services to neighbouring countries. Often there are various local airports mainly limited to third level domestic or feeder services using small aircraft. These smaller airports generally consist of a runway, a basic terminal building and essential aids to navigation. Some are simply unpaved airstrips equipped for daylight navigation only and have a social as well as an economic function in remote and isolated areas. Many countries thus have major investments in aviation equipment and facilities.

In general, airports focus more on the movement of people than of goods and thus provide more facilities for handling passengers than freight. Aircraft and ground facilities for both passengers and freight are constantly changing and becoming increasingly more sophisticated. This demands continuous updating of safety equipment to rigorous standards set by the International Civil Aviation Organization (ICAO).

6.1 Key issues

Oversized airport capacity
In the past, many airports in developing countries have been built or upgraded to satisfy a national 'gateway' image. Consequently, some airports are oversized for the present and foreseeable traffic flows, and are thus unable to generate sufficient revenue to cover operation and maintenance costs.

Public sector dominance
Airports and airlines have been managed and operated by the public sector, generally through a mixture of parastatal

organizations and government departments. Cumbersome operations and procedures, especially customs and immigration, have hampered the efficiency of many airports, thus restricting their functioning as commercial enterprises.

Frequent lapses in meeting international standards

While conformity with ICAO standards is mandatory, there are instances where navigational and associated equipment has not been maintained to these standards. In some cases, airlines have withdrawn or threaten to withdraw international air services. In other cases, terminal facilities, taxiways and aprons, and other supporting services and utilities have not been maintained to the required standard.

6.2 Involving stakeholders

Regular dialogue with users and beneficiaries is essential to ensure that airport facilities and operations meet their needs and an efficient service level is provided. Users are the international and domestic airlines and their passengers. Whereas, the beneficiaries are tourism operators and companies trading in high value goods and perishable goods, such as sea food, flowers, tropical fruits and vegetables. Where a significant part of the overall traffic is business passengers and freight, airport infrastructure and facilities can be reasonably easily matched to demand.

The situation is more complex where the principal airport demand and traffic is tourism. Most tourists want to fly directly to their final destination airport without transiting through a hub airport. While meeting this demand encourages tourism growth, this presents particular problems for smaller airports. Runways and other facilities have to be expanded in excess of the moderately high tourism growth rates in order to accommodate long haul, direct flights. In this situation, governments can be caught in the trap of providing oversized runways to develop tourism without being able to charge full economic rates to maintain them. It is, therefore, important to involve the principal beneficiaries in seeking solutions to these problems.

Regional coordination

Like the ports sector, regional coordination in the airports sector is not as wide as in other transport modes. Coordination is likely to focus on regional implementation of ICAO regulations, the maintenance of regional telecommunication networks for air transport and meteorological forecasts. However, regular coordination between smaller feeder and major hub airports within a region could lead to more efficient operations and for the smaller airports, lower operational costs.

6.3 Securing finance

A distinction needs to be made between the ability of large and small airports to generate revenue. Most large airports have the capacity to earn significant revenue, much of it in foreign exchange. They have the potential to generate sufficient funds to finance their own operation and maintenance, and in the long-term to repay capital costs. The situation is quite different, however, for smaller airports, and secondary and



tertiary level domestic facilities. Although these smaller airports can generally be run efficiently, they are unlikely to earn sufficient revenue to cover their operation and maintenance costs, particularly in the early years of operation. Small airstrips face even greater problems. While their operational costs are low, a minimum of maintenance is still needed. The size and equipping of smaller airports must, therefore, be minimized and ambitious demand forecasts carefully scrutinized if they are to have the chance of becoming financially sustainable without any subsidy. Similarly, governments must avoid major airports becoming an expression of national prestige with oversized facilities that severely drain revenue rather than earn it.

Revenue sources

Airports generate revenue from operational charges for aircraft landing and parking, passenger departures and air traffic control services. These charges can account for almost half the total revenue of major airports. If well managed, they can cover most of the operational and maintenance costs of services for handling aircraft, passengers and freight. However, some international airports and smaller national airports have to accommodate long haul or regional aircraft. Even the minimum infrastructure for such aircraft results in over-capacity and operational revenue does not cover operations and maintenance let alone equipment replacement. This is often the case where airports have a throughput of less than one million passengers per year. The situation is similar for small remote airstrips. If supplementary revenue cannot be generated from commercial activities, then the principal demand sector, which is often tourism, will have to bear some of the costs. This can be achieved through a special levy or by appropriate government subsidy.

Major and medium-sized airports can raise considerable revenue from commercial activities. Revenue can be generated from space rental and concessions for shops, car parks, hotels and conference centres. Many airports are moving towards greater commercialization and privatization by opening up the provision of services on a concessionary basis. The more franchisees are able to bid for space at an airport and airlines are able to use the airport to provide international and domestic air services, the more likely the government is to benefit from the most economic provision of aviation services.

Airport charges should be set at a regionally competitive level taking into account the airport location. However, these charges make up only a very small proportion of airline costs and consequently, have less influence on airline decision-making. Nevertheless, the airports authority needs greater flexibility in setting operational charges to enhance its position as a major hub airport and to increase its competitiveness with neighbouring country airports.

Subsidies

While major airports should not need subsidies, smaller airports may need to be subsidized under some circumstances. This is the case for airports that have difficulties in providing the minimum facility for low volume international traffic which does not earn sufficient revenue to pay for their operations and maintenance. In such situations, the

government should ensure that revenues are maximized in order to reduce operational costs. Adopting sound business management practices will help. Where there are several airports under the management of a national airports authority, consideration could be given to cross-subsidization. Whatever their source, any subsidies should be targeted at particular activities and should not undermine commercial operations.

6.4 Restructuring institutions and involving the private sector

The public sector has traditionally owned and operated domestic airports and national airlines. Airports have been managed by either the civil aviation department or a national government department with similar responsibilities. Airlines have generally been operated as state corporations. Other government agencies provide services, for example, customs and immigration, and private sector companies handle freight and passenger services. These tasks are made more difficult because most airports are located some distance from the city or town they serve. This calls for a high degree of self-sufficiency with secure utilities such as communications, power and water. Managing these operations and providing utilities within the constraints of the civil service have led to inefficient ground operations and the closure of many national airlines. Governments are now beginning to create autonomous airports authorities and to open up airline service provision to the private sector while retaining responsibility for policy, regulations and overall supervision.

Adopt commercial attitudes

Airports authorities need full autonomy if airports are to render efficient services and retain their competitiveness within a region. For the airports authority to function commercially, there has to be clear understanding with the government on the transfer of obligations with international organizations, and requirements on raising finance and dividends payable to government on financial surpluses earned. With agreement on the overall framework, the authority must have the power to control charges and tariffs, levels of labour, and contracting out of operations to the private sector. Such an autonomous authority requires board members with business and financial experience who can effectively monitor management in achieving their objectives. Unless governments are willing to allow airport management and operation to adopt these commercial objectives, airports will fail to attract traffic and miss the opportunity to become financially profitable.

While governments retain responsibility for regulation, a balance has to be achieved between regulation and liberalization. Access arrangements for airlines are often the result of bilateral or multilateral agreements between countries on sharing rights to land, collect and deliver passengers at or through third countries. National airlines often call for special treatment from their government on rights to specific routes or landing allocations and thereby restrict the access of other international and domestic airlines. Such practices should be discouraged as they run counter to commercial practice. Offering greater access to a wide range of international and domestic air services will generally deliver users and



the economy the highest level of airline services at the most economic cost.

Management information systems

Although dealing with a relatively small range of goods and aircraft movements, sound commercial management requires the support of an effective information system. These systems are proving invaluable for monitoring freight, airport charges and customs revenue. Sophisticated systems are possibly only necessary for the larger airports with high trade flows whereas smaller airports can manage with a more basic system. In introducing any system, it is necessary to start with a simple model to gain user confidence before widening the system for other interested parties, such as freight forwarders.

Staff, labour and training

Restructuring operations and management tends to lead to redundancies, but the impact will not be as severe in airports as in other transport modes. Airports have not employed as many people as ports and railway operations because developing countries have been quick to adopt advanced technology in handling aircraft, passengers and cargo. Restructuring, however, will not only demand training in new skills but also calls for highly skilled operators. Keeping pace with developments requires equipping a smaller work force, particularly the operational staff, with a wider range of skills to international standard. Trade unions in both the private and public sectors should be made aware of the need for effective management to ensure the security and enhanced pay of their remaining workers.

Commercial management and private sector participation

Airports worldwide are moving toward greater private sector participation in their ownership and operation. As airports become thriving operations, consideration should be given to the opportunity for privatization. There are examples in the developed world of successful airports in the public sector, such as Singapore, and in the private sector, such as London Heathrow. Many approaches are possible and no single model can be recommended for universal application.

Whether or not full privatization goes ahead, many services are moving towards the private sector, such as baggage handling, passenger handling, catering and aircraft maintenance. Additionally, the private sector could be attracted to operate specialized terminals or warehouses generally linked to specific traffic such as tourism or exports and requiring specialized storage and processing facilities at the airport.

6.5 Integrating the environment and society

The environmental impact of airport development and operations depends on the scale and nature of the airport and aircraft traffic. An increased number of aircraft will aggravate noise and air pollution problems and changes in airport operations will lead to different employment structures. New construction beyond existing airport boundaries is likely to have environmental and social impacts. All these potential impacts rarely occur together but some will be found in most airports. It is, therefore,

important to be aware of these potential impacts and their consequences.

Potential negative environmental impacts:
- increased air and noise pollution and fuel spillage;
- consequences of excavation and transport of construction materials;
- impact on the surrounding environment of increased commercial activity related to airport expansion.

Potential negative sociocultural impacts:
- problems of population displacement and resettlement resulting from development requiring additional land;
- impact of changes in airport operations leading to the loss of many jobs.

With forethought and more airport user involvement, there are potential positive gains:
- appropriate measures can be taken to attenuate noise pollution;
- longer term and better employment can be secured and skills can be raised;
- more opportunities can be created for women, particularly in management and maintenance functions and operations.

6.6 Improving regulations and operations

Technologically, air transport is probably one of the most advanced industries in a developing country. Keeping pace with these developments calls for appropriately efficient customs procedures, operational training and adherence to safety standards.

Customs and immigration

While solutions to delays in freight clearance are often sought in further investment in cargo handling and storage facilities, the main problem is very often cumbersome customs procedures at airports. Furthermore, out-of-date health and immigration requirements can take up significant amounts of space in passenger terminals. Unnecessary checking of passenger information can be irksome and off-putting especially when major investment is also going into tourism development. While understanding reasonable national security concerns, airport management and airlines should press for the constant improvement of customs, health and immigration services which affect their services.

Keep pace with technology

Keeping pace with technological advances poses several problems. It demands continuous training of employees to operate and maintain equipment to high international standards. Replacement of equipment, often acquired through aid or trade schemes, leads to a wide variety of suppliers and higher costs for stocking a wider range of spare parts and workshop facilities. Therefore, the way in which airport equipment is provided should be carefully examined in order to reduce the impact of these problems without compromising access to equipment that will reduce operational costs.

Safety

Adherence to airport operational and safety requirements, especially ICAO standards, is essential. Minimum safety requirements can be readily identified from international criteria. These standards cover the complete range of opera-

Airport capacity matches demand but being small faces financial problems

Attracting international tourists was seen as essential for the development of the tourism potential of Chobe National Park in Botswana. This called for expansion of Kasane airport to handle medium-size jet aircraft. An evaluation of the airport infrastructure and its capacity indicated that it was satisfactory in size and quality of service for its users.

Furthermore, commercial and service activities in the local economy have expanded and the population of the rural town of Kasane has doubled from 2,000 to 4,000 inhabitants. The number of tourist arrivals was higher than expected in the first year of operation, and commercial and service activities generated some revenue. However, the single commodity of tourism is unlikely to produce sufficient revenue for maintenance and replacement of airport equipment. The longer term prospects for the financial sustainability of the Kasane airport are uncertain, without some direct support from the tourist industry or the government.

European Commission Transport Sector Evaluation, March 1995

tions, both air and ground based. Air traffic control (ATC) must conform with international regulations laid down by ICAO, which range from secure communications with aircraft and surrounding airports to the ground-based systems. Other safety systems include a wide range of aids from meteorological services, airfield lighting, instrument and visual landing systems, to physical and radio approach beacons, and rescue and fire fighting services. Provision and maintenance of such systems is costly and pressure from airlines for more sophisticated equipment should be examined on the basis of the need and who will benefit. However, to avoid compromising safety, the regulatory control and safety enforcement must be separated from operational functions.

6.7 Steps towards sustainability

Match capacity to demand.
Airports have the potential to be profitable concerns when capacity is matched to demand. Resist the temptation to build airports which are oversized for present and future traffic flows. This presents a particular problem for smaller airports, where often even the minimum facility is oversized for the low traffic flows without the potential to generate sufficient revenue to cover operation and maintenance. Seek sustainable solutions in consultation with airport users and beneficiaries.

Make airports more commercial.
If airports are to survive in an increasingly competitive environment, then airport management and operation will need to be concentrated in a fully autonomous authority. This means setting clear objectives enabling airports authorities to control charges and tariffs, labour

levels and to contract out operations to the private sector. Major and medium-sized airports have the potential to raise considerable revenue from commercial activities in and around the airport.

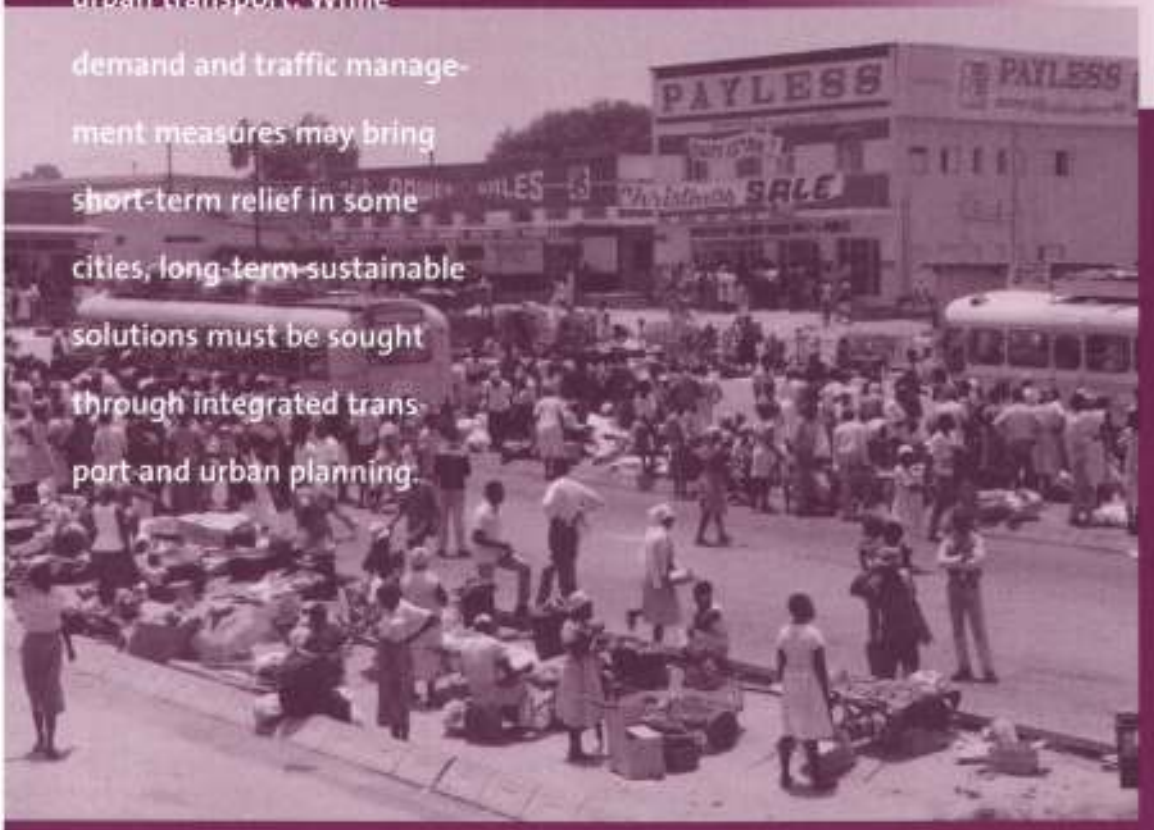
Contract out to private sector.
Most services can be contracted out, such as baggage handling and catering. As operations become more commercially feasible, contract out airport management and eventually privatize.

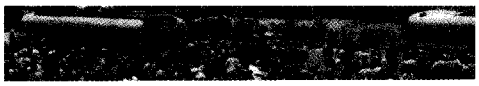
Adhere to safety standards.
Safety is of the utmost importance and adherence to ICAO standards is vital to the continued operation and prosperity of all airports. This implies continuous training of all staff and employees in operating and maintaining equipment to international standards. Furthermore, it entails reviewing and updating cumbersome operations and procedures in line with the demands of a high tech industry.

Chapter 7

7

Most cities do not have the resources to keep pace with the spiralling demand for urban transport. While demand and traffic management measures may bring short-term relief in some cities, long-term sustainable solutions must be sought through integrated transport and urban planning.





Urban transport

An efficient transport network for both passengers and goods is essential for the economic and social development of expanding cities which often generate more than half of a developing country's GDP. Thus, inefficiencies in the transport network contribute to higher costs and reduce the competitiveness of goods and services. However, the rapid growth of many cities, in some cases urban population increases at 5 to 10% per year, severely hampers the effective management and operation of transport networks.

A kaleidoscope of transport means and methods are employed in urban areas, ranging from motorized rail and road transport to bicycles and walking. In many cities, most motorized journeys are made by public transport, and where economic conditions continue to decline the poor will make increasingly more journeys on foot. Nevertheless, the demand for motorized transport is continuing to rise and both public and private sector providers are struggling to keep pace. Despite the introduction of minibuses, taxibuses, taxis and private cars in the private sector, efforts to meet this rising demand on low capacity infrastructure have only resulted in ever increasing congestion on already crowded roads.

Urban transport poses a major environmental hazard in many cities in developing countries. Even though traffic densities are low, levels of carbon dioxide and lead pollution are high. This state of affairs is directly attributable to increasing urban activity and traffic growth, coupled with poor enforcement of outdated or ineffective environmental regulations.

Urban transport is mostly managed by city councils and local government administrations along with many other functions and activities. Despite high expenditure on urban transport, often amounting to 15 to 25% of total expenditure, transport demand continues to outstrip the financial and organizational resources of city authorities. Greater attention thus has to be given to more commercial provision of public transport involving the private sector and non-motorized transport.

7.1 Key issues

Ever increasing demand

Urban population growth coupled with even modest economic growth fuels the demand for urban transport, putting excessive pressure on public transport facilities. Urban transport often fails to keep up with this demand.

A focus on motorized transport
Powerful lobbies sometimes lead governments to advocate expensive solutions such as urban motorways and mass transit systems. These solutions are not cost-effective in cities where most people are on low incomes. This is certainly the case in Sub Saharan Africa, for example, where transport is largely non-motorized with up to 80% of journeys made on foot or by bicycle.

Low cost-recovery
Urban transport infrastructure is expensive to operate and maintain. Yet fares are often kept low as a strategy to increase access for the poor. In some cases, however, this has even had an adverse effect. Low fares have constrained operators' revenues, leading to compromised maintenance and safety, and to reduced service quality and availability.

One of many services provided by urban authorities
Urban transport is just one of the many essential social and economic services provided by local governments and urban authorities. Other services include regulations and licensing for individuals and businesses, social services such as education, water, sanitation and refuse disposal services, and economic services such as markets, housing and transport. Consequently, transport cannot always be given the management and financing priorities it deserves.

Traffic congestion causing major pollution
The impact of urban transport is all too obvious – congested and noisy streets and soaring pollution levels. Car ownership is accelerating rapidly, even when economic growth rates are low, putting a strain on low capacity roads already inadequately maintained. Increasing traffic flows with poor vehicle maintenance and ineffective regulation enforcement are resulting in dramatic increases in noise and air pollution.

7.2 Involving stakeholders

The planning and distribution of urban land use greatly influences the movement of goods and people, and thus the demand for urban transport. Various types of urban land use can be distinguished – residential, industrial, commercial, recreational, educational and administrative. Spatial imbalances in the layout of these areas often call for a complex of transport infrastructure and services. For example, demand for transport outstrips supply in Lagos where more than half of Nigeria's added value in manufacturing occurs, 40% of Nigeria's skilled manpower is employed and some 80% of the country's imports pass through the city. Moreover, cities are far from self-sufficient, depending on food and raw materials from other areas. Goods and waste material produced by cities also have to be moved. Consequently, cities can only function efficiently when transport enables the movement of people and goods.

Link transport and land-use planning
One of the objectives of urban land-use planning must be to minimize travel for reasons of economy and to conserve the environment. However, all too often planning authorities are politically weak and regulations are circumvented. This can lead to inefficient land use linked by inappropriate transport infrastructure, causing problems for developers and

travellers alike. Urban and transport planners need to be brought together and dialogue opened with users. Participation should not be limited to the industrial and business sectors but must include private and public sectors providing social services such as education, health and waste disposal. It is essential to link and match land use and transport planning in order to provide an efficient transport system, and just as importantly, to reduce user costs.

Demand management a temporary solution

With insufficient resources to tackle congestion and the huge demand for urban transport, many planners have opted for demand management measures. Such measures include limiting parking in certain areas, introducing higher charges, and restricting private car circulation and access of goods vehicles in congested areas during peak periods. Many of these measures have limited success because of inadequate enforcement and because they are not accompanied by effective improvements to public transport. Demand management alone can only be a temporary solution. Policy issues dealing with increasing mobility and non-motorized travel will have to be addressed. To do this, city authorities need to enter into dialogue with users through mechanisms such as urban transport committees comprising transport operators, users and professional organizations, representatives of the business community and local community associations.

Non-motorized transport

City authorities will have to update transport policies in line with the fact that many urban journeys are made by non-motorized transport. Provision must be made for greater user involvement in planning suitable infrastructure and providing access to transport. Users are generally from the poor and lower socio-economic groupings who are not able to compete sufficiently with the strong motorist lobbies, and with public and private transport operators. Linkages can be made with these users through community centres, local area associations and non-government organizations. Much can be done at a relatively low cost to improve the safety and security of non-motorized transport, thus greatly improving the mobility of the poor.

7.3 Securing finance

Urban transport infrastructure is expensive to construct and because of the high utilization rates it is also costly to maintain. Similarly, the operating cost of public transport fleets is often much higher than revenue earnings, giving rise to a call for government subsidies. If the deterioration of urban transport is to be reversed, a secure source of adequate revenue for operation and maintenance must be found.

Revenue sources

City authorities raise revenue directly from transport infrastructure usage through parking charges, licensing and other charges. Revenue from public bus fares is generally managed by a parastatal corporation. Cities, of course, earn revenue from a wide range of other sources such as business licences, rental income, property and general taxation but there are many other demands on these revenues. Whatever the source, sufficient funds are not allocated for the

operation and maintenance of infrastructure for motorized and non-motorized transport in most cities. It is unlikely that city revenues and transport allocations will ever be sufficient to fully fund transport operation and maintenance.

If a more efficient transport system is to be provided, cost recovery from users must be increased. The principle should be that those who benefit should pay and those who benefit most should pay the most. However, setting prices at the correct level and devising simple collection systems are proving difficult in developed countries. Private and goods vehicles reap the highest benefits but are rarely charged the true cost of using urban roads. This encourages more road use thus adding to the congestion. The range of options is limited in developing countries. Measures such as special urban licences are complicated to enforce. Cities may, therefore, need access to the general revenue earned by the transport sector, particularly an equitable allocation from general road user charges. Such allocations are more straightforward where the government operates a road fund.

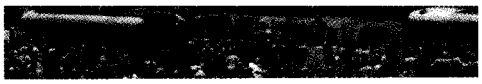
Setting fares

The main type of public transport, bus services, is declining because urban authorities are controlling fares. Fares have to be set at a level which allows operators to generate sufficient profit margins for proper maintenance and eventual equipment replacement. Keeping fares low is a misguided intention of helping the poor. In effect, it is a subsidy that also benefits the better off. One solution would be to introduce different categories of buses, each setting different fares. This would allow basic and low fare buses to continue if there is a demand and provide a better alternative for those prepared to pay more. Whatever solution is adopted, governments must recognize that public transport can only provide a worthwhile service if public and private sector operators are allowed to charge commercial rates.

7.4 Moving towards the private sector

Urban transport infrastructure and services are managed by local government and city authorities which often have fewer technical and managerial resources than other government agencies. Moreover, as city authorities concentrate their efforts on providing social services, transport is frequently underfunded and managed as a social service. However, city authorities must adopt a more commercial approach if urban transport is to operate efficiently. This implies greater participation of private sector operators in providing complementary operations and in improving services. Local government and city authorities need to focus on defining urban transport policy, regulating urban transport, and enabling greater private sector participation in transport operations.

The closures of the public bus corporation in Cameroon and of the Zambian Public Transport Corporation are indicative of the difficulties the public sector has in running commercial bus companies. Kenya has introduced private sector management of the Nairobi bus service, while in Harare the bus company has been kept in the public sector but operates along rigorous commercial lines.



As the gulf widens between demand for urban transport and public sector capacity to meet it, traditional public sector domination is gradually giving way to more private sector participation. Private operators are being encouraged to take over all or parts of the public transport networks and to operate different sizes of buses and minibuses to meet the different demands. Moreover, operators are being allowed greater freedom to decide service frequencies and quality at prices affordable to the travelling public. A more open attitude and competition between public owned companies and private sector buses and taxis calls for equitable regulations on access to routes and operational standards, particularly for drivers, vehicle maintenance and safety.

Other organizations have a role to play including non-government organizations, local community associations and AGETIP organizations (Agence d'Exécution des Travaux d'Infrastructures Publiques). Non-motorized transport gives greater opportunity for involving these organizations in operating simple footpath networks and cycle tracks, particularly when separated from the urban road network.

7.5 Integrating the environment and society

Despite the lower levels of vehicle ownership in some major cities of the developing countries, air pollution levels exceed those in developed countries cities. Although not the only source, urban traffic is the major polluter accounting for up to 90% of carbon monoxide and lead emissions, two-thirds of the nitrous and hydrocarbon oxides, and most of the particulate material in the air. This is a major health hazard and air pollution is a direct cause of death in major cities. Absorption of pollutants such as lead will cause longer term health problems. Although environmental standards and regulations are being updated, the record for enforcement of similar regulations is not encouraging.

Pollution caused by urban transport can be tackled by reducing vehicle emissions, congestion and vehicle journeys. Steady progress is being made in reducing vehicle emissions by improving engine design, and introducing catalytic converters and lead-free petrol. These direct measures must be supported by good vehicle maintenance and a willingness of governments to set and enforce minimum standards. Measures to reduce congestion and vehicle journeys must start with integrating transport planning into urban development, and land-use planning. Many urban authorities will have to continue dealing with congestion and high pollution levels. An awareness of the environmental consequences of urban transport must be built into urban policy so that both motorized and non-motorized transport modes are optimally used in reducing pollution.

Building gender awareness criteria into urban transport policies will increase the access of both men and women to jobs and social services. Public transport offers women in particular mobility and access to more employment opportunities in the service and manufacturing sectors. Very often, access to education, health and other social services depends on the availability of public transport. However, urban transport is mostly geared to commuting in peak hours leaving the non-

peak periods with either a poor service or none at all, thus restricting mobility. Attention must be given to public transport services during off-peak periods and especially at night. Similarly, a footway network has to be designed to assure safety by day and at night.

7.6 Tackling congestion and safety

Much city transport infrastructure has not kept pace with the steadily rising rate of vehicle ownership and increasing traffic densities. While in some cities it may be possible to widen and build more roads, in others it is a matter of getting the existing infrastructure to carry more traffic. The capacity can be increased by a number of simple measures such as one-way streets, additional traffic control lights and synchronization of their operation. As traffic increases, police are called upon to assist in peak hours and dedicated bus and cycle lanes are created. All these relatively inexpensive solutions, however, have a limited effect if roads are not maintained adequately.

Understandably, most road accidents occur in urban areas and pedestrians and cyclists are the most vulnerable. Accidents can be reduced at relatively low costs, starting with the separation of vehicles and pedestrians. Where this is not possible, footpaths should be well maintained so that pedestrians are not forced onto the road. More physical barriers can be constructed at junctions and control systems, such as traffic lights, operated to reduce conflict between vehicles and other road users.

Vehicle maintenance standards and driving behaviour are significant causes of accidents. The first step towards accident reduction must be to update regulations to reflect the vehicles in use and uniform enforcement of regulations. Driver training and standards need upgrading and pedestrians need to become more aware of potential accident situations. This can be achieved by demanding higher standards of driving schools, public safety campaigns and safety education in schools. Enforcement of traffic regulation is essential. Many developing countries have introduced seat belt regulations but have not as yet tackled the serious problem of 'drinking and driving'. Improvements in all areas will not only reduce accidents but will also produce savings, thereby lowering the economic cost of accidents which amount to 1% of GDP.

7.7 Steps towards sustainability

Integrate transport into land-use planning.
Measures such as traffic management schemes, upgrading local capacity and demand management are essential but can only be short-term solutions to the urban transport crisis. Physical constraints in some cities may leave little choice but to relocate certain public services and commerce to other towns. Long-term transport solutions depend on integrating transport into urban planning.

Make better provision for non-motorized transport.
Update urban transport policies to take account of the fact that most journeys are made by non-motorized transport, especially in Sub Saharan Africa. To



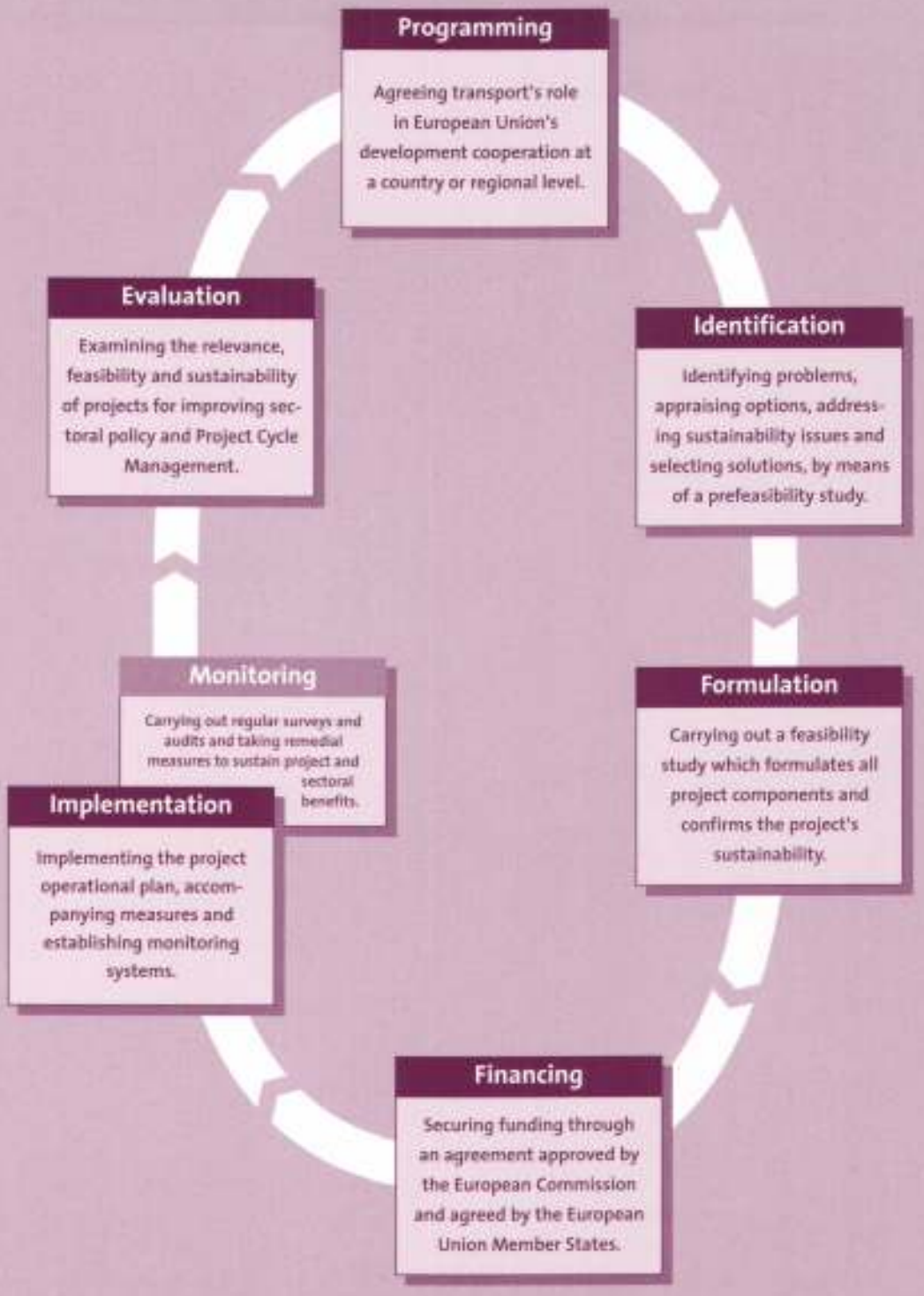
make transport provision more effective, urban authorities will need to consult these users through local community centres, local area associations and non-government organizations.

Move more transport services to the private sector.
Public and private sector operators will need to work together with more services being provided by the private sector. City authorities are better qualified to ensure equitable competition between operators, service regulations and enforcement of standards. Public transport run by city authorities must operate on commercial lines.

Tackle pollution and road safety.
The alarming increase in pollution in many expanding urban areas is directly attributable to the rapid increase in traffic. Effective measures must be found to reduce vehicle emissions, traffic congestion and vehicle journeys. However, if sustainable improvements are to be achieved, these measures must be supported by effective enforcement mechanisms. Measures must be introduced to reduce the ever increasing number of accidents in congested urban areas.

Part II

Applying a sectoral approach to Project Cycle Management



The six phases of the project cycle

Guide to Project Cycle Management in the transport sector

Part II – Applying a sectoral approach to Project Cycle Management – follows the six phases of the project cycle (see page 80). For each phase, the process is summarized and the demand for transport infrastructure and sustainability issues are tackled in a series of key questions. For each question, the possible problems and the potential actions are proposed. The list of questions are the starting point and aim to trigger further questions which will bring to light the underlying causes of problems.

Throughout each phase, demand and sustainability issues are arranged under headings that reflect the essentials of a sectoral approach addressed in Part I – Building a sectoral approach:

- policy and coordination
- demand and economic sustainability
- financial sustainability
- institutional and management sustainability
- environmental and sociocultural sustainability
- regulatory and operational sustainability.

A wider appreciation of the project cycle can be gained from the European Commission manual on Project Cycle Management: integrated approach and logical framework.

As intermodal solutions are an essential part of a sectoral approach, the sector is considered as a whole when using Project Cycle Management. Each transport mode, however, has different requirements in the project identification and formulation phases. Separate sections have thus been prepared for roads, railways, ports and airports in these two phases.

At the end of each section, an Action Report Form is included to be used to record the problems encountered, the actions taken to address them and the assumptions on which these are based.

The European Commission often receives requests to finance projects identified and formulated by other agencies. Such projects should be examined using these guidelines. This means testing a prefeasibility report against the programming and identification phases. Similarly, a feasibility report is tested against programming, identification and formulation phases.

The rigorous application of a sectoral approach to Project Cycle Management will contribute to identifying and formulating appropriate projects that are sustainable when implemented.

Chapter 8



Programming involves agreeing transport's role in European Union's development cooperation at a country or regional level.

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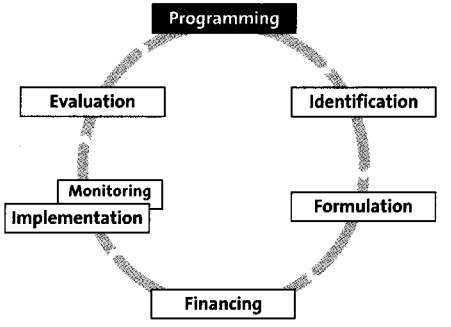
Programming

Purpose
Agreeing transport's role in European Union development cooperation at a country or regional level.

Means
Dialogue with administration, and workshop prior to programming mission.

Inputs
- Transport Infrastructure Sectoral Note – Lomé IV – Programming of the Second Financial Protocol – April 1995
- Economic and social needs assessment of national and regional development priorities.
- Demands for transport from the major economic and social sectors.
- Financial, institutional and regulatory frameworks of the transport system.
- The present condition of all transport modes.
- Results of activities and lessons of recent evaluations.

Results
- Transport sections in the National/ Regional Indicative Programme consistent with national and regional development plans, economic and social priorities.
- Initial objectives of the transport response to economic and social demands.
- Actions to address issues in developing a sustainable sectoral policy.



Use the guidelines to address the main issues in agreeing transport's role in European Union development cooperation. Record the problems encountered, the actions taken and the assumptions made on the Action Report Form.



Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
What is the national transport policy?	• The transport policy is not up-to-date and there is little or no coherence between transport sectors/modes. • The country does not have a clearly established transport policy.	• Do not invest in the transport sector before this issue has been addressed. • Support the country in analysing current economic and social priorities, and in updating its transport policy.
What priority does the government give to maintenance of the transport infrastructure?	• Maintenance is not considered a key priority, even though the transport network is deteriorating. • Although maintenance is a key priority, the government does not have the required financial and/or institutional resources.	• Do not invest in the transport sector before this issue has been addressed. • Support the government in making maintenance a priority. • Support the government in identifying sources of additional finance, and in investigating ways of restructuring institutions.
How could transport be improved efficiently by better connection between modes?	• No attention has been given to the potential for intermodal transport. • Limited means to interconnect transport modes can lead to higher transport costs. • Limited interconnection between transport modes can lead to higher investment than necessary in separate modes.	• Include actions in the NIP/RIP to examine the potential for intermodal transport. • Undertake a study into the potential for intermodal transport to improve planning at national policy level.
How do the policies and practices of neighbouring countries affect the country's transport objectives?	• The country's transport objectives and/or modal priorities contradict those of neighbouring countries. • International or regional transit agreements are little respected.	• Support regional discussions to investigate ways of achieving a consensus and enhancing coordination of regional policy. • Support regional cooperation initiatives.
What are other donors doing in the transport sector?	• There is little or no coherence in donor approaches to provide development assistance.	• Develop regular discussions with donors involving the government concerned.

Key questions	Possible problems	Potential actions
DEMAND AND ECONOMIC SUSTAINABILITY		
What are the specific transport demands of the economic and social sectors?	• Existing links between the economic and/or social sectors and the transport network are under-sized, significantly deteriorated, and/or do not adequately serve the internal market.	• In the NIP/RIP, set out the transport infrastructure needs to support development of the economic and social sectors affected.
How far has structural adjustment progressed in those economic and/or social sectors for which transport support is proposed?	• Substantial changes are likely to occur which make planning difficult and/or investment redundant. • Transport investment needs to be timed and linked with changes in economic and/or social sectors resulting from structural adjustment.	• Ensure that the prerequisites for structural adjustment are specified in the NIP/RIP.
FINANCIAL SUSTAINABILITY		
How has future financing for development of transport infrastructure been addressed?	• Development financing is not a key component of transport policy. • The financial and institutional implications have not been clearly identified.	• Undertake discussions with the government to highlight ways of securing adequate funds. • Support an assessment of the financial and institutional changes needed.
What is the country's budget for transport operation and maintenance?	• The country cannot fund existing or future recurrent costs, but urgently requires investment to sustain the existing transport system.	• Assist the government in identifying additional sources of revenue, possibly through a separate study.
How has the maintenance of previous transport projects been funded?	• The government has not undertaken the required maintenance. • Absence of donor coordination has hampered the government's funding plans.	• Propose measures in the NIP/RIP to improve future financial performance and government commitment to meeting targets. • Promote donor coordination through regular multi-donor meetings with the government.



Key questions	Possible problems	Potential actions
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What is the level of government intervention in the transport sector?	• Heavy regulation of the transport sector precludes the introduction of cost-efficiencies through commercial management.	• Identify options in the NIP/RIP which enhance commercialization of infrastructure management and reduce governmental intervention.
What is the overall structure of the national administration responsible for transport infrastructure?	• Too many institutions are involved. • National administrations are over-staffed and under-funded, and are not delivering an effective transport system.	• Undertake an institutional study on ways of improving infrastructure management.
How are users of the transport system involved in its planning and management?	• There are no mechanisms allowing users to participate in investment decisions concerning transport infrastructure. • Mechanisms are not used or are largely ineffectual.	• Undertake an institutional study on ways of improving user involvement. • Support measures to reactivate under-used mechanisms.
What is the scope for local private sector involvement in the management and operation of transport infrastructure?	• There is scope for local private sector involvement, but the government is not ready to devolve its responsibilities. • Although there is scope, local private firms do not have the technical and financial resources to undertake the available works.	• Include measures in the NIP/RIP on the need to involve local private firms. • Support measures to improve private sector involvement, such as training and structuring contracts to provide sufficient working capital.
What are the government disbursement mechanisms for the transport sector?	• The administration has barely enough funds to pay its own staff and defaults on payments to contractors. • Procedures and authorizations are slow and cumbersome.	• Include actions in the NIP/RIP to improve disbursement management systems. • Undertake an institutional study on ways of improving disbursement management.

Key questions	Possible problems	Potential actions
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
How are environmental and sociocultural policies integrated into transport policy?	• Transport policy does not cover these issues. • Although covered in transport policy, little follow-up occurs.	• Assist government to update transport policy. • Assist government to prepare a strategic plan for integrating these issues into transport investments.
What are the potential environmental and sociocultural impacts of transport investments?	• The impacts are ignored or have not been assessed. • The impacts are known but no action have been taken to ameliorate them.	• Specify studies in the NIP/RIP to identify the impact on the sectors affected. • Refer to the European Commission manuals on Environmental Impact Assessment, on Women in Development, and on Employment to identify appropriate actions in the NIP/RIP.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
What is the enforcement level for regulations in the transport sector?	• Regulations are not respected and are rarely enforced. • Safety standards are low and there are frequent accidents.	• Undertake a study into the enforcement problems in the sectors affected. • Include actions in the NIP/RIP to achieve effective enforcement.



Action Report Form: Programming

During discussions with the recipient country, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:

Chapter 9



Identification involves identifying problems, appraising options, addressing sustainability issues and selecting solutions that respond to economic and social demands, by means of a prefeasibility study.

9

Identification

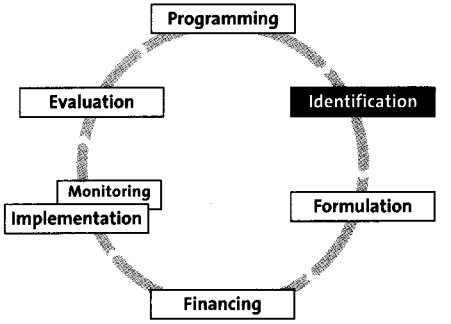
Purpose
Identifiying sustainable transport projects responding to economic and social demands.

Means
A prefeasibility study identifying the problems, appraising alternative options and selecting a solution based on preliminary technical designs, economic and financial, environmental and sociocultural studies.

Inputs
- National Indicative Programme and Regional Indicative Programme (NIP/RIP).
- National transport sector policy.
- Reports of recent studies, evaluations and other relevant documents.
- Terms of Reference for a prefeasibility study.

Results
Prefeasibility report identifying projects consistent with the macro-economic environment, development objectives in the NIP/RIP, and transport sectoral policy and economic and social demands.

There are separate sections for roads, railways, ports and airports as each sector has different requirements.



Use the guidelines to address the main issues in identifying sustainable transport projects responding to economic and social demands. Record the problems encountered, the actions taken and the assumptions made on the Action Report Form.



Identification of road projects

Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
What is the national transport plan, and what is the roads component?	• The country does not have a transport plan. • The national transport plan has not been updated recently and/or is unrealistic. • The roads component is beyond the country's maintenance capacity, even with probable contributions from donors.	• Initiate steps to assist the government in developing a clear transport plan, particularly a roads component. • Analyse the country's current transport network and assist the government in updating its transport plan. • Identify the priority network of roads and feeder roads within the country's maintenance capacity.
What are the strategic plans for the roads sector?	• The strategic plans require significant updating. • No strategic plans have been drawn up for the roads sector.	• Commission a study to assist the government in drawing up or updating a strategic plan.
What priority does the government give to road network maintenance?	• Network maintenance is not considered a priority. • Although recognized as a key issue for the sustainability of the road network, maintenance is handled inefficiently.	• Assess the reasons and identify the action the government should take. • In the prefeasibility study, identify the need for a network maintenance plan and include all essential road maintenance measures.
What elements in the transport chain have been considered when identifying transport requirements?	• The proposed route is not part of the country's strategic transport infrastructure network. • Not all physical and non-physical bottlenecks have been considered.	• Determine whether the strategic transport infrastructure network should be updated to include the proposed route. If not, the prefeasibility study should be abandoned. • Assist the government in establishing a strategic transport infrastructure network. Prioritize the trunk, rural and feeder links which need to be maintained and/or rehabilitated. • Ensure that non-physical investment is considered in the prefeasibility study.

Key questions	Possible problems	Potential actions
To what extent does the country rely on the ports and shipping infrastructure of neighbouring countries?	• The country depends heavily on one transport corridor from a neighbouring country's port. • The transport systems of neighbouring countries are performing poorly, to the detriment of stable trade flows.	• In the prefeasibility study, apply a regional approach to the transport corridor as a whole. • Pay particular attention to bottlenecks in the transport corridor before developing a sectoral approach for the landlocked country.
What are the potential linkages with other transport modes?	• Improvements to proposed routes depend heavily on rehabilitation or construction of the infrastructure in one or more complementary modes.	• In the prefeasibility study, identify the elements required to ensure success, including investment in other modes of transport and intermodal facilities.
What are the effects of neighbouring countries' transport strategies on the roads sector?	• Transport strategies of neighbouring countries are not supportive. For example, ports are over-regulated and transit agreements are not adhered to.	• Discuss the issue in regional meetings with the countries concerned. • In the prefeasibility study, establish the impact of these strategies and identify actions which can be taken to reduce their effects. • If necessary, postpone the prefeasibility study until relevant issues have been addressed.
What problems are encountered with customs and immigration procedures on the borders?	• Procedures at borders are bureaucratic and time-consuming. • Demands are made for illegal payments. • International and regional transit documentation is not used or respected.	• Identify ways to standardize procedures and paperwork with the governments concerned. • In the prefeasibility study, assess whether transit agreements are being respected and whether there is a need to invest in improving border crossings and customs posts.
How does the proposed investment fit in with current and planned projects by the European Commission and other donors?	• The proposed activities are inconsistent with, or partly duplicate, investment by the European Commission and other donors.	• Discuss the potential investment with the donors concerned, and establish a process for maintaining dialogue in subsequent project phases. • If necessary, consider parallel financing with several donors, or handing over responsibility to other donors.



Key questions	Possible problems	Potential actions
DEMAND AND ECONOMIC SUSTAINABILITY		
What are the transport-related needs of the various economic and social sectors?	• Transport infrastructure solutions are identified without taking into account the real transport problems of the key demand sectors. • Potential users and beneficiaries are not consulted about their needs.	• The prefeasibility study must review the root causes of transport problems and include consultation with potential users and beneficiaries to identify their needs.
What is the demand for the road infrastructure?	• There is not sufficient demand to justify investment in the roads sector, particularly in the short term.	• Assess the reasons, and if required, abandon or postpone the prefeasibility study.
What alternative project solutions have been identified and/or assessed?	• No alternatives have been considered. • Only a limited range of technical alternatives has been considered, based mainly on engineering options. • Institutional and management changes have not been considered.	• In the prefeasibility study, identify alternative solutions in other transport modes, on an intermodal basis, or by other means, such as institutional or management reform.
What is the economic and financial feasibility of the alternative project solutions?	• Analyses have been done but are based on inadequate information. • Insufficient sensitivity tests have been done to prove feasibility.	• Commission a baseline study to improve information quality and collection. • In the prefeasibility study, broaden the extent of economic and financial analysis. • Refer to the European Commission manual on Financial and Economic Appraisal.
What has been done to monitor the economic sustainability of the roads sector?	• No baseline studies have been undertaken to collect this information. • It is difficult to specify adequate indicators to measure the economic sustainability of potential projects.	• Commission a baseline study and determine the information to be collected. • Specify quantifiable indicators to measure the success of proposed projects in the economic appraisal.

Key questions	Possible problems	Potential actions
FINANCIAL SUSTAINABILITY		
Does the government have the funds required to provide the necessary maintenance capacity?	• The government has insufficient funds to maintain the existing infrastructures, let alone new investment.	• Identify other sources of funds such as increasing fuel taxes and other levies. • The prefeasibility study should be postponed until this is addressed.
How much revenue does the government raise from user charges?	• Revenue raised from user charges is not sufficient to finance investment in and maintenance of the transport infrastructure. • Revenue would be sufficient, but funds are not wholly directed to infrastructure funding.	• Support studies to develop and assess options to remedy the problem. Identify actions the government must take to secure funding. Sources of funds include passenger fares, freight rates, fuel taxes and levies, vehicle licence fees and international transit permits. • Avoid new construction until the government has properly allocated funds for existing road maintenance requirements.
How are dedicated taxes and levies channelled to the road fund?	• There are some funding systems but they are not managed efficiently. • No clear systems have been established.	• Assess the shortcomings of existing systems and develop ways to improve them. • Consider the feasibility of introducing such systems and if needed, commission a separate study.
What is the cash flow needed for the alternative project solutions?	• The cash flow needs have not been clearly identified. • Although sufficient funds are available, there is a projected shortfall during those phases requiring heavy expenditure.	• Ensure that funds are available to meet costs as they arise, or modify/abandon the project. • In the prefeasibility study identify any shortfalls.



Key questions	Possible problems	Potential actions
What has been done to monitor the financial sustainability of the roads sector?	• As baseline studies have not been undertaken, it is difficult to measure the financial sustainability of the roads sector. • Baseline studies do not cover all relevant issues.	• Commission a baseline study and determine the information to be collected. • Specify adequate indicators, and carry out sensitivity tests on how the roads sector would react to modification of key parameters.
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What is the institutional structure of transport administration, and how efficient is it?	• Insufficient information is available to make an informed judgement. • The functions and responsibilities of the transport administrations are not clearly defined. There are overlaps between ministries. • The transport administration is over-staffed and under-funded.	• Commission an institutional review. • Advise the government on steps to clarify the role and functions of the transport administration.
What is the institutional framework of the autonomous roads agency?	• Such an agency has not been established. • The institutional structure of the roads agency does not lead to an efficient organization. • The roads agency is subject to excessive political control.	• Identify deficiencies and address them through institutional restructuring. • If necessary, commission a study to analyse the feasibility of establishing such an agency.
What are the institutional provisions for road maintenance?	• Provisions for road maintenance are not clearly established. • There are overlapping responsibilities between government ministries.	• Establish a network maintenance plan within an appropriate institutional framework as part of the prefeasibility study.
What management information systems are in place to identify maintenance requirements and to monitor performance?	• There are no management information systems and existing processes are not clearly established. • Management information systems are not being used efficiently.	• In the prefeasibility study, assess the shortcomings of the existing situation and identify improvement measures together with costs. These might include training programmes and restructuring of reporting lines.

Key questions	Possible problems	Potential actions
What policies and practices are used to motivate personnel (such as salary, promotion, training)?	• There is no policy to motivate personnel. • Policies have not achieved the expected result, and skilled staff are leaving for the private sector.	• In the prefeasibility study, investigate ways of introducing such policies with effective practices. • Assess why existing policies have failed and determine ways to improve matters.
How are users and operators involved in identifying the strategic transport network and its future development?	• There is little or no consultation with road users and operators.	• Seek ways to involve users and operators in the process, for example, through advisory committees, workshops, discussion groups and road boards.
What has been done to commercialize operation and management of the road network?	• Commercialization is very limited. • No commercialization has been implemented.	• Investigate the potential for commercialization. in the prefeasibility study or a separate study. • Carry out an institutional review to determine how commercialization could be introduced, for example, revenue collection, contracting out of design or maintenance services, introduction of performance indicators in public sector organizations.
To what extent is expenditure audited, financially and technically?	• Auditing is limited to donor-financed projects. • Government expenditure is insufficiently audited. • No technical auditing is carried out relating to the appropriateness or quality of the work.	• Assist agencies to establish or improve external auditing practices in all expenditure, preferably by involving the private sector. • Introduce/set up independent technical inspections.
How technically and financially able is the private sector to be involved in developing the roads sector?	• The local private sector has the capacity to be involved, but government disbursement mechanisms are too slow and cumbersome. • The local private sector has neither the technical nor the financial capacity to become involved.	• Propose changes to disbursement mechanisms to meet the needs of local private sector enterprises. • Support the development of training to enhance private sector capabilities.



Key questions	Possible problems	Potential actions
What is the scope for private sector involvement (for example, consultancy, maintenance and rehabilitation work)?	• The scope for private sector involvement has not been clearly identified. • Although there is scope for private sector involvement, the government does not want to devolve its responsibilities.	• In the prefeasibility study, identify specific areas for private sector involvement and develop appropriate measures to introduce the private sector. • Discuss with the government and support critical steps in implementation.
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
What is the government policy on pollution?	• The government has no policies dealing with pollution. • Efforts to enforce regulations are ineffective.	• Investigate measures to mitigate pollution in the prefeasibility study. • Assist the government in developing an effective and enforceable policy.
What are the potential environmental and sociocultural impacts of the alternative project solutions?	• No baseline studies have been undertaken to collect this information. • It is difficult to specify adequate indicators to measure environmental and sociocultural impacts.	• Commission a baseline study and determine the information to be collected. Refer to the European Commission manual on Environmental Impact Assessment. • Specify quantifiable indicators in the prefeasibility study or in a separate environmental and sociocultural appraisal.
What changes in land use have been considered, and what are the potential impacts on community life and the natural environment of the alternative project solutions?	• Attempts to examine the implication of land-use changes have been ineffective. • There is no land-use planning. • Land has to be acquired. • People have to be resettled.	• Examine the likely impacts in the prefeasibility study. • Assist the government in developing appropriate land-use policies. • In the prefeasibility study, include cost estimates for land acquisition and resettlement.

Key questions	Possible problems	Potential actions
What cross-cutting issues (employment, gender, etc) have been considered in the alternative project solutions?	• Little or no attention has been paid to these issues. • The impact of cross-cutting issues is difficult to quantify.	• Address these issues in the prefeasibility study, and quantify how a positive response can be made to them. Refer to the European Commission manuals on Women in Development and on Employment.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
What is the regulatory framework for enforcing axle load controls?	• No specific measures have been taken. • Measures are not enforced.	• In the prefeasibility study, identify impediments to possible physical and administrative measures. • Examine how effective measures can be adopted by the government and the transport industry. • Determine what actions the government can take to secure enforcement.
What are the technical options for the alternative project solutions?	• No technical alternatives have been considered. • Suggested alternatives are largely unrealistic and spurious.	• Establish and evaluate realistic alternatives in the prefeasibility study.
How appropriate is the technology identified?	• The technology is appropriate, but not adequate for the local situation. • Alternatives have not been considered.	• Investigate the appropriateness of the technology in the prefeasibility study. • Assess whether a different technology, such as labour-based methods, would be cost-effective. Evaluate accessibility to appropriate equipment and spare parts.



Key questions	Possible problems	Potential actions
What are the proposed technical standards and to what extent are these compatible with those of the strategic road network?	• The proposed technical standards are not coherent with the rest of the network. • Technical standards of the existing network are not appropriate.	• In the prefeasibility study, standards should be modified to ensure overall coherence. • Discuss with the government appropriate measures to adjust existing standards.
What safety standards have been considered?	• No consideration has been given to safety. • Safety measures are inadequate.	• Assess and specify the safety requirements in the prefeasibility study.

Action Report Form: Identification of road projects

During identification, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		

Date:

Signature:



Identification of railway projects

Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
What is the national transport plan, and what is the railways component?	• The country does not have a transport plan. • The railways component of the national transport plan has not been updated recently and/or is unrealistic.	• Initiate steps to assist the government in developing a clear transport plan, particularly a railways component. • Analyse the country's current transport network and assist the government in updating its transport plan and railways component.
What is the corporate plan for the railways corporation?	• The corporate plan requires significant updating. • No corporate plan has been drawn up for the railways.	• Commission a study to assist the government in drawing up or updating the corporate plan. • Assess the feasibility of disengaging the government from railways management, and determine appropriate means to initiate the process.
What priority does the government give to railways maintenance?	• Although recognized as a key issue for the sustainability of the railway network, maintenance is handled inefficiently. • The railway infrastructure requires replacement on a scale beyond the capabilities of government and donors.	• Assess the reasons and identify actions the government must take. • Discuss with government whether the railway network should be substantially reduced or abandoned entirely. • In the prefeasibility study, identify a plan to include all railway maintenance measures.
What elements of the transport chain have been considered when identifying transport requirements?	• The proposed route is not part of the country's strategic transport infrastructure network. • Not all physical and non-physical bottlenecks have been considered.	• Determine whether the strategic transport infrastructure network should be updated to include the proposed route. If not, the prefeasibility study should be postponed or abandoned. • Assist the government in establishing a strategic transport infrastructure network. • Ensure that non-physical investment is considered in the prefeasibility study.

Key questions	Possible problems	Potential actions
To what extent does the country rely on the ports and transport infrastructure of neighbouring countries?	• The country depends heavily on one transport corridor from a neighbouring country's port. • The transport systems of neighbouring countries are performing poorly, to the detriment of stable trade flows.	• In the prefeasibility study, apply a regional approach to the transport corridor as a whole. • Pay particular attention to bottlenecks in the transport corridor before developing a sectoral approach for the landlocked country.
What are the potential linkages with other transport modes?	• Improvements in the proposed route depend heavily on rehabilitation or construction of infrastructure in one or more complementary modes.	• In the prefeasibility study, identify the elements required to ensure success, including investments in other modes of transport and intermodal facilities.
What are the effects of the policies and practices of neighbouring countries' transport strategies?	• Transport strategies of neighbouring countries are not supportive. For example, over-regulated systems and non-adherence to transit agreements.	• Discuss the issue in regional meetings with the countries concerned. • In the prefeasibility study, establish the impact of these strategies and identify actions which can reduce their effects. • If necessary, postpone the prefeasibility study until relevant issues are resolved.
What problems are encountered with customs and immigration procedures for international transit?	• Transit and/or border procedures are bureaucratic and time-consuming. • Demands are made for illegal payments.	• Identify ways to standardize the procedures and paperwork with the governments concerned. • In the prefeasibility study, assess whether transit agreements are being respected and whether there is a need to invest in improving facilities and procedures.



Key questions	Possible problems	Potential actions
What problems are related to transit agreements and sharing rolling stock with other railway companies?	• Transit agreements with neighbouring countries require lengthy administrative procedures. • Long turn-round times of rolling stock shared with other railway companies hinder the railway's efficiency.	• Undertake a survey to identify specific practical problems and discuss these with the neighbouring government concerned. • Discuss ways to decrease turnaround times with the railway companies concerned, and if necessary, commission a study on the subject.
How does the proposed investment fit in with current and planned projects by the European Commission and other donors?	• The proposed activity is inconsistent with, or partly duplicates investments by the European Commission and other donors.	• Discuss the proposed investment with the donors concerned, and establish a process to maintain the dialogue during subsequent project phases. • If necessary, consider parallel financing with several donors, or handing over responsibility to other donors.
DEMAND AND ECONOMIC SUSTAINABILITY		
What are the transport-related needs of the various economic and social sectors?	• Transport infrastructure solutions are identified without taking into account the real transport problems of the key demand sectors. • Potential beneficiaries and users are not consulted about their needs.	• The prefeasibility study must review the root causes of transport problems, and include consultation with potential users and beneficiaries to identify their needs.
What is the demand for rail transport?	• There is insufficient demand to justify investment in the railways sector, particularly in the short term.	• Assess the reasons and if required, abandon or postpone the prefeasibility study.
What alternative project solutions have been identified and/or assessed?	• No alternatives have been considered. • Only a limited range of technical alternatives has been considered, based mainly on engineering options. • Institutional and management alternatives have not been considered.	• In the prefeasibility study, identify alternative solutions in other transport modes on an intermodal basis, or by other means such as institutional or management reform.

Key questions	Possible problems	Potential actions
What is the economic and financial feasibility of the alternative project solutions?	• Analyses have been done but are based on inadequate information. • Insufficient sensitivity tests have been done to prove feasibility.	• Commission a baseline study to improve information quality and collection. • In the prefeasibility study, broaden the extent of economic and financial analysis. • Refer to the European Commission manual on Financial and Economic Appraisal
What has been done to monitor the economic sustainability of the railways sector?	• No baseline studies have been undertaken to collect this information. • It is difficult to specify adequate indicators to measure the economic sustainability of the railways sector.	• Commission a baseline study and determine the information to be collected. • Specify quantifiable indicators to measure the success of proposed projects in the economic appraisal.
FINANCIAL SUSTAINABILITY		
How much revenue does the railways raise from user charges, passenger fares and freight tariffs?	• Revenue raised from user charges, fares and tariffs is not sufficient to finance investment in and maintenance of the railway infrastructure. • Revenue would be sufficient but funds are directed away from the railways. • Some routes are kept open to satisfy government social needs but do not receive sufficient subsidy to cover costs.	• Assess appropriate fare and tariff levels and subsidy requirements. Identify actions the government must take to secure funding, for example, by raising freight rates, passenger fares and track access charges. This may require a more comprehensive organization and institutional review. • Consider reducing the size of the network. • Avoid new construction until the government has properly allocated funds for existing maintenance requirements.
How much funding is earmarked for railway maintenance?	• The railways have insufficient funds to maintain the existing infrastructure, let alone for new investments.	• Identify other sources of funds or surplus assets for disposal by the railways. Consider reducing the size of the network. • The prefeasibility study should be postponed until these issues are addressed.



Key questions	Possible problems	Potential actions
How are funds and revenue channelled to develop and maintain the permanent way and rolling stock?	• Systems for government and donor coordinated funding are not managed efficiently. • No clear systems have been established.	• In the prefeasibility study, assess the shortcomings of existing funding systems, and develop ways of improving them. • Consider the feasibility of introducing such systems and if necessary, commission a separate study.
What is the cash flow needed for the alternative project solutions?	• Cash flow needs have not been clearly identified. • Although sufficient funds are available, there is a projected shortfall during those phases requiring heavy expenditure.	• Ensure that funds are available to meet costs as they arise, or modify/abandon the project. • In the prefeasibility study, identify any shortfalls.
What has been done to monitor the potential financial sustainability of the railways sector?	• As baseline studies have not been undertaken, it is difficult to measure the financial sustainability of the railways sector. • Baseline studies do not cover all relevant issues.	• Commission a baseline study and determine the information to be collected. • Specify adequate indicators, and carry out sensitivity tests on how projects in the railways sector would react to modification of key parameters.
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What is the institutional structure of the railways corporation and how efficient is this?	• Insufficient information is available to make an informed judgement. • The functions and responsibilities of the railways corporation are not clearly defined. • The railways corporation is over-staffed and under-funded. • Railways are not operating autonomously or commercially.	• Commission an institutional review. • In the prefeasibility study, take steps to clarify the role of the railways corporation. • In the prefeasibility study, identify actions to improve efficiency through commercialization.

Key questions	Possible problems	Potential actions
What commercial entities, such as autonomous railways operators or track authorities, have been set up?	• Such entities have been established but their institutional framework hampers efficiency. • Such entities have not been established. • Such entities are subject to excessive political control.	• In the prefeasibility study, identify deficiencies and actions to overcome them. • If necessary, commission a complementary study to analyse the feasibility of establishing such entities or improving the existing institutional framework to include a greater role for the private sector.
What non-rail activities are being operated by the railways?	• The railways operate unprofitable non-rail activities, and profitable activities not linked to core business.	• Assess whether these non-rail activities are inherently unprofitable, or whether the private sector could operate them more efficiently.
What institutional structures have been set up for railway maintenance?	• The management of railway maintenance is not clear. • Needs have been identified but measures are implemented late or not at all. • Maintenance is outside the control of service managers.	• Establish a clear network maintenance plan within an appropriate management framework as part of the prefeasibility study.
What management information systems are in place to identify maintenance requirements, and to monitor traffic movements and performance?	• There are no management information systems and processes are not clearly established. • Management information systems are not used efficiently.	• In the prefeasibility study, assess the shortcomings of the situation and identify improvement measures together with costs. These might include training programmes and restructuring of reporting lines.
What policies and practices are used to motivate personnel (such as salary, promotion, training)?	• There is no policy to motivate personnel. • Policies have not achieved the expected results and skilled staff are leaving for the private sector.	• In the prefeasibility study, investigate the need for such policies and ways of introducing them. • Assess why existing policies have failed and determine ways to improve matters.



Key questions	Possible problems	Potential actions
What training programmes are used in the railways corporation?	• Training is limited to technical requirements and there is no training in commercial attitudes or methods. Training is poorly organized.	• Assess the training needs in the prefeasibility study. • Review training needs in the railways corporation in a complementary study, including technical and commercial requirements.
How are users and operators involved in identifying the strategic transport network and its future development?	• There is little or no consultation with users and operators on the railways system.	• Seek ways to involve users and operators in the process, for example, advisory committees, workshops and discussion groups.
What has been done to commercialize operation and management of the railways?	• Commercialization is very limited. • No commercialization has been implemented.	• Investigate impediments to and the potential for commercialization in the prefeasibility study. • Carry out an institutional review to determine how commercialization could be introduced, such as revenue collection, enforcement of regulations, contracting out of services. This may include the introduction of business plans and performance indicators, even within the public sector.
How technically and financially able is the private sector to be involved in the railways sector?	• The local private sector has the financial capacity to be involved but government disbursement mechanisms are too slow and cumbersome. • The local private sector has neither the technical nor financial capacity to become involved.	• Investigate impediments to private sector participation as part of the prefeasibility study. • Propose changes to disbursement mechanisms to meet the needs of local private sector enterprises. • Support the development of training and technical assistance to enhance private sector capability.

Key questions	Possible problems	Potential actions
What is the scope for contracting activities to the private sector?	• The scope for private sector involvement has not been clearly identified, and there are no implementation mechanisms in the railways corporation. • The government/railways corporation does not want to devolve its responsibilities.	• In the prefeasibility study, identify areas for private sector involvement and develop appropriate measures to introduce the private sector, for example, consultancy, maintenance and rehabilitation work. • Discuss with the government and support critical steps in devolving these responsibilities.
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
What is the government policy on pollution?	• The government has no policies to deal with pollution. • Efforts to enforce regulations are ineffective.	• Assist the government in developing an effective and enforceable policy. • In the prefeasibility study, investigate measures to mitigate pollution.
What are the potential environmental and sociocultural impacts of the alternative project solutions?	• No baseline studies have been undertaken to collect this information. • It is difficult to specify adequate indicators to measure the environmental and sociocultural impacts.	• Commission a baseline study and determine the information to be collected. Refer to the European Commission manual on Environmental Impact Assessment. • Specify quantifiable indicators in the prefeasibility study or in a separate environmental and social appraisal.
What changes in land use have been considered in the alternative project solutions and what are the potential impacts on community life and the natural environment?	• Attempts to examine the implication of land-use changes have been ineffective. • There is no land-use planning. • Land has to be acquired. • People have to be resettled.	• Examine the likely impacts of the current proposals in the prefeasibility study. • Assist the government in developing land-use policies. • In the prefeasibility study, include cost estimates for land acquisition and resettlement.



Key questions	Possible problems	Potential actions
What cross-cutting issues (employment, gender) have been considered in the alternative project solutions?	• Little or no attention has been paid to these issues. • The impact of cross-cutting issues is difficult to quantify.	• Address these issues in the prefeasibility study, and quantify how a positive response can be made to them. Refer to the European Commission manuals on Women in Development and on Employment.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
What is the regulatory framework for enforcing wagon over-loading, safety and speed limits?	• The regulatory framework is considered a key issue for sustainability of the railway network, but no specific measures have been taken. • Measures are not enforced leading to accelerated degradation of the network.	• In the prefeasibility study, identify impediments to possible physical and administrative measures. • Examine how effective measures can be adopted both by government and the railways corporation.
What are the technical options for the alternative project solutions?	• No technical alternatives have been considered.	• Establish and evaluate alternatives in the prefeasibility study.
What significant deficiencies or bottlenecks have been identified in the railway system?	• Physical and management deficiencies exist and/or bottlenecks for example, over-utilized railway sections; poorly maintained sections; inadequate signalling; cumbersome checking procedures; and timetables which do not reflect priorities.	• In the prefeasibility study, identify the physical and management reasons for these bottlenecks and proposed actions to address them. • Ensure that non-physical investments are considered.
How appropriate is the technology identified?	• The technology is appropriate, but is not adequate for the local situation. • Alternatives have not been considered.	• In the prefeasibility study, assess whether a different technology would be cost-effective. Evaluate accessibility to appropriate equipment and spare parts.

Key questions	Possible problems	Potential actions
How do the proposed technical standards for the project alternatives compare with the existing network and rolling stock?	• The proposed technical standards are not coherent with the rest of the railway network. • Technical standards of the existing railways are not appropriate.	• Standards should be modified in the prefeasibility study to ensure overall coherence. • Discuss with the government appropriate measures to adjust existing standards.
What safety standards have been considered?	• No consideration has been given to safety. • Safety measures are inadequate.	• Assess and specify safety requirements in the prefeasibility study.



Action Report Form: Identification of railway projects

During identification, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:

Identification of port projects

Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
What is the national transport plan, and what is the ports component?	• The country does not have a transport plan. • The ports component has not been updated recently and/or is unrealistic.	• Initiate steps to assist the government in developing a clear transport plan, particularly a ports component. • Analyse the country's current transport network and assist the government in updating its transport plan and ports component.
What is the strategic plan for the ports sector?	• Strategic plan requires significant updating. • No strategic plan has been drawn up for the ports sector.	• Commission a study to assist the government in drawing up or updating strategic plans for ports. • Assess the feasibility of disengaging the government from the management of the ports sector and determine appropriate measures to initiate the process.
What priority does the government give to maintenance of port infrastructure?	• Maintenance is not considered to be priority. • Although recognized as a key issue for the sustainability of the ports sector, maintenance is handled inefficiently.	• Assess the reasons and identify actions the government must take. • Discuss whether some of the ports infrastructure should be abandoned. • In the prefeasibility study, identify a maintenance plan and include all necessary maintenance measures for ports.
What elements in the transport chain have been considered in identifying the transport requirements?	• Ports are not part of the country's strategic transport infrastructure network. • Not all physical and non-physical bottlenecks have been considered.	• Determine whether the strategic transport infrastructure network should be updated to include ports. If not, the prefeasibility study should be postponed or abandoned. • Assist the government in establishing a strategic transport infrastructure network. • Ensure that non-physical investment is considered in the prefeasibility study.



Key questions	Possible problems	Potential actions
To what extent does the country depend on shipping services?	• Shipping is fundamental to the economic and social development of the country but is not given sufficient priority.	• Discuss the issue with government, and identify actions to ensure that maritime services are given adequate priority.
To what extent do neighbouring countries rely on the country's ports infrastructure?	• The neighbouring country depends heavily on one transport corridor from the country's port. • The transport systems in neighbouring countries are performing poorly, to the detriment of stable trade flows.	• Apply a regional approach to the transport corridor as a whole. • Pay particular attention to bottlenecks in the transport corridor before developing a sectoral approach for the landlocked country.
What are the potential linkages with other transport modes?	• Improvements depend heavily on rehabilitation or construction of infrastructure in one or more complementary modes.	• In the prefeasibility study, identify the elements required to ensure success, including investments in other modes of transport and intermodal facilities.
What effect do the neighbouring countries' ports have on the country's transport objectives?	• Investment in the ports sector is likely to be negatively affected by strategies of neighbouring countries, for example, over-regulated ports and shipping services.	• Discuss the issue in regional meetings with the countries concerned. • In the prefeasibility study, establish the impact of these strategies and identify actions which can be taken to reduce their effects. • If necessary, postpone the prefeasibility study until relevant issues are addressed.
What are the constraints of customs, police, insurance and other formalities at the ports?	• These formalities are not coordinated. • Special requirements (bribes, theft and damage) lead to unduly high costs for certain traffic. • Bureaucratic and time-consuming procedures reduce the efficiency of transport and hence raise costs.	• Identify with the governments, shipping lines and port operators concerned ways to standardize procedures and paperwork. • In the prefeasibility study, assess whether there is a need to improve the efficiency of customs and other procedures at ports.

Key questions	Possible problems	Potential actions
How do shipping practices constrain the efficiency of port operations?	• Arrival and service patterns of ships are beyond the control of the port's severely restricted capacity.	• Initiate a dialogue between shipping lines and port authorities to establish clear port procedures and vessel servicing.
How does the proposed investment in the ports sector fit in with current and planned projects by the European Commission and other donors?	• The proposed activity is inconsistent with, or partly duplicates, investments by the European Commission and other donors.	• Discuss the proposed investment with the donors concerned, and establish a process for maintaining the dialogue during the next project phases. • If necessary, consider parallel financing by several donors, or handing over responsibility to other donors.
DEMAND AND ECONOMIC SUSTAINABILITY		
What are the transport-related needs of the various economic and social sectors?	• Transport infrastructure solutions are identified without taking into account the real transport problems of the key demand sectors. • Potential users and beneficiaries are not consulted about their needs.	• The prefeasibility study must review the root causes of transport problems, and include consultation with potential beneficiaries and users to identify their needs.
What is the demand for ports?	• There is insufficient demand to justify investment, particularly in the short term.	• Assess the reasons and if required, abandon or postpone the prefeasibility study.
What alternative project solutions have been identified and/or assessed?	• No alternatives have been considered. • Only a limited range of alternatives has been considered, based mainly on engineering options. • Institutional and management alternatives have not been considered.	• In the prefeasibility study, identify alternative solutions in other transport modes on an intermodal basis, or by other means, such as institutional reform.



Key questions	Possible problems	Potential actions
What is the economic and financial feasibility of the alternative project solutions?	• Analyses have been done but are based on inadequate information. • Insufficient sensitivity tests have been done to prove feasibility.	• Commission a baseline study to improve information quality and collection. • In the prefeasibility study, broaden the extent of economic and financial analysis. • Refer to the European Commission manual on Financial and Economic Analysis.
What has been done to monitor the economic sustainability of the ports sector?	• No baseline studies have been undertaken to collect this information. • It is difficult to specify adequate indicators to measure the economic sustainability of the ports sector.	• Commission a baseline study and determine the information to be collected. • Specify quantifiable indicators to measure the success of proposed projects in the economic appraisal.
FINANCIAL SUSTAINABILITY		
What funds are available to provide the necessary maintenance capacity?	• The port has insufficient funds to maintain existing infrastructure, let alone for new investment.	• Identify other sources of funds, such as increasing port fees and other levies. The prefeasibility study should be postponed or abandoned until these issues are addressed.
How much revenue does the government and/or port authority raise from tariffs and user charges?	• Revenue raised from tariffs and user charges is not sufficient to finance investments and maintenance of the port infrastructure. • Revenue would be sufficient, but funds are directed away from the port.	• Assess appropriate tariff levels and subsidy requirements and identify actions the government must take to secure funding, for example, raising tariffs on stevedoring, lighterage and storage. This may require a comprehensive organization and institutional review of the port and maritime operation as a whole. • Consider reducing the number of ports. • Avoid new construction until the government or port authority has properly allocated funds for existing maintenance requirements.

Key questions	Possible problems	Potential actions
How are funds and revenue channelled to develop and maintain infrastructure and equipment?	• Systems for government and donor funding are not managed efficiently. • No clear systems have been established.	• In the prefeasibility study, assess the shortcomings of existing funding systems and develop ways to improve them. • Consider the feasibility of introducing such systems and if needed, commission a separate study.
What is the cash flow needed for the alternative project solutions?	• The cash flow needs have not been clearly identified. • Although sufficient funds are available, there is a projected shortfall during those phases requiring heavy expenditure.	• Ensure that funds are available to meet costs as they arise or modify/abandon the project. • Identify any shortfalls in the prefeasibility study.
What has been done to monitor the potential financial sustainability of the ports sector?	• As baseline studies have not been undertaken, it is difficult to measure the financial sustainability of the ports sector. • Baseline studies have not covered all relevant issues.	• Commission a baseline study and determine the information to be collected. • Specify adequate indicators and carry out sensitivity tests on how the ports sector would react to modification of key parameters.
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What are the institutional structures of the ports authority and how efficient are they?	• Insufficient information is available to make an informed judgement. • The functions and responsibilities of the ports authorities are not clearly defined. • Ports are not operating autonomously or commercially. • Ports authorities are over-staffed and underfunded.	• Commission an institutional review. • Advise the government on steps to clarify the role of the ports authorities.
How efficiently are existing ports managed?	• Ports are heavily congested, and suffer from inadequate equipment and inefficient landside operations.	• Review port management and operating procedures, equipment requirements and landside procedures in the prefeasibility study.



Key questions	Possible problems	Potential actions
What is the institutional framework for autonomous ports authorities and how adequate are these?	• The institutional framework of the ports authorities leads to inefficiencies. • Such authorities have not been established. • Such authorities are subject to excessive political control.	• In the prefeasibility study, identify deficiencies and actions to overcome them. • If necessary, commission a complementary study to analyse the feasibility of establishing such agencies, or improving the existing institutional framework to include a greater role for private sector involvement.
What is the institutional framework for maintenance in the ports sector?	• Maintenance management is not clear. Needs have been identified, but measures are implemented late or not at all.	• Establish a clear maintenance plan with an appropriate management framework as part of the prefeasibility study.
What management information systems are in place to identify maintenance requirements and monitor performance?	• There are no management information systems and processes are not clearly established. • Management information systems are used inefficiently.	• In the prefeasibility study, assess the shortcomings of the existing situation and identify improvement measures together with costs. These might include training programmes and restructuring of reporting lines.
What policies and practices are used to motivate personnel (such as salary, promotion, training)?	• There is no policy to motivate personnel. • Policies have not achieved the expected results and skilled staff are leaving for the private sector.	• In prefeasibility study, investigate the need for ways to introduce such policies. • Assess why policies have failed and determine ways to improve matters.
What are the working arrangements for the labour force at the ports?	• The labour force is strongly unionized and may, therefore, be working under inflexible arrangements.	• Identify inflexibilities in the prefeasibility study, and assess whether they will endanger the success of investment in the sector. If so, initiate negotiations with interested parties to minimize these inflexibilities.
How are users and operators involved in identifying the port and shipping services network and its future development?	• There is little or no consultation with users and operators of the network.	• Seek ways to involve users and operators in the process, for example, advisory committees, workshops and discussion groups.

Key questions	Possible problems	Potential actions
What has been done to commercialize operation and management of ports and shipping services?	• Commercialization is very limited. • No commercialization has been implemented.	• In the prefeasibility study, investigate further possibilities for commercialization, for example, stevedoring, dredging and pilotage. • Carry out an institutional review to determine how commercialization could be introduced. This could include business plans and performance indicators, even within the public sector, for example, freedom to set tariffs without the need for government approval.
How technically and financially able is the private sector to be involved in the ports sector?	• The local private sector has the financial capacity, but the government disbursement mechanisms are too slow and cumbersome. • The local private sector has neither the technical nor the financial capacity to become involved.	• Investigate impediments to private sector participation as part of the prefeasibility study. • Support the development of private sector capability.
What is the scope for private sector involvement?	• The scope for private sector involvement has not been clearly identified. • Although there is scope for private sector involvement, the government does not want to devolve its responsibilities.	• In the prefeasibility study, identify areas for private sector involvement and develop appropriate measures to introduce the private sector, for example consultancy, equipment maintenance and specialized operating concessions. • Discuss with the government and support critical steps in implementation.



Key questions	Possible problems	Potential actions
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
What is the government policy on pollution?	• The government has no policies for dealing with pollution. • Efforts to enforce regulations are ineffective.	• Investigate actions to mitigate pollution in the prefeasibility study. • Assist the government in developing an effective and enforceable policy.
What are the potential environmental and sociocultural impacts of the alternative project solutions?	• No baseline studies have been undertaken to collect this information. • It is difficult to specify adequate indicators to measure the environmental and sociocultural impacts.	• Commission a baseline study and determine the information to be collected. Refer to the European Commission manual on Environmental Impact Assessment. • Specify quantifiable indicators in the prefeasibility study or in a separate environmental and social appraisal.
What changes in land use have been considered in the alternative project solutions, and what are the impacts on community life and the marine environment?	• Attempts to examine the implication of land-use changes have been ineffective. • There is no land-use planning. • Land has to be acquired. • People have to be resettled.	• Examine the likely impact of the current proposals in the prefeasibility study. • Assist the government in developing land-use policies. • In the prefeasibility study, include cost estimates for land acquisition and resettlement.
What cross-cutting issues (employment, gender, etc) have been considered in the alternative project solutions?	• Little or no attention has been paid to these issues. • The impact of cross-cutting issues is difficult to quantify.	• Address these issues in the prefeasibility study, and quantify how a positive response can be made to them. Refer to the European Commission manuals on Women in Development and on Employment.

Key questions	Possible problems	Potential actions
REGULATORY AND OPERATIONAL SUSTAINABILITY		
To what extent do aids to navigation meet international standards, and how regularly are they maintained?	• Aids to navigation are below the required standards. • Aids to navigation are not sufficiently or regularly maintained and hinder port operations. • Security problems necessitate constant guarding or replacement of equipment.	• Discuss the development of an appropriate maintenance plan with the port authorities. • Consider actions to improve training and security in the prefeasibility study. • Provide aids to navigation where security is assured.
What is the regulatory framework for enforcing safety and environmental regulations?	• The regulatory framework is considered a key issue for sustainability of the ports sector network, but no specific measures have been taken. • Measures are not being enforced.	• Identify impediments to enforcement in the prefeasibility study. • Examine how effective measures can be adopted by government, the port authorities and shipping lines, including possible physical and administrative measures.
What are the technical options of the alternative project solutions?	• No technical alternatives have been considered.	• Establish and evaluate realistic alternatives in the prefeasibility study.
How appropriate is the technology identified?	• The technology is appropriate, but is not adequate for the local situation. • Alternatives have not been considered.	• In the prefeasibility study, assess whether a different technology would be more cost-effective. Evaluate accessibility to appropriate equipment and spare parts.
How do the proposed technical standards compare with existing infrastructure and equipment?	• The proposed technical standards are not coherent with the rest of the port infrastructure. • Technical standards of the port infrastructure are not appropriate.	• Standards should be modified in the prefeasibility study to ensure overall coherence. • Discuss with the government appropriate measures to adjust existing standards.
What safety standards have been considered?	• No consideration has been given to safety. • Safety measures are inadequate.	• Assess and specify the safety requirements in the prefeasibility study.



Action Report Form: Identification of port projects

During identification, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:

Identification of airport projects

Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
What is the national transport plan, and what is the air transport component?	• The country does not have a transport plan. • The airports component has not been updated recently and/or is unrealistic.	• Initiate steps to assist the government in developing a clear transport plan, particularly an airports component. • Analyse the country's current transport network and assist the government in updating its transport plan and airports component.
What is the civil aviation plan?	• The national civil aviation plan requires significant updating. • No civil aviation plan has been drawn up.	• Commission a study to assist the government in drawing up or updating the national civil aviation plan. • Assess the feasibility of disengaging the government from management of the airports sector and determine appropriate measures to initiate the process.
What priority does the government give to maintenance of airport infrastructure?	• Maintenance is not considered to be a priority. • Although recognized as a key issue for the sustainability of the airports sector, maintenance is handled very inefficiently.	• Assess the reasons and identify actions to be taken by the government. • Discuss whether some of the airport infrastructure should be abandoned. • In the prefeasibility study, identify a maintenance plan and include all necessary maintenance measures for airports and air navigation systems.
How are ICAO standards and practices followed in developing airports policy?	• The country is subject to ICAO recommendations but does not abide by them. • There is too little traffic at secondary airports to justify investment and maintenance of equipment.	• Include appropriate reviews of such standards and practices in the prefeasibility study. • Assess the potential impact of these standards and practices on options.



Key questions	Possible problems	Potential actions
To what extent does the country depend on airline services?	• Although fundamental to national economic and social development, air transport is not given sufficient priority.	• Discuss the issue with government and identify actions to ensure that airports are given adequate priority.
What linkages between air transport and other modes have been considered?	• Improvements in the sector depend heavily on the rehabilitation or construction of infrastructure in one or more complementary modes.	• In the prefeasibility study, identify the elements required to ensure success, including investment in other modes of transport and intermodal facilities.
To what extent has the future evolution of the air transport market been taken into account?	• Air transport policy does not adequately reflect the long-term evolution of the air transport market.	• Commission a study to assess the long-term effect of this evolution.
What are the effects of the neighbouring countries' air transport strategies?	• Strategies of neighbouring countries are not supportive. For example, by restricting freedom to carry passengers and/or freight. • The country depends on the efficient operation of a regional hub in a neighbouring country. • Bureaucratic and time-consuming procedures at airports affect the efficiency of air transport.	• Discuss the issue in regional meetings with the countries concerned. • In the prefeasibility study, establish the impact of these and identify actions to reduce their effects.
What practices constrain the efficiency of airport operations?	• Compliance with foreign operational, health and immigration requirements.	• Discuss with other countries to find ways to alleviate these difficulties.
How does the proposed investment fit in with current and planned projects by the European Commission and other donors?	• The proposed activities are inconsistent with, or partly duplicate, investment by the European Commission and other donors.	• Discuss the proposed investment with the donors concerned, and establish a process for maintaining dialogue during subsequent project phases. • If necessary, consider parallel financing by several donors, or handing over responsibility to other donors.

Key questions	Possible problems	Potential actions
DEMAND AND ECONOMIC SUSTAINABILITY		
What is the future air traffic demand and how accurate is the assessment?	• No assessment has been made. • There is not sufficient demand to justify investment, particularly in the short term. • Existing infrastructure will not be able to cope with future air traffic demand.	• Assess the reasons in the prefeasibility study. • Check whether forecast traffic should be met by new investment or better management of existing facilities.
What alternative project solutions have been identified and/or assessed?	• No alternatives have been considered. • Only a limited range of alternatives has been considered, based mainly on engineering options. • Management and/or institutional alternatives have not been considered.	• In the prefeasibility study, identify alternative solutions in other transport modes on an intermodal basis, or by other means such as institutional reform.
What is the economic and financial feasibility of the alternative project solutions?	• Analyses have been done but are based on inadequate information. • Insufficient sensitivity tests have been done to prove feasibility.	• Commission a baseline study to improve information quality and collection. • In the prefeasibility study, broaden the extent of economic and financial analysis. • Refer to the European Commission manual on Financial and Economic Appraisal.
What has been done to monitor the economic sustainability of the airports sector?	• No baseline studies have been undertaken to collect this information. • It is difficult to specify adequate indicators to measure the economic sustainability of the sector.	• Commission a baseline study and determine the information to be collected. • Specify quantifiable indicators in the economic appraisal.



Key questions	Possible problems	Potential actions
FINANCIAL SUSTAINABILITY		
How much revenue does the government and/or airport authority raise from fees and user charges?	• Revenue raised from fees and user charges is not sufficient to finance investment and maintenance of the airport infrastructure. • Revenue would be sufficient, but the funds are directed away from the airport.	• Support studies to assess appropriate tariff levels and subsidy requirements. Identify actions the government must take to secure funding, for example, by raising aircraft fees or introducing more commercial opportunities within the airports, such as retailing. This may require a more comprehensive organization and institutional review of the airports sector. • Consider reducing the number of airports. • Avoid new construction until the government or relevant authority has properly allocated funds for existing maintenance requirements.
How much government funding is required to provide the necessary maintenance capacity?	• The airport has insufficient funds for the maintenance of existing infrastructure, let alone for new investment.	• Identify other sources of funds, such as increasing airport and navigation fees and other levies. • The prefeasibility study should be postponed or abandoned.
What is the cash flow needed for the options?	• Cash flow needs have not been clearly identified. • Although sufficient funds are available, there is a projected shortfall during those phases requiring heavy expenditure.	• Ensure that funds are available to meet costs as they arise or modify/abandon the project. • In the prefeasibility study, identify any shortfalls.
What has been done to monitor the financial sustainability of the airports sector?	• As baseline studies have not been undertaken it is difficult to measure the financial sustainability of the sector. • Baseline studies do not cover all relevant issues.	• Commission a baseline study and determine the information to be collected. • Specify adequate indicators and carry out sensitivity tests on how the sector reacts to modification of key parameters.

Key questions	Possible problems	Potential actions
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What is the institutional structure of the airport, airline and air navigation authorities, and how efficient are these?	• Insufficient information is available to make an informed judgement. • The functions and responsibilities of the airport administrations are not clearly defined. • Airports are not operating autonomously or commercially. • The administrations are over-staffed and under-funded.	• Commission an institutional review. • Advise the government on steps to clarify and improve the role of the airports administration.
What is the institutional framework of the autonomous authorities (airports, air navigation), and how adequate is this?	• Such authorities are inefficient because there is no adequate institutional framework. • Such authorities have not been established. • Such authorities are subject to excessive political control.	• Identify deficiencies and actions to overcome them in the prefeasibility study. • If necessary, commission a complementary study to analyse the feasibility of establishing such agencies or improving existing institutions, including a greater role for private sector involvement.
What is the institutional framework for maintenance in the airports sector?	• The management of maintenance is not clear. • Needs have been identified but measures are implemented late or not at all.	• Establish a clear maintenance plan with an appropriate management framework as part of the prefeasibility study.
What management information systems are in place to identify maintenance requirements and monitor performance?	• There are no management information systems, and existing processes are not clearly established. • Management information systems are used inefficiently.	• In the prefeasibility study, assess the shortcomings of the existing situation and identify improvement measures together with costs. These might include training programmes and restructuring of reporting lines.
What policies and practices are used to motivate personnel (such as salary, promotion, training)?	• There is no policy to motivate personnel. • Policies have not achieved the expected results, and skilled staff are leaving for the private sector.	• In the prefeasibility study, investigate ways to introduce such policies. • Assess why policies have failed and determine ways to improve matters.



Key questions	Possible problems	Potential actions
What are the working arrangements for the labour force of the airport?	• The labour force is strongly unionized and may, therefore, be working under inflexible arrangements.	• Identify inflexibilities in the prefeasibility study and assess whether they will endanger the success of investment in the sector. If so, initiate negotiations with interested parties to minimize these inflexibilities.
How are users and operators involved in identifying future needs?	• There is little or no consultation with users and operators of the network.	• Seek ways to involve users and operators in the process, for example, through advisory committees, workshops, and discussion groups.
What has been done to commercialize operation and management of the airports?	• Commercialization is very limited. • No commercialization has been implemented.	• In the prefeasibility study, investigate ways to further commercialization, such as security, ancillary services and third party aircraft maintenance. • Carry out an institutional review to determine how commercialization could be introduced. This could include business plans and the use of performance indicators, even within the public sector, for example, tariff setting and purchasing aircraft on a commercial rather than political basis.
How technically and financially able is the private sector to be involved in the airports sector?	• The local private sector has the financial capacity to be involved but government disbursement mechanisms are slow and cumbersome. • The local private sector has neither the technical nor the financial capacity to become involved.	• In the prefeasibility study, investigate impediments to private sector participation. • Support the development of private sector capability.

Key questions	Possible problems	Potential actions
What is the scope for private sector involvement?	• The scope for private sector involvement has not been clearly identified. • Although there is scope for private sector involvement, the government does not want to devolve its responsibilities.	• In the prefeasibility study, identify areas for private sector involvement and develop appropriate measures to introduce the private sector, such as consultancy, equipment maintenance, retailing, catering, passenger and cargo handling concessions. • Discuss this problem with the government and support critical steps in implementation.
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
What is government policy on pollution?	• Government has no policies to deal with pollution. • Efforts to enforce regulations are ineffective.	• Investigate actions to mitigate pollution in the prefeasibility study. • Assist the government in developing an effective and enforceable policy.
What are the potential environmental and sociocultural impacts in the alternative project solutions?	• No baseline studies have been undertaken to collect this information. • It is difficult to specify adequate indicators to measure the environmental and sociocultural impacts.	• Commission a baseline study and determine the information to be collected. Refer to the European Commission manual on Environmental Impact Assessment. • Specify quantifiable indicators in the prefeasibility study or a separate environmental and social appraisal.
What changes in land use have been considered in the alternative project solutions, and what are the impacts on community life and the natural environment?	• Attempts to examine the implication of land-use changes have been ineffective. • There is no land-use planning. • Land has to be acquired. • People have to be resettled.	• Examine the likely impacts in the prefeasibility study. • Assist the government in developing land-use policies. • In the prefeasibility study, include cost estimates for land acquisition and resettlement.



Key questions	Possible problems	Potential actions
What cross-cutting issues (employment, gender, etc) have been considered in the alternative project solutions?	• Little or no attention has been paid to these issues. • The impact on cross-cutting issues is difficult to quantify.	• Address these issues in the prefeasibility study, and quantify how a positive response can be made to them. Refer to the European Commission manuals on Women in Development and on Employment.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
To what extent do aids to navigation meet international standards, and how regularly are they maintained?	• Aids to navigation are below the required standards • Navigation aids are not sufficiently or regularly maintained and hinder airport operations. • Security problems necessitate constant guarding or replacement of equipment.	• Discuss the development of an appropriate maintenance plan with the airport authorities. • Consider actions to improve training and security in the prefeasibility study. • Provide aids to navigation where security is assured.
What is the regulatory framework for enforcing safety and environmental regulations?	• The regulatory framework is considered a key issue for the sustainability of transport infrastructure network, but no specific measures have been taken. • Measures are not enforced.	• Identify impediments to enforcement in the prefeasibility study. • Examine how effective measures can be adopted by government, the airport authorities, airlines and air navigation authorities, including possible physical and administrative measures.
What are the technical options for the alternative project solutions?	• No technical alternatives have been considered.	• Establish and evaluate realistic alternatives in the prefeasibility study.
How appropriate is the technology identified?	• The technology is appropriate, but is not adequate for the local situation. • Alternatives have not been considered.	• In the prefeasibility study, assess whether a different technology would be cost-effective. Evaluate accessibility to appropriate equipment and spare parts.

Key questions	Possible problems	Potential actions
How do the proposed technical standards compare with the existing system?	• The proposed technical standards are not coherent with the rest of the system. • The technical standards of the existing system are not appropriate.	• In the prefeasibility study, standards should be modified to ensure overall coherence. • Discuss with the government appropriate measures to adjust existing standards.
What safety standards have been considered?	• No consideration has been given to safety. • Safety measures are inadequate.	• Assess and specify the safety requirements in the prefeasibility study.



Action Report Form: Identification of airport projects

During identification, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:

Chapter 10



Formulation involves carrying out a feasibility study which formulates all project components and confirms the project's sustainability.

10

Formulation

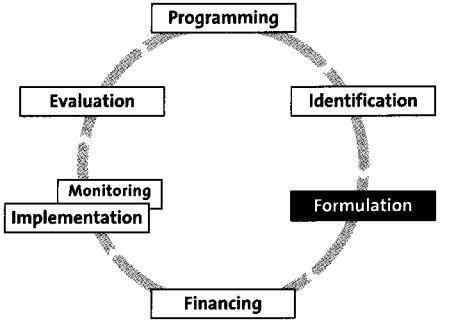
Purpose
Formulating all project components and confirming the project's sustainability.

Means
A feasibility study to formulate the project components and parameters, to prepare detailed technical designs, and to undertake detailed economic and financial, institutional, environmental and sociocultural studies.

Inputs
- Prefeasibility study report defining key components and parameters of the proposed project.
- Terms of Reference for a feasibility study.
- Outline of complementary actions to support project sustainability.

Results
- Feasibility report of a sustainable project.
- Draft Financing Proposal.
- Detailed design, tender documents and technical specifications.
- Complementary actions for project implementation and supporting project sustainability.
- Indicators to monitor project benefits, results, activities and assumptions.
- Operational plan for project implementation and monitoring.

There are separate sections for roads, railways, ports and airports as each sector has different requirements.



Use the guidelines to address the main issues in formulating project components and confirming project sustainability. Record the problems encountered, the actions taken and the assumptions made on the Action Report Form.



Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
How has the project context changed since the identification phase?	• Considerable time has elapsed since project identification, and significant changes have occurred at national, political and economic levels.	• Re-assess the appropriateness of the project and in the feasibility study. If necessary, modify or abandon the project.
What special conditions and accompanying measures are required to support the project?	• No specific conditions and measures are established. • Specific conditions and measures have not been respected.	• Intensify dialogue with the government. • In the feasibility study, specify a timetable for implementing conditions and link this to disbursements. • Postpone or re-schedule the project until conditions are met.
DEMAND AND ECONOMIC SUSTAINABILITY		
How has traffic demand changed since the project identification?	• Due to unforeseen changes, demand has significantly decreased. • Traffic demand well in excess of forecasts is expected due to increased activity in economic sectors.	• In the feasibility study, assess the future impact of these changes on infrastructure needs. Modify, postpone or abandon the project if necessary.
What are the project's economic benefits?	• Project appraisal is mainly based on benefits and savings which are not robust and/or appear highly optimistic. This will probably be most significant in the short term.	• Re-assess these benefits in the feasibility study. The project should be modified as necessary. • Refer to the European Commission manual on Financial and Economic Analysis.
FINANCIAL SUSTAINABILITY		
What funds are available to ensure the project's sustainability?	• Project operation and maintenance costs are not covered by direct user charges or tariffs. • The road agency has insufficient financial resources for future maintenance of the project.	• In the feasibility study, investigate introducing or increasing user charges, and the feasibility of levying other taxes. • Postpone the project and concentrate on maintenance of existing infrastructure.

Key questions	Possible problems	Potential actions
What are the procedures for collection, allocation and disbursement of funds for road maintenance?	• There is no road fund or dedicated special fund. • The road fund is ineffective as some of the funds are directed to other uses.	• Establishing a road fund may take priority. • Assess the structural reasons for this misallocation, and develop appropriate changes. Actions for government must be clearly defined.
What costs are associated with the project?	• Some associated costs, such as provision for spare parts, and interruptions to normal transport services during project implementation, are not included in the project budget.	• Request further details of these costs as part of the feasibility study.
How do project costs compare with those of similar projects?	• The project cost is significantly higher/lower than that of similar projects.	• Clarify the reasons for such differences in the feasibility study. if necessary, undertake a complete re-costing or investigate alternative solutions.
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What organization has been established for the project?	• Responsibilities for project management and maintenance are not clearly specified. Several departments of different ministries are involved.	• In the feasibility study, define the roles and responsibilities of all involved parties, and allocate their tasks.
What institutional support is needed for the project?	• Institutional structures and staff are inefficient, which may jeopardize the project's sustainability. • Ministries still have extensive management control of transport operations.	• Required institutional changes should be agreed with the government. Changes could be included as conditionalities to the project. • Encourage contracting out of services and work to the private sector.
What is the scope and cost of the technical assistance required?	• The scope of the technical assistance has been poorly identified, and the cost may be underestimated.	• Clarify the Terms of Reference for technical assistance and costs in the feasibility study, and include them in the overall project budget. • Ensure that technical assistance includes substantial skills transfer.



Key questions	Possible problems	Potential actions
What is the scope for private sector involvement?	• There is scope for private sector involvement but the government does not want to devolve its responsibilities.	• Identify specific areas for private sector involvement and discuss with the government. If necessary, include private sector involvement as a conditionality.
How able is the private sector to undertake the tasks required?	• The private sector does not have sufficient skills and resources.	• In the feasibility study, structure contracts so that private sector participation is encouraged. • Detail the training requirements of the private sector in the feasibility study.
How have contracts been packaged to encourage participation by the local private sector?	• Local private sector capabilities are excluded. • Proposed contract conditions make it difficult for the local private sector to participate.	• Ensure that the project design and contract arrangements accommodate local private sector participation.
How does road management need to be restructured?	• Restructuring road management is fundamental to project sustainability, but little or nothing has been done to achieve this.	• Agree appropriate measures with the government. In the feasibility study, establish a time scale for project implementation and link it to disbursements. • Required actions could be included as special conditions and/or accompanying measures.
How will financial and technical audits be carried out?	• Provisions for financial and technical audits have been overlooked. • Auditing is restricted to internal systems. • Auditing is restricted to financial requirements.	• Include provisions for financial and technical audits.

Key questions	Possible problems	Potential actions
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
How does the project take account of the risk of increased environmental pollution?	• Increased pollution arising from the project is not considered. • Although increased pollution risks have been identified, remedial measures are not adequate.	• In the feasibility study, describe and quantify the pollution risks and propose amelioration measures.
What are the opportunities for increased employment?	• The design excludes the possibility of local involvement. • Proposed contract conditions make it difficult for local contractors to participate.	• Ensure that the project design allows local contractor participation. • Establish contractual arrangements to secure local participation.
How will the project respond to local community needs?	• Local needs have not been clearly ascertained. • There are no mechanisms to express local needs. • Local needs are subordinate to national requirements.	• Explicitly canvass local needs during project formulation. • Support participation in forums to express local needs, such as discussion groups, village councils and Chambers of Commerce.
What is being done to deal with migrant labour?	• The project requires a significant inflow of labour, but no actions have been taken to accommodate these people.	• In the feasibility study, detail the facilities required for migrant labour. • Include an accompanying measure which should precede project implementation.
How has the problem of land acquisition been resolved?	• This problem has not been addressed. • Compensation and resettlement claims have not been dealt with. • Illegal squatters may be difficult to relocate.	• In the feasibility study, confirm acquisition, compensation and relocation needs and prepare an implementation timetable. • Modify or postpone the project until such issues are dealt with.



Key questions	Possible problems	Potential actions
What are the opportunities for labour-based work?	• The design precludes labour-based work. • Capital-intensive maintenance is planned.	• In the feasibility study, consider the scope for labour-based work in both capital and maintenance activities.
How will the local community participate in project design?	• The local community has been excluded from project design. • There is no mechanism for local participation.	• Ensure that the project design allows for participation by the local community. • Support participation by local communities in project design.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
What technology has been identified for the project?	• The proposed technology is not appropriate. For example, it depends on imported skilled and equipment. • The proposed technology is poorly adapted to local conditions.	• In the feasibility study, assess the financial and economic impacts of alternative technologies to gauge their cost-effectiveness. Determine accessibility to appropriate equipment and spare parts.
How compatible are the project's design standards with the type of traffic expected?	• The project design is over-sized/under-sized in relation to demand. • The project design is not flexible enough to accommodate future traffic demand. • Proposed standards involve excessive construction costs.	• In the feasibility study, revise design standards to match demand and user requirements. • Locate additional sources of financing from prospective users to pay for the capital, operational and maintenance costs of the extra requirements.
What is the project's maintenance plan?	• There is no maintenance plan. • The maintenance plan has not been sufficiently quantified for network maintenance planning purposes.	• In the feasibility study, revise the maintenance plan to include the missing elements. • Do not proceed with the project until a maintenance plan has been set up and agreed.
What are the practical and institutional arrangements for axle load control?	• Practical and institutional arrangements for enforcement are not clearly established. • Axle load control is not enforced. • Demands are made for illegal payments.	• Discuss the issue with the government. • Identify necessary actions in the feasibility study, and investigate ways to involve transport operators in the private sector.

Key questions	Possible problems	Potential actions
What indicators and data collection system have been set up to monitor the project activities, results, and assumptions?	• No indicators and data collection system have been set up. • Staff do not have the required skills to operate and manage the management information system.	• Determine indicators for monitoring project progress and impact, and related data collection procedures. • Propose staff training in the feasibility study. • Consider simplifying the data requirements.
What ground investigations have been carried out?	• A thorough ground investigation has not been undertaken, although the complexity of the project requires it.	• A detailed ground investigation should be undertaken as part of the feasibility study.
What is the operational plan for project implementation?	• There is no project operational plan. • The operational plan is too ambitious.	• In the feasibility study, revise the operational plan to make it more realistic.
How do roadside checks enforce traffic regulations?	• Often checks fail to reduce the number of offences committed. • Offenders offer bribes as the cost of delay is greater than the fine. • Fines imposed are too low.	• Increase supervision of roadside checks. • Review level of fines and procedure for enforcement by the legal system. • Improve private sector awareness of the need for adherence to regulations.



Action Report Form: Formulation of road projects

During formulation, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:

Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
How has the project context changed since the identification phase?	• Significant changes have occurred at national, political and economic level.	• Re-assess the appropriateness of the project in the feasibility study. If necessary, modify or abandon the project.
What special conditions and accompanying measures are required to support the project?	• No specific conditions and measures are established. • Specific conditions and measures have not been respected.	• Intensify dialogue with the government. • In the feasibility study, specify a timetable for implementing conditions and link it to disbursements. • Postpone or re-schedule the project until the conditions are met.
DEMAND AND ECONOMIC SUSTAINABILITY		
How have demand levels changed since project identification?	• Due to unforeseen changes, demand has significantly decreased.	• In the feasibility study, assess the future impact of these changes on infrastructure needs. If necessary, modify, postpone or abandon the project.
What are the project's economic benefits?	• The project appraisal is mainly based on benefits and savings which are not robust and/or appear highly optimistic. This will probably be most significant in the short term.	• Assess these benefits in the feasibility study. The project should be modified as necessary. • Refer to the European Commission manual on Financial and Economic Analysis.
FINANCIAL SUSTAINABILITY		
What funds are available to ensure the project's sustainability?	• The railways corporation has insufficient financial resources for future operation and maintenance of the project.	• In the feasibility study, investigate the possibility of increasing tariffs and levying other taxes. • Postpone the project and concentrate on maintenance of existing infrastructure.



Key questions	Possible problems	Potential actions
What costs are associated with the project?	• Some associated costs, such as provision for spare parts and interruptions to normal transport services during project implementation, are not included in the budget.	• Request further details of these costs as part of the feasibility study.
How do project costs compare with those of similar projects?	• The project cost is significantly higher/lower than similar projects.	• Clarify the reasons for such differences in the feasibility study. If necessary, undertake a complete re-costing or investigate alternative solutions.
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What organization has been established for the project?	• Responsibilities for project management and maintenance are not clearly specified.	• In the feasibility study, define the role and responsibilities of all involved parties, and allocate their tasks.
What institutional support is needed for the project?	• Institutional structures and staff are inefficient which may jeopardize project sustainability.	• Required institutional changes should be agreed with the government. Changes could be included as conditionalities to the project.
What is the scope and cost of the technical assistance required?	• The scope of technical assistance has been poorly identified and its cost may be underestimated.	• Clarify the Terms of Reference for technical assistance and costs in the feasibility study, and include them in the overall project budget. • Ensure that technical assistance includes substantial skills transfer.
What is the scope for private sector involvement?	• There is scope for private sector involvement but the government does not want to devolve its responsibilities.	• Identify specific areas for private sector involvement and discuss this problem with the government. If necessary, include private sector involvement as a conditionality.

Key questions	Possible problems	Potential actions
How able is the private sector to undertake the tasks required?	• The private sector does not have sufficient skills and resources.	• In the feasibility study, specify ways of encouraging private sector participation. • In the feasibility study, detail the training requirements of the private sector.
How have contracts been packaged to encourage participation by the local private sector?	• Local private sector capabilities are excluded. • Proposed contract conditions make it difficult for the local private sector to participate.	• Ensure that the project design and contract arrangements accommodate local private sector participation.
How does railways management need to be restructured?	• Restructuring of railways management is fundamental to project sustainability, but little or nothing has been achieved.	• Agree appropriate measures with the government. In the feasibility study, establish a timetable of project implementation and link this to disbursements. • Required actions should be included as special conditions and/or accompanying measures.
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
How does the project take account of the risk of increased environmental pollution?	• Increased pollution arising from the project is not considered. • Although increased pollution risks have been identified, remedial measures are not adequate.	• In the feasibility study, describe and quantify the pollution risks and propose amelioration measures.
What are the opportunities for increased employment?	• The design excludes the possibility of local involvement. • Proposed contract conditions make it difficult for local contractors to participate.	• Ensure that the project design allows local contractor participation. • Establish contractual arrangements to secure local participation.



Key questions	Possible problems	Potential actions
How will the project respond to local community needs?	• Local needs have not been clearly ascertained. • There are no mechanisms to express local needs. • Local needs are subordinate to national requirements.	• Explicitly canvass local needs during project formulation. • Support participation in forums to express local needs, such as discussion groups, village councils and Chambers of Commerce.
What is being done to deal with migrant labour?	• The project requires a significant inflow of labour but no actions have been taken to accommodate these people.	• In the feasibility study, detail the facilities required for migrant labour. • Include an accompanying measure which should precede project implementation.
How has the problem of land acquisition been resolved?	• This problem has not been addressed. • Compensation and resettlement claims have not been dealt with. • Illegal squatters may be difficult to relocate.	• In the feasibility study, confirm acquisition, compensation and relocation needs and prepare an implementation timetable. • Modify or postpone the project until such issues are dealt with.
What are the opportunities for labour-based work?	• The design precludes labour-based work. • Capital-intensive maintenance is planned.	• In the feasibility study, consider the scope for labour-based work in both capital and maintenance activities.
How will the local community participate in project design?	• The local community has been excluded from project design. • There is no mechanism for local participation.	• Ensure that the project design allows for participation of the local community. • Support participation by local communities in project design.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
What technology has been identified for the project?	• The proposed technology is appropriate but is not adapted to the local conditions. For example, it depends on imported skills and equipment.	• In the feasibility study, assess the impacts of alternative technologies to gauge their cost-effectiveness. Determine accessibility to appropriate equipment and spare parts.

Key questions	Possible problems	Potential actions
How compatible are the project design standards with the types of rail traffic expected?	• The project design is not flexible enough to accommodate future traffic demand. • The project is over-sized in relation to demand.	• In the feasibility study, revise design standards to match demand and user requirements.
What is the project's maintenance plan?	• There is no maintenance plan • The maintenance plan has not been sufficiently quantified for network maintenance planning purposes.	• Do not proceed with the project until the maintenance plan has been set up and agreed. • In the feasibility study, revise the maintenance plan to include the missing elements.
What indicators and data collection system have been set up to monitor the project?	• No data collection system has been set up. • Staff do not have the required skills to operate and manage the data collection system.	• Determine indicators for monitoring progress and impact, and related data collection procedures. • Propose staff training in the feasibility study. • Consider simplifying data requirements.
What ground investigations have been carried out?	• A thorough ground investigation has not been undertaken, although the complexity of the project requires it.	• A detailed ground investigation should be undertaken as part of the feasibility study.
What is the operational plan for project implementation?	• There is no project operational plan. • The operational plan is too ambitious.	• In the feasibility study, revise the project operational plan to make it more realistic.



Action Report Form: Formulation of railway projects

During formulation, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:

Formulation of port projects

Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
How has the project context changed since the identification phase?	• Considerable time has elapsed since project identification, and significant changes have occurred at national, political and economic levels.	• Re-assess the appropriateness of the project in the feasibility study. If necessary, modify or abandon the project.
What special conditions and accompanying measures are required to support the project?	• No specific conditions and measures are established. • Specific conditions and measures have not been respected.	• Intensify dialogue with the government. • In the feasibility study, specify the timetable for implementing conditions and link it to disbursements. • Postpone or re-schedule the project until conditions are met.
DEMAND AND ECONOMIC SUSTAINABILITY		
How has traffic demand changed since the project identification?	• Demand has significantly decreased due to unforeseen changes. • Traffic well in excess of forecasts is expected due to increased activity in the economic sector(s).	• In the feasibility study, assess the future impact of these changes on infrastructure needs. Modify, postpone or abandon the project, if necessary.
What are the project benefits?	• Project appraisal is mainly based on benefits and savings which are not robust and/or appear highly optimistic. This will probably be most significant in the short term.	• Assess these benefits, in the feasibility study. The project should be modified as necessary. • Refer to the European Commission manual on Financial and Economic Analysis.
FINANCIAL SUSTAINABILITY		
What funds are available to ensure the project's sustainability?	• The ports authority has insufficient financial resources to ensure operation and maintenance of the project.	• In the feasibility study, investigate the possibility of increasing tariffs and introducing other levies. • Postpone the project and concentrate on maintenance of existing infrastructure.



Key questions	Possible problems	Potential actions
What costs are associated with the project?	• Some associated costs, such as provision for spare parts and interruptions to normal transport services during project implementation, are not included in the budget.	• Request further details of these costs in the feasibility study.
How do project costs compare with those of similar projects?	• The project cost is far higher/lower than similar projects.	• Clarify the reasons for such differences in the feasibility study. If necessary, undertake a complete re-costing or investigate alternative solutions.
In berthing projects, what are the post-project dredging costs?	• To ensure project sustainability, extensive dredging will be required after the project is implemented.	• In the feasibility study, post-project dredging responsibilities should be clearly identified, costed and assigned.
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What organization has been established for the project?	• Responsibilities for project management and maintenance are not clearly specified.	• In the feasibility study, define the role and responsibilities of all involved parties and allocate their tasks.
What institutional support is needed for the project?	• Institutional structures and staff are inefficient, which may jeopardize the project's sustainability. • Ministries still have extensive management control of transport operations.	• Required institutional changes should be agreed with the government. Changes could be included as conditionalities to the project. • Encourage contracting out services and works to the private sector.
What is the scope and cost of the technical assistance required?	• The scope of the technical assistance has been poorly identified, and the cost may be underestimated.	• Clarify the Terms of Reference for technical assistance and costs in the feasibility study, and include them in the overall project budget. • Ensure that the technical assistance includes substantial skills transfer.

Key questions	Possible problems	Potential actions
What is the scope for private sector involvement?	• There is scope for private sector involvement but the government does not want to devolve its responsibilities.	• Identify specific areas for private sector involvement and discuss with the government. If necessary, include private sector involvement as a project conditionality.
How able is the private sector to undertake the tasks required?	• The private sector does not have sufficient skills.	• In the feasibility study, structure contracts so that private sector participation is encouraged. • Detail training requirements of the private sector in the feasibility study.
How have contracts been packaged to encourage participation by the local private sector?	• Local private sector capabilities are excluded. • Proposed contract conditions make it difficult for the local private sector to participate.	• Ensure that the project design and contract arrangements accommodate local private sector participation.
How does the ports authority management need to be restructured?	• Restructuring of the ports authority's management is fundamental to project sustainability, but little or nothing has been done to achieve this.	• Agree appropriate measures with the government. In the feasibility study, establish a time scale for project implementation and link this to disbursement. • Required actions could be included as special conditions and/or accompanying measures.
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
How does the project take account of the risk of increased environmental pollution?	• Increased pollution arising from the project is not considered. • Although increased pollution risks have been identified, remedial measures are not adequate.	• In the feasibility study, describe and quantify the pollution risks and propose amelioration measures.
What are the opportunities for increased employment?	• The design excludes the possibility of local involvement. • Proposed contract conditions make it difficult for local contractors to participate.	• Ensure that the project design allows local contractor participation. • Establish contractual arrangements to secure local participation.



Key questions	Possible problems	Potential actions
How will the project respond to local community needs?	• Local needs have not been clearly ascertained. • There are no mechanisms to express local needs. • Local needs are subordinate to national requirements.	• Explicitly canvass local needs during project formulation. • Support formulation of and participation in forums to express local needs, such as discussion groups, village councils and Chambers of Commerce.
What is being done to deal with migrant labour?	• The project requires a significant inflow of labour, but no actions have been taken to accommodate these people.	• In the feasibility study, detail the facilities required for migrant labour. • Include an accompanying measure which should proceed project implementation.
How has the problem of land acquisition been resolved?	• This problem has not been addressed. • Compensation and resettlement claims have not been dealt with. • Illegal squatters may be difficult to relocate.	• In the feasibility study, confirm acquisition, compensation and relocation needs and prepare an implementation timetable. • Modify or postpone the project until such issues are dealt with.
What are the opportunities for labour-based work?	• The design precludes labour-based work. • Capital-intensive maintenance is planned.	• In the feasibility study, consider the scope for labour-based work in both capital and maintenance activities.
How will the local community participate in project design?	• The local community has been excluded from project design. • There is no mechanism for local participation.	• Ensure that the project design allows for participation by the local community. • Support the participation of local communities in project design.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
What technology has been identified for the project?	• The proposed technology is appropriate but is not adapted to local conditions. For example, it depends on imported skills and equipment.	• In the feasibility study, assess the impact of alternative technologies to gauge their cost-effectiveness. Determine accessibility to appropriate equipment and spare parts.

Key questions	Possible problems	Potential actions
How compatible are the project's design standards with the type of traffic expected?	• The project design is not flexible enough to accommodate future traffic demand. • The project is under-sized/over-sized in relation to demand.	• In the feasibility study, revise design standards to match demand and user requirements.
What is the project's maintenance plan?	• The port maintenance plan has not been sufficiently quantified for maintenance planning purposes.	• In the feasibility study, revise the maintenance plan to include the missing elements.
What indicators and data collection system have been set up to monitor the project?	• No data collection system has been specified. • Staff do not have the required skills to operate and manage the data collection system.	• Determine indicators for monitoring project progress and impact, and related data collection procedures. • Propose staff training in the feasibility study. • Consider simplifying the data requirements.
What ground investigations have been carried out?	• A thorough ground investigation has not been undertaken, although the complexity of the project requires it.	• A detailed ground investigation should be undertaken as part of the feasibility study.
What is the operational plan for project implementation?	• There is no operational plan. • The operational plan is too ambitious.	• In the feasibility study, revise the operational plan to make it more realistic.



Action Report Form: Formulation of port projects

During formulation, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:

Formulation of airport projects

Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
How has the project context changed since the identification phase?	• Considerable time has elapsed since project identification, and significant changes have occurred at national, political and economic levels.	• Re-assess the appropriateness of the project in the feasibility study. If necessary, modify or abandon the project.
What special conditions and accompanying measures are required to support the project?	• No specific conditions and measures are established. • Specific conditions and measures have not been respected.	• Intensify dialogue with the government. • In the feasibility study, specify a timetable for implementing conditions, and link it to disbursements. • Postpone or re-schedule the project until conditions are met.
DEMAND AND ECONOMIC SUSTAINABILITY		
How have demand levels changed since project identification?	• Due to unforeseen changes, demand has significantly decreased. • Traffic well in excess of forecasts is expected due to increased activity in the economic sectors.	• In the feasibility study, assess the future impact of these changes on infrastructure needs. • Modify, postpone or abandon the project, if necessary.
What are the project's economic benefits?	• Project appraisal is mainly based on benefits and savings which are not robust and/or appear highly optimistic. This will probably be most significant in the short term.	• Assess these benefits in the feasibility study. The project should be modified as necessary. • Refer to the European Commission manual on Finance and Economic Analysis.
FINANCIAL SUSTAINABILITY		
What funds are available to ensure the project's sustainability?	• The airport authority has insufficient financial resources for future operation and maintenance of the project.	• In the feasibility study, investigate increasing or introducing fees. • Postpone the project and concentrate on maintenance of existing infrastructure.



Key questions	Possible problems	Potential actions
What costs are associated with the project?	• Some associated costs, such as provision for spare parts and interruptions to normal transport services during project implementation, are not included in the budget.	• Request further details of these costs in the feasibility study.
How do project costs compare with those of similar projects?	• The project cost is far higher/lower than similar projects.	• Clarify the reasons for such differences in the feasibility study. If necessary, undertake a complete re-costing or investigate alternative solutions.
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What organization has been established for the project?	• Responsibilities for project management and maintenance are not clearly specified.	• In the feasibility study, define the role and responsibilities of all involved parties, and allocate their tasks.
What institutional support is needed for the project?	• Institutional structures and staff are inefficient, which may jeopardize the project's sustainability.	• Required institutional changes should be agreed with the government. Changes could be included as conditionalities to the project.
What is the scope and cost of the technical assistance required?	• The scope of the technical assistance has been identified and the cost is significantly underestimated.	• Clarify the Terms of Reference for technical assistance and costs in the feasibility study, and include them in the overall project budget. • Ensure that technical assistance includes substantial skills transfer.
What is the scope for private sector involvement?	• There is scope for private sector involvement but the government does not want to devolve its responsibilities.	• Identify specific areas for private sector involvement and discuss with the government. If necessary, include private sector involvement as a project conditionality.

Key questions	Possible problems	Potential actions
How able is the private sector to undertake the tasks required?	• The private sector does not have sufficient skills and resources	• In the feasibility study, structure contracts so that private sector participation is encouraged. • Detail training requirements of the private sector in the feasibility study.
How have contracts been packaged to encourage participation by the local private sector?	• Local private sector capabilities are excluded. • Proposed contract conditions make it difficult for the local private sector to participate.	• Ensure that the project design and contract arrangements accommodate local private sector participation.
How does the management of the civil aviation or airport authority need to be restructured?	• Restructuring the management of the airport authority is fundamental to project sustainability, but little or nothing has been done to achieve this.	• Agree appropriate measures with the government. In the feasibility study, establish a time scale for project implementation and link this to disbursement.
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
How does the project take account of the risk of increased environmental pollution?	• Increased pollution arising from the project is not considered. • Although increased pollution risks have been identified, remedial measures are not adequate.	• In the feasibility study, describe and quantify the pollution risks and propose amelioration measures.
What are the opportunities for increased employment?	• The design excludes the possibility of local involvement. • Proposed contract conditions make it difficult for local contractors to participate.	• Ensure that the project design allows local contractor participation. • Establish contractual arrangements to secure local participation.
How will the project respond to local community needs?	• Local needs have not been clearly ascertained. • There are no mechanisms to express local needs. • Local needs are subordinate to national requirements.	• Explicitly canvass local needs during project formulation. • Support formulation of and participation in forums to express local needs such as discussion groups, village councils and Chambers of Commerce.



Key questions	Possible problems	Potential actions
What is being done to deal with migrant labour?	• The project requires a significant inflow of labour but no actions have been taken to accommodate these people.	• In the feasibility study, detail the facilities required for migrant labour. • Include an accompanying measure which should precede project implementation.
How has the problem of land acquisition been resolved?	• This problem has not been addressed. • Compensation and resettlement claims have not been dealt with. • Illegal squatters may be difficult to relocate.	• In the feasibility study, confirm acquisition, compensation and relocation needs and prepare an implementation timetable. • Modify or postpone the project until such issues are dealt with.
What are the opportunities for labour-based work?	• The design precludes labour-based work. • Capital-intensive maintenance is planned.	• In the feasibility study, consider the scope for labour-based work in both capital and maintenance activities.
How will the local community participate in project design?	• The local community has been excluded from project design. • There is no mechanism for local participation.	• Ensure that the project design allows for participation by the local community. • Support the participation of local communities in project design.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
What technology has been identified for the project?	• The proposed technology is appropriate but is not adapted to local conditions. It depends, for example, on imported skills and equipment.	• In the feasibility study, assess the impact of alternative technologies to gauge their cost-effectiveness. Determine accessibility to appropriate equipment and spare parts.
How compatible are the project's design standards with the type of traffic using the airport?	• The project design is not flexible enough to accommodate future traffic demand. • The project design is under-sized/over-sized in relation to demand. • Proposed standards involve excessive construction costs.	• In the feasibility study, revise design standards to match demand and user requirements.

Key questions	Possible problems	Potential actions
What is the project's maintenance plan?	• There is no maintenance plan. • The airport maintenance plan has not been sufficiently quantified.	• In the feasibility study, revise the maintenance plan to include the missing elements. Consider including appropriate skills transfer in the technical assistance.
What indicators and data collection system have been set up to monitor the project?	• No indicators and data collection system have been specified. • Staff do not have the required skills to operate and manage the data collection system.	• Determine indicators for monitoring project progress and impact, and related data collection procedures. • Propose staff training in the feasibility study. • Consider simplifying the data requirements.
What ground investigations have been carried out?	• A thorough ground investigation has not been undertaken, although the complexity of the project requires it.	• A detailed ground investigation should be undertaken as part of the feasibility study.
What is the operational plan for project implementation?	• There is no operational plan. • The operational plan is too ambitious.	• In the feasibility study, revise the operational plan to make it more realistic.



Action Report Form: Formulation of airport projects

During formulation, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:

Chapter 11



Financing involves securing funding through an agreement approved by the European Commission and agreed by the European Union Member States.

11

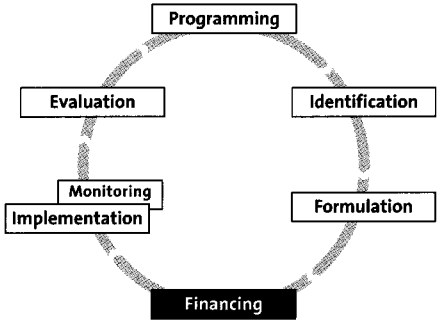
Financing

Purpose
Secure project finance.

Means
Review by the European Commission and European Union Member States.

Inputs
Financing Proposal and supporting documentation.

Results
- Financing Agreement confirming project content and modalities.
- Accompanying measures for project implementation and sustainability.



Use the guidelines to address the main issues in securing project and programme financing.
Record the problems encountered, the actions taken and the assumptions made on the Action Report Form.

Financing

Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
Have there been significant changes which affect the recommendations or decisions made in the feasibility study?	• The long time lapse between drafting the financing proposal and its presentation to Member States means that the situation affecting the project has changed significantly.	• Re-assess the appropriateness of the project. If necessary, commission a study to address the changes, then modify or abandon the project.
DEMAND AND ECONOMIC SUSTAINABILITY		
What is the project purpose?	• The project purpose is not clearly stated in the Financing Proposal.	• Clarify the document by including or updating this information.
What are the project's economic indicators?	• The economic indicators used in the economic appraisal are not clearly stated in the Financing Proposal.	• Clarify the document, and if necessary, commission a further economic appraisal.
Who are the project beneficiaries?	• Not all project beneficiaries are specified in the Financing Proposal.	• Clarify the document by including or updating this information.
FINANCIAL SUSTAINABILITY		
What is the breakdown of project costs?	• The operating and maintenance costs of infrastructure and equipment (spare parts) are not detailed.	• Complete the document as required. If necessary commission a study to establish the exact costs or to re-calculate them.
What are the conditions for funding and project implementation?	• Although specific conditionalities related to funding aspects are required, they have not been clearly established.	• Revise the document as required. If necessary, undertake discussions on how to finalize these conditionalities with the government.
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What are the institutional issues associated with the project?	• Institutional problems have been identified, but not solutions to alleviate them.	• Commission a further study to suggest solutions. • Negotiate conditionalities to the Financing Proposal.

Key questions	Possible problems	Potential actions
What procedures/frameworks are provided to encourage user participation and involvement?	• There is no facility or forum to ensure involvement by the local population, although their support is needed.	• Assess various options to establish a framework, such as surveys, promotional campaign, discussions with users. Integrate them as conditionalities in the document.
What are the tasks and responsibilities of organizations and government departments responsible for project management and maintenance?	• There is a little information on the role and duties of the responsible administrations.	• Clarify and revise the document. Integrate the required information in the Financing Proposal.
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
What are the environmental and sociocultural indicators?	• No representative environmental and sociocultural indicators or monitoring data have been specified.	• Specify indicators for inclusion in the Financing Proposal.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
What technology is proposed for the project?	• Information from the design study is not sufficient to justify the technology used.	• Revise the Financing Proposal to integrate this information. • If necessary, commission a further design study to discuss the appropriateness of the technology chosen.
What are the key aspects of project implementation?	• Not all key aspects are not documented sufficiently in the Financing Proposal.	• Integrate these elements in the Financing Proposal, including the financial risks of poor implementation.
What are the indicators?	• Insufficient representative (economic, financial, institutional, environmental and sociocultural) data are specified to monitor the project.	• Specify all indicators needed to monitor project sustainability.



Action Report Form: Financing

During financing, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:

Chapter 12



Implementation involves carrying out the project operational plan, accompanying measures and establishing monitoring systems.

12

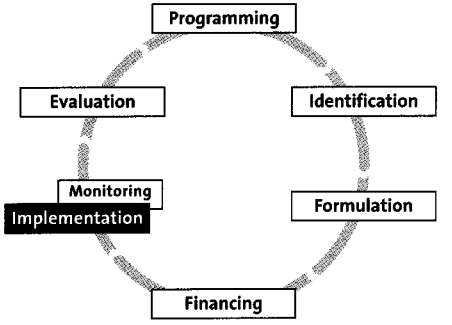
Implementation

Purpose
Achieving sustainable benefits by efficient execution, management and monitoring of the project.

Means
Project implementation by departments of the national and regional administrations assisted by consultants and contractors.

Inputs
- Project operational plan.
- Monitoring indicators.
- Deviations from the operational plan and remedial actions.
- List of accompanying measures.
- List of preconditions.

Results
- Project completed on time, cost-effectively, to approved technical standards and all actions implemented.
- Project completion report.
- Special conditions and accompanying measures carried out.
- Monitoring systems for continuous assessment of project benefits and sectoral impacts established.



Use the guidelines to address the main issues in implementing a project according to the Financing Agreement. Record the problems encountered, the actions taken and the assumptions made on the Action Report Form.



Implementation

Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
How has the project context changed since the Financing Agreement?	• The long time lapse between signing the Financing Agreement and project implementation means that the situation affecting the project has changed significantly.	• Re-assess the appropriateness of the project. If necessary, modify the project design and schedule. • If necessary, postpone or abandon the project.
DEMAND AND ECONOMIC SUSTAINABILITY		
What additional requirements have been expressed by the local population?	• The local population has expressed reasonable and justified requirements which have not been taken into account. • The local population's requirements are not feasible	• .Assess the reasons for not including these requirements. If necessary, examine whether they can still be incorporated into the project. • Explain to the local population that their requirements are not feasible and discuss alternatives.
FINANCIAL SUSTAINABILITY		
What disbursement system is used to allocate funds to contractors?	• The disbursement system is inadequate and therefore contractors are paid late.	• Identify the shortfalls of the existing system and introduce specific remedial measures.
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What special conditions and accompanying measures are required for project implementation?	• The government has only implemented a few of the special conditions and accompanying measures.	• Discuss with the government the reasons for not implementing all measures. Consider postponing or re-phasing the project.
To what extent is the government agency responsible for project implementation fulfilling the role detailed in the operational plan?	• The relevant government agency is understaffed, under-funded and/or under-motivated, and is thus not fulfilling its obligations.	• Discuss potential corrective measures with the government. Suspend the project if these are not introduced.
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
What environmental and sociocultural measures are to be be implemented?	• Unforeseen environmental and sociocultural problems have arisen during implementation.	• Assess their impact and identify potential corrective measures.

Key questions	Possible problems	Potential actions
What cross-cutting issues have been taken into account?	• Problems arise if these issues have not been taken into account, such as the negative impact on women and local employment.	• These problems should be addressed urgently to ensure project sustainability.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
How appropriate is the technology used?	• The technology is inappropriate for the local situation.	• Identify appropriate corrective actions. If necessary, suspend the project temporarily.
How appropriate is the project design?	• Part of the project design is no longer adequate or suitable.	• Revise the design as required. If necessary, suspend the project temporarily.
What are the implementation costs? How do these costs deviate from budget?	• The implementation costs are significantly higher than expected, because of internal factors such as inadequate planning, or external factors such as sudden fluctuations in local currency exchange, or climatic changes.	• Assess the extent of over-spending and introduce specific remedial measures where possible. Amend the project phasing or funding, or if necessary, abandon it.
What is the project implementation schedule?	• The project is not implemented according to schedule and there are significant delays.	• Assess the reasons for the delays and take remedial actions.
What progress and monitoring reports are required?	• Progress reports are not produced regularly. • The content of progress reports is not sufficient to monitor project implementation.	• Revise the content and frequency of these documents accordingly.
What are the results of technical assistance?	• Technical assistance is insufficient or ineffective. • Counterpart staff are not available or are not motivated.	• Identify reasons for these shortfalls, and revise the technical assistance programme as required. • Discuss this issue with the government and press for urgent corrective measures. If necessary, consider postponing or abandoning the project.



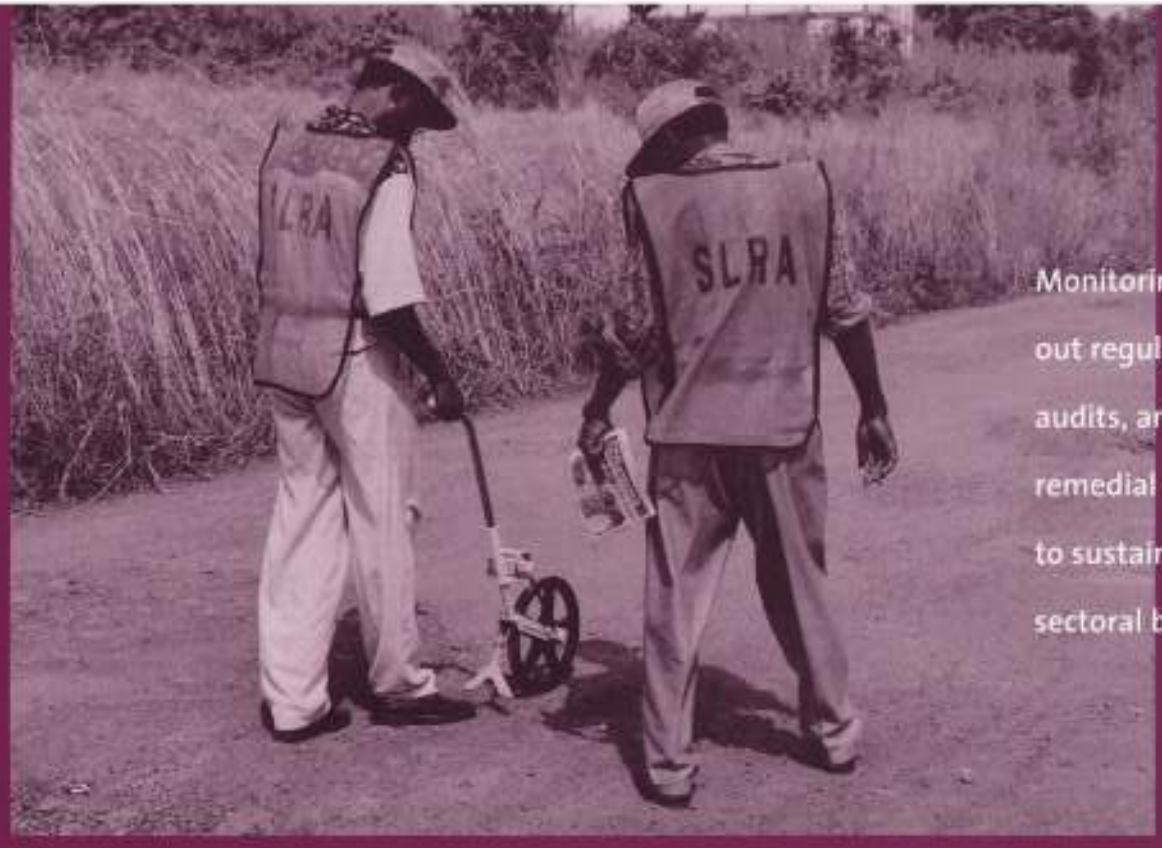
Key questions	Possible problems	Potential actions
What disruptions to normal services and operations, if any, is project implementation causing?	• Project implementation requires long interruptions to normal transport services and/or operations.	• Assess the nature of the disruption and identify remedial actions. Safety requirements during project implementation must be enforced.

Action Report Form: Implementation

During implementation, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:





Monitoring involves carrying out regular surveys and audits, and taking any remedial measures needed to sustain project and sectoral benefits.

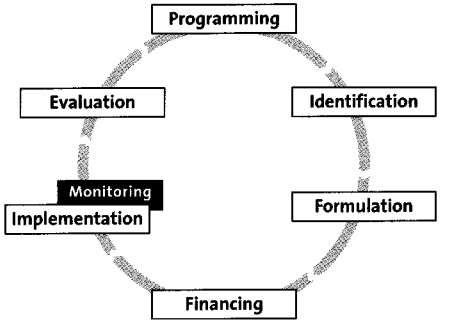
Monitoring

Purpose
Identifying remedial actions for sustainable project benefits and sectoral improvements.

Means
Applying project monitoring procedures, carrying out regular surveys, periodic technical and financial audits with assistance by project management and/or external consultants.

Inputs
- Key monitoring indicators identified in the feasibility study and described in the Financing Agreement.
- Additional indicators arising during project implementation and from the project completion report.

Results
- Scheduled monitoring reports assessing the project's economic, institutional, environmental and sociocultural results.
- Timely implementation of remedial actions.



Use the guidelines to address the main issues in identifying remedial actions for sustainable project benefits and sectoral improvements. Record the problems encountered, the actions taken and the assumptions made on the Action Report Form.

Monitoring

Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
How has the external environment changed since project implementation started?	• Significant economic, social and physical changes have occurred, such as higher/lower forecasted population growth and economic and social development.	• Assess how these changes might affect project sustainability, and identify feasible remedial actions.
DEMAND AND ECONOMIC SUSTAINABILITY		
Which of the traffic forecasts in the feasibility study have materialized?	• Traffic forecasts are significantly different because of inaccurate parameters or unexpected events, such as poor agricultural yields due to drought or disease.	• Assess the difference and draw lessons for future similar projects. • Evaluate the use of alternative forecasting techniques.
Which of the demand forecasts in the feasibility study were met?	• Demand forecasts are not met, thus significantly decreasing the project's feasibility. • Demand forecasts are too conservative and the planned project capacity is insufficient.	• Assess the reasons for these differences and draw lessons for future demand forecast methodologies.
What monitoring indicators are used to assess project sustainability?	• Monitoring indicators cannot accurately assess sustainability.	• Determine why the indicators chosen have failed and revise them immediately. • Draw lessons for future monitoring of the project.
What is the economic impact of the project on users and beneficiaries?	• The impact is significantly different from that expected.	• Assess the reasons and draw lessons for the future.
FINANCIAL SUSTAINABILITY		
How regularly are financial audits produced and analysed?	• Financial audits are sporadic and are not analysed in sufficient detail.	• Identify the reasons and potential corrective measures to ensure that findings and conclusions are fed back regularly into the management process.

Key questions	Possible problems	Potential actions
What financial indicators are used to assess project sustainability?	• Financial indicators do not cover all project aspects and/or some aspects are not covered sufficiently.	• Determine which new areas need to be monitored or areas which need more effective monitoring. Revise the monitoring format.
To what extent is revenue sufficient to ensure self-financing?	• Revenue received by the transport agency is insufficient to meet all obligations because some funds are misallocated.	• Discuss corrective institutional and financial measures with the government and draw lessons for the future.
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
What are the responsibilities of the government agency which manages the project?	• The government agency is under-performing because of insufficient competent staff and equipment shortages. • Excessive government intervention is reducing the agency's effectiveness.	• Discuss with the government and identify appropriate remedial actions.
How is this government agency performing?	• Internal inefficiencies or external political pressures make the agency ineffective.	• Assess the reasons and identify potential corrective measures.
How are the accompanying measures or special conditions of the Financing Agreement being enforced?	• Some of the accompanying measures and special conditions have not been carried out.	• Assess the impact on the project. Discuss potential sanctions and/or remedial actions with the government.
What measures have been implemented to encourage private sector involvement?	• Few such measures have been implemented.	• Assess the reasons and identify potential corrective measures.
How has the private sector performed?	• The private sector has significantly under-performed in terms of work quality, meeting deadlines and/or cost over-runs.	• Assess the reasons and identify appropriate measures for future projects.



Key questions	Possible problems	Potential actions
How is work allocated to the public and private sectors coordinated?	• Coordination is weak and unstructured.	• Assess corrective measures for future implementation and draw appropriate lessons.
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
What are the environmental impacts of the project?	• There have been unforeseen environmental impacts since project implementation. • Expected environmental impacts have not been dealt with adequately during project implementation.	• Identify ways to limit any adverse effects and implement remedial measures. Identify and quantify all forms of environmental impact.
What are the sociocultural impacts of the project?	• There have been unforeseen sociocultural impacts since project implementation. • Expected sociocultural impacts have not been dealt with adequately during project implementation	• Identify and quantify all sociocultural impacts, where possible. • Identify ways to limit any adverse effects.
How often is the impact of cross-cutting issues monitored (for example, gender and employment)?	• The monitoring indicators are inadequate and do not cover all aspects of the project.	• Assess the reasons and develop procedures to quantify such impacts.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
How appropriate is the technology used?	• The technology is too labour or too capital intensive for the local situation and maintenance is difficult to carry out.	• Establish a balance between technology and local capabilities.
How adequate are the technical design features of the project?	• Some design features are unsuitable for the project. • Major or minor design faults have emerged.	• Identify shortfalls and establish the cost of potential corrective measures. Draw lessons for similar future projects.
What measure of sustainability do the technical indicators provide?	• The technical indicators do not allow for a complete analysis of the project's sustainability.	• Identify the missing indicators, restructure the technical monitoring programme, and develop a new monitoring format.

Key questions	Possible problems	Potential actions
How often are traffic data and safety records produced and analysed?	• The economic and/or technical sustainability of the project is difficult to measure because traffic and safety data are collected and analysed irregularly.	• Ensure that these data are collected and analysed regularly, and channelled back into the management process.
What are the results of the technical assistance?	• Technical assistance was not as effective as planned. For example, the scope of assistance may have been inadequate or the recipient organization may be resistant to new ideas.	• Identify the reasons for these shortfalls and draw lessons for future technical assistance programmes.
How are operational regulations enforced? (axle road control, safety regulations, operating procedures, etc.)	• Operational regulations included in the feasibility study are not enforced effectively.	• Assess how this affects maintenance requirements. Identify corrective measures and draw lessons for the future.

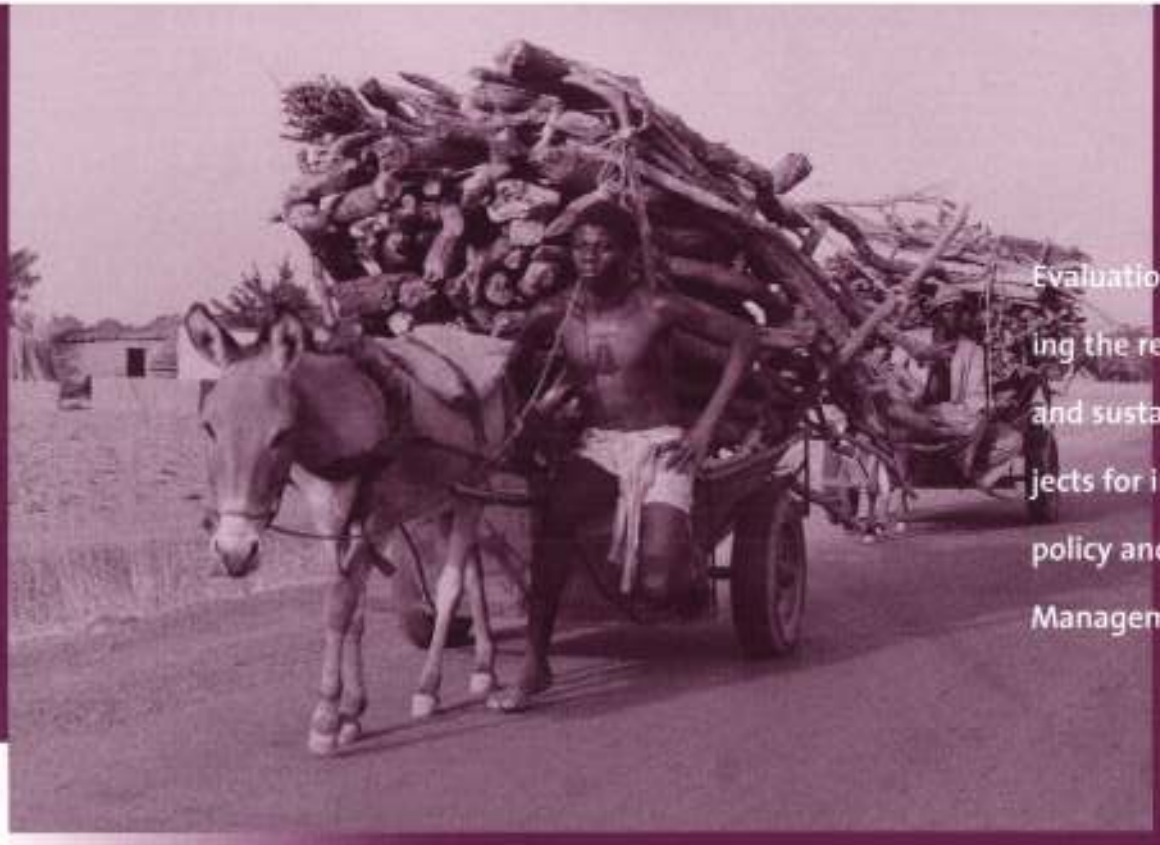


Action Report Form: Monitoring

During monitoring, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:

Chapter 13



Evaluation involves examining the relevance, feasibility and sustainability of projects for improving sectoral policy and Project Cycle Management.

13

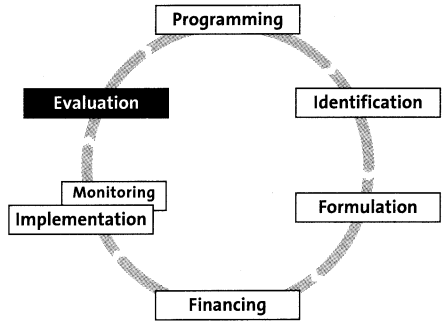
Evaluation

Purpose
Improving sectoral policy, effectiveness of present and future projects and project cycle management.

Means
An evaluation study three to five years after project completion or a mid-term review, both carried out jointly by the government and by the European Commission.

Inputs
- Framework for Terms of Reference for an evaluation study (Contact the Evaluation Unit).
- Project reports.
- Results of monitoring surveys and audits.

Results
Evaluation reports with recommended revisions for sectoral policy and project cycle management stakeholders.



Use the guidelines to address the main issues in improving sectoral policy and project cycle management. Record the problems encountered, the actions taken and the assumptions made on the Action Report Form.

Evaluation

Key questions	Possible problems	Potential actions
POLICY AND COORDINATION		
In what ways are the project results consistent with the country's transport sectoral policy?	• The project is no longer consistent with the country's transport policy. For example, new port investment has not been undertaken in a parallel study into onward transport modes.	• Specify the reasons for such deviations and draw lessons for the future.
What lessons can be drawn from the project to improve the formulation of sectoral policy?	• Mechanisms for integrating such lessons into sectoral policy are inadequate. • The government is unwilling to improve sectoral policy formulation.	• Improve procedures so that lessons learnt from projects can be integrated into sectoral policy. • Discuss the situation with the government, or abandon further investment in this sector.
How has the external environment changed since project implementation?	• Changes in the external environment have significantly affected the original project objectives.	• Assess these changes and quantify their impact on the project.
To what extent is the project consistent with other projects carried out by the European Commission and other donors?	• There are substantial inconsistencies.	• Assess the reasons, convene a multi-donor meeting and draw lessons for future donor coordination.
DEMAND AND ECONOMIC SUSTAINABILITY		
What baseline information (including traffic forecasts) has been collected in the identification phase?	• Baseline data collected in the identification phase are inadequate.	• Assess the reasons and shortfalls, and draw lessons for baseline studies for future projects.
What indicators had been identified to carry out the project evaluation?	• Poor selection of economic indicators means that the project cannot be evaluated properly.	• Identify appropriate indicators and draw lessons for future projects.
What economic benefits have accrued to users and operators?	• The economic benefits are significantly lower or higher than predicted in the feasibility study.	• Assess the major causes of these differences and draw lessons for the future, including an evaluation of alternative planning techniques.

Key questions	Possible problems	Potential actions
Who are the project beneficiaries?	• Some beneficiaries differ fundamentally from those anticipated in the feasibility study.	• Identify the real beneficiaries and the extent of the benefits. Assess the reasons for discrepancies.
FINANCIAL SUSTAINABILITY		
What financial indicators are used for the project evaluation?	• The range of financial indicators is inadequate.	• Identify a range of more suitable indicators and draw lessons for the future.
What was the budget for project implementation and maintenance?	• The project budget was significantly underestimated, with insufficient provision for maintenance.	• Assess the extent of the budgetary shortfall and draw lessons for the future project costing. • Check whether the shortage of spare parts threatens the project's sustainability and if so, determine actions to alleviate the problem.
How has the government met its financial commitment for maintenance funding?	• The government has changed its commitment to fund future maintenance requirements.	• Assess the reasons and draw lessons for future conditionalities. Re-evaluate project funding policy in the country.
What is the cost recovery programme through user charges?	• The project's financial sustainability is in jeopardy as the planned cost recovery programme has not been established	• Assess the reasons for the current situation, discuss the issue with the government, and identify the feasibility of establishing such a programme in the near future.
What revenues are generated to self-finance the managing agency?	• Self-financing of the responsible agency is not possible from current revenues due to misallocation by government and/or the agency.	• Discuss the situation with the government and jointly identify corrective institutional measures.
How has the transport agency performed financially since the project?	• Poor financial performance of the transport agency is jeopardizing the project's sustainability.	• Assess the reasons and identify corrective institutional measures.



Key questions	Possible problems	Potential actions
How often are financial and technical audits produced and analysed?	• Financial and technical audits are not regular enough for useful analysis.	• Initiate potential corrective measures. Ensure that the information is channelled back into the management process.
INSTITUTIONAL AND MANAGEMENT SUSTAINABILITY		
How has the agency responsible for project management carried out its tasks?	• The agency has not completed all the allocated tasks, and some of the tasks were carried out inefficiently.	• Assess the reasons and draw lessons for future institutional reforms.
What was the role of the agency set up for the project?	• The agency is ineffective.	• Assess the reasons and identify potential corrective measures for future projects.
What institutional measures have been implemented?	• The project's success has been affected because the agreed accompanying measures and special conditions have not been fully implementation.	• Draw lessons for future conditionalities and potential sanctions.
How were funds disbursed?	• Project funds were disbursed behind schedule and in incorrect areas.	• Determine the reasons and draw lessons for future reform of disbursement mechanisms.
What measures have been taken to encourage private sector involvement (contracting out of works, consultancy and training services and equipment hire)?	• There is little private sector involvement.	• Assess the ineffectiveness of the measures. Identify potential corrective initiatives for future projects.
How was the private sector involved in the project?	• The performance of the private sector in the project has not been assessed. • Suitable procedures to monitor private sector performance have not been established.	• Undertake an assessment based on available data. • Assess the reasons and develop appropriate formats for future monitoring of private sector performance.

Key questions	Possible problems	Potential actions
How did the private sector work alongside the public sector?	• Coordination with the public sector was weak and unstructured.	• Develop corrective measures for future implementation.
How was the local population involved in project formulation?	• There was little participation.	• Assess the institutional shortcomings and draw lessons for future institutional reforms.
ENVIRONMENTAL AND SOCIOCULTURAL SUSTAINABILITY		
What were the environmental impacts of the project?	• There are significant deviations from the original appraisal.	• Assess the major causes of these differences and draw lessons for future projects.
What were the sociocultural impacts of the project?	• There have been unforeseen social changes since the project's implementation. • Expected sociocultural impacts have not been adequately dealt with since implementation.	• Assess these impacts and draw lessons for future projects.
What were the impacts on cross-cutting issues (for example, gender and employment)?	• The project's cross-cutting issues have not been evaluated. • Evaluation of cross-cutting issues missed many important points.	• Assess the reasons and develop procedures to quantify such impacts in the future. • Assess the shortfalls of the evaluation performed. Commission a further evaluation if necessary, and draw lessons for the future.
REGULATORY AND OPERATIONAL SUSTAINABILITY		
What is the traffic demand compared with the initial traffic forecasts?	• The traffic situation is markedly different from that forecast in the feasibility study.	• Identify potential reasons and draw lessons for the future.
How appropriate was the technology for the project?	• The technology used was too capital-intensive or over-specified. The local environment prevented efficient utilization.	• Assess the reasons and draw lessons for future technological choices.
How adequate are the project design features?	• Certain design features are inadequate or over-specified in relation to the demand for the project.	• Assess the reasons and draw lessons for future prefeasibility and feasibility studies.



Key questions	Possible problems	Potential actions
What measure of sustainability do the technical indicators provide?	• The technical indicators do not allow for a complete analysis of the project's sustainability.	• Identify the missing indicators, restructure the technical monitoring programme, and develop a new monitoring format.
How often are monitoring reports produced and what is their scope?	• Monitoring reports are produced sporadically and to a very low standard.	• Assess the quality and shortcomings of the existing monitoring reports. Identify corrective measures for future project monitoring reports.
What was the initial maintenance plan?	• The maintenance plan is inadequate and significantly under-estimated/under-funded.	• Identify corrective measures to improve current maintenance programmes. Draw lessons for developing future maintenance plans.
How was the project implemented in relation to the operational plan?	• There were significant deviations from the operational plan during project implementation.	• Assess the reasons and draw lessons for developing future operational plans in the future.
What are the results of the technical assistance?	• Technical assistance was not as effective as planned. For example, the scope of assistance may have been inadequate or the recipient organization was resistant to new ideas.	• Identify the reasons for these shortfalls and draw lessons for future technical assistance programmes.
How are operational regulations enforced?	• Operational regulations included in the feasibility study are not enforced effectively.	• Assess how this affects maintenance requirements. Identify corrective measures and draw the lessons for the future.

Action Report Form: Evaluation

During evaluation, the following problems have been encountered and the corresponding actions taken on the basis of the stated assumptions:

Problem(s) encountered	Action(s) taken	Assumptions
Policy and coordination		
Demand and economic sustainability		
Financial sustainability		
Institutional and management sustainability		
Environmental and sociocultural sustainability		
Regulatory and operational sustainability		
	Date:	Signature:



Part III

Tools of a sectoral approach

Chapter 14

14

A transport sectoral policy study will ensure greater coordination between stakeholders, identification of policy issues, appraisal of alternative options and adoption of the preferred solution. This provides a firm foundation for developing action plans in the transport modes of roads, railways, ports and airports.

Guide for preparing Terms of Reference

This standard format is for use in preparing Terms of Reference for a transport sectoral policy study. It applies the logical framework of Project Cycle Management, and provides an outline of the approach and issues for study. For more information and understanding of the issues, see Part II of the guidelines – Towards sustainable transport infrastructure: a sectoral approach in practice.

Use this standard format to prepare detailed Terms of Reference for individual studies, in each case filling in and describing the specific requirements. The text in the shaded boxes will assist in identifying the individual requirements for the study. It should be stressed that clear formulation will help to ensure that all relevant issues are considered, thus enabling informed decision making.



Standard format for Terms of Reference

Transport sectoral policy study

To be drawn up by the recipient country/regional institution requesting the study

A. Study background

The National/Regional Indicative Programme (NIP/RIP) signed by the Government of [. . . . . .] and the European Commission in [. . . . . /. . . . . .] reflects the European Commission's willingness to support the transport sector in [. . . . . .] region of the country, as a means to develop the economic and social potential of [. . . . . .] region.

Within the framework of this Indicative Programme, the European Commission has received a request from the National Authorizing Officer to assist in developing a coherent transport sectoral policy.

The study is required to create a sound sectoral policy to enable the transport sector to respond to economic and social needs coherent with the country's macro-economic environment.

This chapter should contain more detailed information or reference to relevant documents such as studies and evaluation reports.

B. Study objectives

The study will provide the decision makers in the [. . . . . .] Government and the European Commission with sufficient information to justify the acceptance, modification or rejection of the proposed sectoral policy.

C. Study results

The study will deliver the following:

- an analysis of the role the transport sector and identify its main features in the economic and social development of the country;
- an analysis of the relevance of the proposed sectoral policy and identification of other possible options to address existing economic and social transport problems;
- an analysis of the technical, economic and financial, institutional and management, environmental and sociocultural feasibility of the proposed sectoral policy and of other options;
- the preferred sectoral policy approach, detailing the expected benefits to economic and social development, the results to be delivered to the users and beneficiaries, the activities to deliver the policy, resources required, timing/phasing, estimated costs and a logical planning framework;
- an assessment of the potential sustainability of the results of the sectoral policy, for example, budgetary resources, institutional capability and capacity, after policy identification;
- recommendations for the next steps and further actions for sectoral policy formulation [possibly, detailed Terms of Reference for the formulation of action plans].

D. Issues to be studied

This chapter of the Terms of Reference should contain information about the broad issues or gaps in present knowledge to be studied. The specific problems related to the proposed sectoral policy should be inserted in this section. Use the Programming Section and parts of the Identification Section in Part II of the guidelines: Towards sustainable transport infrastructure to identify the issues related to national development policy issues, neighbouring country transport policies, intermodal transport, maintenance policies, economic and social sector transport demands and its sustainability, sector financing of development and recurrent expenditure, government intervention in transport, user involvement, private sector role and responsibilities, environmental and sociocultural issues of employment and legal frameworks for regulations and their enforcement, safety and research.

The main issues to be studied are outlined below. Detailed issues for analysis are presented in Appendix I: Format for transport sectoral policy study report.



(i) **RELEVANCE** of a sectoral policy, coherent with the country's macro-economic environment, and satisfying the economic and social needs.

The consultants will study the extent to which the proposed sectoral policy:

- fits into the country's macro-economic policies;
- is coherent with the overall framework of national development objectives and the economic and social development policies of the relevant ministries of the Government of [. . . . . .];
- responds to the demands of the economic and social sectors as expressed by [key user or producer organizations];
- takes account of the nature, number and type of beneficiaries the proposed sectoral policy affects;
- takes account of organizations and agencies affected by or involved in the proposed sectoral policy;
- takes account of major travel and transport problems of the beneficiaries and other parties, the casual interrelationships of these problems, and the intersectoral linkages;
- takes account of other interventions or priorities of ministries, agencies and donors;
- takes account of information from earlier studies and evaluations.

This information will be presented in chapter 2 (background) of the transport sectoral policy study report (see Appendix I).

(ii) **FEASIBILITY** of the proposed sectoral policy as determined by an analysis of the **OPTIONS** consistent with the economic and financial, institutional and management, environmental and sociocultural impacts. This analysis is presented in technical appendix IV.

For a comparison of these options, the consultants will develop a recommendation which is structured as follows:

- **OVERALL OBJECTIVES:** Why is the sectoral policy important to the users and beneficiaries, the region and the government? What is the desired economic and social development?
- **PROJECT PURPOSE:** Why do the users and beneficiaries need the sectoral policy?
- **PROJECT RESULTS:** What services will the sectoral policy deliver to the users and beneficiaries, including any external services, classified as **ASSUMPTIONS**, which are required to achieve the project purpose?
- **PROJECT ACTIVITIES:** An indication of the activities and associated **ASSUMPTIONS** necessary to achieve the results.

The project purpose and results should be specified by indicators, and activities should be quantified wherever possible.

This information will be presented in chapter 3 (intervention) and chapter 4 (assumptions) of the report (see Appendix I).

(iii) **PRECONDITIONS** necessary for the project activities to be initiated, an initial estimate of costs, and any possible project phasing and organization.

This information will be presented in chapter 5 (implementation) of the report (see Appendix I).

(iv) **SUSTAINABILITY** of the proposed sectoral policy as determined by an assessment of the key sustainability factors listed in Part II of the guidelines: Towards sustainable transport infrastructure. These main factors are policy and coordination, demand and economic sustainability, financial sustainability, institutional and management sustainability, environmental and sociocultural sustainability, and regulatory and operational sustainability.

This information will be presented in chapter 6 (factors ensuring sustainability) of the report (see Appendix I).

These lists of issues are not exhaustive. The consultants are required to use their professional experience to review and bring to the attention of the Government and European Commission all relevant factors.

E. Work plan

This chapter suggests an approach for the study, and key resource persons and organizations to be consulted. The consultants may propose alternative approaches to collecting information and carrying out the study.

On the basis of the proposed time schedule outlined in this Terms of Reference, the consultants will prepare a work plan for the study and present this in their offer. The work plan should set out the consultants' approach to the following activities:



- fact finding/data collection/surveys;
- identification of possible options for the proposed sectoral policy;
- analysis of options;
- a briefing report summarizing the analysis of the options;
- consultation meetings with decision makers/stakeholders to identify the preferred solution;
- preparation of the draft and final transport sectoral policy study report.

F. Expertise required

This chapter specifies the expertise (qualifications, experience) required for each person assigned to the study. Sectoral policy studies require multidisciplinary analysis at sectoral and intersectoral levels. The consultants should endeavour to provide the range of expertise needed to address the issues.

For each expert, a curriculum vitae should be submitted which does not exceed four pages.

G. Reporting

This chapter specifies the types of reports required, language, dates of submission, number of copies and recipients. The report format for a transport sectoral policy study is presented in Appendix I.

The consultants will present the briefing report (10–15 pages) within [. . . .] weeks. This report will set out the options in sufficient detail to enable an informed decision to be made on the preferred option.

The conclusions of the study should be presented in the report format set out in Appendix I. The underlying analysis is to be presented in the appendices of the report.

A draft sectoral policy report in [. . . .] copies will be presented to [. . . . .] for comments by [date]. Within [. . . .] weeks, comments on the draft sectoral policy study report will be received from: [list of authorities].

The consultants will take account of these comments in preparing the final sectoral policy report (30–40 pages excluding appendices). The reports will be in the [. . . . . .] language and [. . . . .] copies submitted by [date].

H. Time schedule

A time schedule should be prepared for each of the components listed in Chapter E and the reporting requirements in Chapter G.

The consultants should respond to this timetable in their offer.

I. Assistance to the consultants by the Contracting Authority

This chapter specifies assistance the Contracting Authority makes available to the consultants including data, documents, offices, transport, counterpart staff, facilitation of the entry and exit of expatriate personnel and any study equipment required.

The Contracting Authority will make available the following information and facilities to the consultants' staff:

- all relevant reports, documents, maps and data;
- where available, office space and furniture and agreement on access to computer and communication facilities;
- where available, the use of vehicles and drivers;
- counterpart staff.

The Contracting Authority will facilitate:

- the issue of entry and exit visas for the consultants' expatriate staff;
- issue of any permits required for the consultants' staff to carry out their duties within the country;
- the import and export of personal belongings of the consultants' expatriate staff during the execution of the contract, and of equipment for the study in accordance with the provisions of the Lomé Convention or similar agreements.



Appendix I
Format for transport sectoral policy study report

Maximum length excluding appendices 30–40 pages

The report must be organized using the headings (chapters, sections and subsections) given below. Under each heading, a list of key words and explanatory notes is given to indicate the topics to be handled in that part of the report. These key words and explanatory statements refer to the main issues considered in Part II of the guidelines: Towards sustainable transport infrastructure. It is essential, therefore, to use these guidelines in order to gain a full understanding of the reporting requirements.

The following text appears on the inside front cover of the report: *"This report is financed by the [European Development Fund] and is presented by the [name of consultant] for the Government of [. . . . . .] and the European Commission. It does not necessarily reflect the opinion of the Government or the European Commission."*

1. Summary

2. Background

2.1 Government/sectoral policy

Macro-economic policies · taxation and budgetary criteria applied to the transport sector · commitments to regional and international transport agreements · national transport objectives · intermodal operations and coordination · operation and maintenance policies · donor policies.

2.2 Features of the sector

Infrastructure

– *Roads:* network · type and condition · traffic flows.
– *Railways:* network · type, condition and capacity · passenger and freight traffic.
– *Ports:* port capacities (berths, depth, etc.) · trade volumes · marine equipment · tugs · launches · dredgers, etc. · shore-based equipment cranes · container handling equipment · transit facilities · general storage.
– *Airports:* network · type · condition and capacity · passenger and freight traffic and aircraft fleet.

Services

– *Roads:* types of road vehicles · size and distribution of freight and passenger vehicles · passengers and tonnage transported · employment in transport · public and private operations · access to vehicles, spare part and fuel.
– *Railways:* type and condition of rolling stock · locomotives and wagons · passenger and tonnage transported · private sector operations · non-railway activities · customs and immigration services.
– *Ports:* vessels categories (size, tonnage, goods carried) · government ownership · passengers and goods carried · stevedoring · freight forwarding and handling · customs and immigration · police and security arrangements · industrial and tax-free zones · access to spares, maintenance facilities (national and regional).
– *Airports:* type and condition of aircraft · passengers and goods carried.

Institutions

– *Roads:* road agencies · public and private companies · transit agreements · government involvement and extent of competition · employment · private sector participation.
– *Railways:* ownership · degree of commercialization · unions · employment.
– *Ports:* ownership · degree of commercialization · unions · employment · licensing and registration of vessels · bilateral and multilateral agreements.
– *Airports:* ownership · government involvement · management responsibilities · international agreements · regulation and licensing · employment · private sector operations.

Finance

– *Roads:* budgetary resources · fuel taxation · dedicated levies (road fund) · passenger and goods vehicle licences · transit licences ·



financing strategies · development and maintenance budgeting.
– *Railways:* budgetary resources · passenger fares and freight tariffs · contract rates · government subsidies · maintenance financing strategy.
– *Ports:* budgetary resources · port tariffs · user charges and their application.
– *Airports:* budgetary and user charges revenue · maintenance financing strategy · concessionaire revenues.

Operation and Regulation

– *Roads:* axle load control · safety · maintenance by private and public sector.
– *Railways:* wagon load control · signalling · safety · maintenance practices · locomotive and wagon availability.
– *Ports:* safety · aids to navigation · equipment maintenance by public and private sector · waiting time for vessels · vessel turn around time · goods clearance through ports.
– *Airports:* safety · aids to navigation · equipment maintenance by public and private sector.

Research

For all transport modes, the degree of basic research in the sector and applied research to improve transport efficiency and investments.

2.3 Beneficiaries and parties involved

Economic activity or groups benefiting from the proposed sectoral policy and/or users of transport networks · responsible ministries · parastatals · private sector organizations · user representation on government boards · user organizations and groups.

2.4 Problems to be addressed

Problems of users and beneficiaries of the transport sector and addressed by the sectoral policy.
Analysis/review of problems described in Chapter D: Issues to be studied of this Terms of Reference regarding:

- *policy and coordination* issues described in Section 2.1;
- *demand* for transport investment in economic and social sectors including any regional aspects;
- *sustainability* of the sector in *economic and financial* (structural adjustment impact, transport sector financing, sector operating and maintenance budget and revenues); *institutional and management* (institutional structure and responsibility, maintenance responsibility, staff policies, user involvement, commercialization, use of the private sector); *environmental and sociocultural* (potential impacts, gender and employment issues, land use) and *regulatory*

and operational (safety and vehicle load controls, alternative technologies, standards, management information systems) as described by the main features in Section 2.2.

2.5 Other interventions

Relevant policy interventions by the Government, the European Commission, other donors in the economic or social sectors.

2.6 Documentation available

Key documents for the study such as studies and evaluation reports.

3. Intervention

This chapter contains the justification of the selected policy with reference to the analysis in technical appendix IV.

3.1 Overall objectives

Why is the sectoral policy important to the users, beneficiaries and the government?

3.2 Project purpose

Why do the users and beneficiaries need the sectoral policy?

3.3 Project results

What services will be the sectoral policy deliver to the users and beneficiaries?

3.4 Project activities

What will be done?

4. Assumptions

4.1 Assumptions at different levels

Actions by other agencies required to support achievement of the project activities, results and purpose.

4.2 Risks and flexibility

Analysis of non-compliance with critical assumptions that could jeopardize the project and the extent to which these risks have been taken into account.



5. Implementation

5.1 Physical and non-physical means

Description of any complementary analysis, research or studies, actions necessary to implement the policy, equipment, technical assistance, monitoring and evaluation.

5.2 Organization and implementation procedures

Choice of implementation agency and initial assignment of responsibilities and definition of procedures.

5.3 Time schedule

Expected project duration and any phasing at this stage.

5.4 Cost estimate and financing plan

Costs by component and input, in foreign exchange and local currency, indicating where possible the financing source.

5.5 Special conditions and accompanying measures taken by the Government

Actions for government agencies involved including the private sector, possibly even prior to any complementary or follow-up actions.

6. Factors ensuring sustainability

6.1 Policy support and coordination

The extent to which the implementation of existing policy outside the transport sector requires modification or additional policy measures needed at a national and/or regional level.

6.2 Regulatory and operational, including appropriate technology

How the sectoral policy deals with the legal and enforcement aspects of regulations on safety and operational control. The way in which the policy adopts technology, standards, local materials, skills, labour-based methods appropriate to the country, and uses the physical and financial resources of the private sector.

6.3 Environmental protection

The extent to which the policy ameliorates impacts on people, land acquisition and use, water, air, noise, flora and fauna and cultural heritage; and is consistent with national and/or international environmental standards and practices. Refer to the European Commission manual on Environmental Impact Assessment.

6.4 Sociocultural aspects/women in development

The degree of consistency with present sociocultural norms and practices. The response to the needs of the local community and increased employment opportunities. Refer to the European Commission manuals on Women in Development and on Employment.

6.5 Institutional and management capacity, public and private

The extent to which roles of government and the private sector are integrated. The extent to which government draws upon the skills and resources of the private sector, for example, contracting out works and services. How the sectoral policy develops the domestic transport sector.

6.6 Demand, economic and financial analysis

The extent to which economic and financial criteria influence decision making on transport investments. How the policy deals with development and recurrent financing of infrastructure and services. The source of financial resources. Measures for securing revenue for maintenance. The extent to which the transport sector or users are subsidized and how subsidies are financed. Refer to the European Commission manual on Financial and Economic Analysis.

7. Monitoring and evaluation

7.1 Monitoring indicators

Identification of key indicators and systems for monitoring project progress, assumptions, sustainability and impact. Assignment of responsibility to government or agencies involved, or by contracting out to the private sector.

7.2 Reviews/evaluations

Schedules of project reviews and evaluation.

8. Conclusions and proposals

Technical appendices

I. Logical framework planning matrix of proposed sectoral policy – intervention logic, indicators, assumptions and preconditions.
II. Map of country showing principal features of the transport sector.
III. Analysis of the relevance of the sectoral policy with the final conclusions also presented in chapter 2.



IV. Analysis of the policy options incorporating feasibility and sustainability, and logical framework planning matrices with the preferred solution presented in chapters 3, 4 & 6.
V. Other technical appendices, if any.
VI. Terms of Reference.
VII. Consultants' comments on the Terms of Reference.

Administrative appendices

I. Study methodology/work plan (2–4 pages).
II. Itinerary (1–2 pages).
III. List of persons/organizations consulted (1–2 pages).
IV. Literature and documentation consulted (1–2 pages).
V. Curricula vitae of the consultants (1 page per person).

Chapter 15

15

A prefeasibility study is required in the identification phase of the project cycle to ensure all problems are identified, alternative solutions are appraised and the preferred solution meets the sustainability criteria.

Guide for preparing Terms of Reference

This standard format is for use in preparing Terms of Reference for a transport prefeasibility study. It applies the logical framework of Project Cycle Management, and provides an outline of the approach and issues for study. For more information and understanding of the issues, see Part II of the guidelines – Towards sustainable transport infrastructure: a sectoral approach in practice.

Use this standard format to prepare detailed Terms of Reference for individual studies, in each case filling in and describing the specific requirements. The text in the shaded boxes will assist in identifying the individual requirements for the study. It should be stressed that clear formulation will help to ensure that all relevant issues are considered, thus enabling informed decision making.



Standard format for Terms of Reference

Prefeasibility study

To be drawn up by the recipient government/regional institution requesting the study

A. Study background

The National Indicative Programme signed by [. . . . . .] Government and the European Commission in [. . . . . 19. . . .] reflects the European Commission's willingness to support the transport sector in [. . . . .] region of the country, as a means to developing the economic and social potential of [. . . . . .] region.

Within the framework of this Indicative Programme, the European Commission has received a request from the National Authorizing Officer to [describe the proposed transport intervention].

This chapter should contain more detailed information or reference to the relevant documents such as studies and evaluation reports.

B. Study objective

The study will provide the decision makers in the [. . . . . .] Government and the European Commission with sufficient information to justify acceptance, modification or rejection of the proposed [transport intervention] for further formulation.

C. Study results

The study will deliver the following:

- an analysis of the relevance of the proposed [transport intervention] and identification of possible options to address the existing economic or social transport problems;

- an analysis of the proposed options based on preliminary designs of technical, economic and financial, institutional and management, environmental and sociocultural aspects;
- the selection of the preferred option, detailing the expected benefits to the users and beneficiaries within the project's lifetime, a preliminary indication of the project activities, resources required, timing/phasing and estimated costs, and a preliminary logical framework;
- an assessment of the potential sustainability of the project results;
- an analysis of the role the proposed [transport intervention] in the economic and social development of [country . . . . . .];
- recommendations for the following steps and further actions for project formulation [possibly, detailed Terms of Reference for the feasibility study incorporating a draft financing proposal].

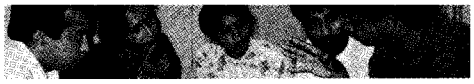
D. Issues to be studied

This chapter of the Terms of Reference should contain information about the broad issues or gaps in present knowledge to be studied. The specific problems related to the proposed transport intervention should, therefore, be inserted here. Use the Identification Section in Part II of the guidelines: Towards sustainable transport infrastructure to identify the issues related to sectoral policy, network planning, intermodal and regional issues, transport demands of the economic and social sectors, alternative solutions, sector financing, finance generation, maintenance financing, institutional management, user and private sector involvement, environment and sociocultural and technological problems, safety and regulatory systems.

The main issues to be studied are outlined below. Detailed issues for analysis are presented in Appendix I: Format for prefeasibility study report.

(i) **Relevance** of a possible intervention coherent with the country's macro-economic environment and satisfying the economic or social needs.

The consultants will study:
- how the possible options respond to the demands of the economic and social sectors as expressed by [key user or producer organizations];



- how the possible options are coherent with the overall framework of national development objectives, and the economic and social development policies of the relevant ministries of the Government of [. . . . . .];
- the nature, number and type of beneficiaries the possible options potentially affect;
- all organizations and agencies affected by or involved in the possible options and the intended improvement of the social and economic situation;
- all major problems experienced by the beneficiaries and other parties involved, the causal interrelationships of these problems, and the intersectoral linkages;
- other interventions or priorities of ministries, agencies and donors that may affect or be affected by the possible options;
- information from previous studies and evaluations relevant to the possible options.

This information is to be presented in chapter 2 (background) of the prefeasibility study report (see Appendix I).

(ii) **FEASIBILITY**, based on preliminary designs, of the possible options determined by an analysis of technical options consistent with the economic and financial, institutional and management, environmental and sociocultural aspects. This analysis is presented in technical appendix IV.

From a comparison of these options, the consultants will prepare a **RECOMMENDATION** for the project to be structured as follows:

- **OVERALL OBJECTIVES:** Why is the project important to the users and beneficiaries, the region and the government? What is the desired economic and social development?
- **PROJECT PURPOSE:** Why do the users and beneficiaries need the project?
- **PROJECT RESULTS:** What services will the project deliver to the users and beneficiaries, including external services, classified as **ASSUMPTIONS**, which are required to achieve the project purpose?
- **PROJECT ACTIVITIES:** An indication of the activities and associated **ASSUMPTIONS** for achieving the project results.

The project purpose and results should have preliminary indicators, and activities should be quantified wherever possible.

This information is to be presented in chapter 3 (intervention) and chapter 4 (assumptions) of the report (see Appendix I).

(iii) A preliminary indication of any **PRECONDITIONS** as well as an initial cost estimate, and possible project phasing and organization.

This information is to be presented in chapter 5 (implementation) of the report (see Appendix I).

(iv) Potential **SUSTAINABILITY** of the proposed project as determined by an assessment of the key sustainability factors listed in Part II of the guidelines: Towards sustainable transport infrastructure. The main factors are policy and coordination, demand and economic sustainability, financial sustainability, institutional and management sustainability, environmental and sociocultural sustainability, and regulatory and operational sustainability.

This information is to be presented in chapter 6 (factors ensuring sustainability) of the report (see Appendix 1).

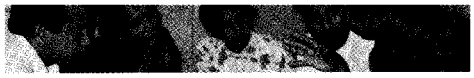
These lists of issues are not exhaustive. The consultants are required to use their professional experience to review and bring to the attention of the Government and European Commission all relevant factors.

E. Work plan

This chapter sets out the approach for the study, and key resource persons and organizations to be consulted. The consultants may propose alternative approaches to collecting information and to carrying out the study.

On the basis of the proposed time schedule outlined in this Terms of Reference, the consultants will prepare a work plan and include this in their offer. The work plan should set out the consultants' approach to the following activities:

- fact finding/data collection/surveys;
- identification of possible options for the proposed transport intervention;
- analysis of options;
- a briefing report summarizing the analysis of the options;
- consultation meetings with decision makers to identify the preferred option;
- preparation of the draft and final prefeasibility study report.



F. Expertise required

This chapter specifies the expertise (qualifications, experience) required for each person assigned to the study.

Prefeasibility studies require multidisciplinary sector and intersectoral analysis. The consultants should endeavour to provide the range of expertise needed to address the issues.

For each expert, a curriculum vitae must be submitted which does not exceed four pages.

G. Reporting

This chapter specifies the types of reports required, language, dates of submission, number of copies and recipients. The format for a prefeasibility study report is presented in Appendix I.

The consultants will present a briefing report (10–15 pages) within [. . . .] weeks. This report will set out the various options in sufficient detail to enable an informed decision to be made on the preferred option.

The study conclusions should be presented in the prefeasibility study report which must be presented in the format given in Appendix 1. The underlying analysis is to be presented in appendices to this report.

A draft prefeasibility study report in [. . . .] copies is to be presented to [. . . . . .] for comment by [date]. Within [. . . .] weeks, comment on the draft prefeasibility study report will be received from: [list the authorities].

The consultants will take account of these comments in preparing the final prefeasibility study report (30–40 pages excluding appendices). The report will be in the [. . . . . .] language, and [. . . .] copies will be submitted by [date].

H. Time schedule

A time schedule should be prepared for the various components listed in Chapter E and the reporting requirements in Chapter G.

The consultants should respond to this timetable in their offer.

I. Assistance to the consultants by the Contracting Authority

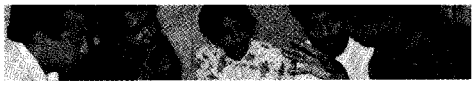
This chapter specifies assistance the Contracting Authority makes available to the consultants including data, documents, offices, transport, counterpart staff, facilitation of the entry and exit of expatriate personnel and any study equipment.

The Contracting Authority will make available the following information and facilities to the consultants' staff:

- all relevant reports, documents, maps and data;
- where available, office space and furniture and agreement on access to computer and communication facilities;
- where available, the use of vehicles and drivers;
- counterpart staff.

The Contracting Authority will facilitate:

- the issue of entry and exit visas for the consultants' expatriate staff;
- issue of any permits required for the consultants' staff to carry out their duties within the country;
- the import and export of personal belongings of the consultants' expatriate staff during the execution of the contract, and of equipment for the study in accordance with the provisions of the Lomé Convention or similar agreements.



Appendix I
Format for prefeasibility study report

Maximum length excluding appendices 30–40 pages

The report must be organized using the headings (chapters, sections and subsections) given below. Under each heading, a list of key words and explanatory notes is given to indicate the topics to be handled in that part of the report. These key words and explanatory statements refer to the main issues considered in Part II of the guidelines: Towards sustainable transport infrastructure. It is essential, therefore, to use these guidelines in order to gain a full understanding of the reporting requirements.

1. Summary

2. Background

2.1 Government/sectoral policy

National transport plan · sectoral plan · maintenance policy · transport chain · intermodal linkages · neighbouring countries' policies · regional regulations · transit agreements · donor policies.

2.2 Features of the sector

Traffic flows · passenger and goods flows · vehicle population · transport budget · sectoral budget · maintenance revenues · foreign exchange earnings and needs · growth · user charges · tariffs · employment · degree of political sectoral independence · condition of networks · transport services.

2.3 Beneficiaries and parties involved

Economic activity or groups benefiting from the proposed project and/or users of transport networks · responsible ministries · parastatals · private sector organizations · user representation on government boards · user organizations and groups.

2.4 Problems to be addressed

Problems of users and beneficiaries of the transport sector and addressed by the project.

Analysis/review of problems described in the Terms of Reference, Chapter D: Issues to be studied:

- *policy and coordination* issues described in Section 2.1;
- *demand* for transport investment in economic and social sectors including any regional aspects;
- *alternative modal and intermodal solutions*;
- the sustainability of the sector in *economic and financial* (structural adjustment impact, transport sector financing, sector operating and maintenance budget and revenues); *institutional and management* (institutional structure and responsibility, maintenance responsibility, staff policies, user involvement, commercialization, use of the private sector), *environmental and sociocultural* (potential impacts, gender and employment issues, land use), and *regulatory and operational* (safety and vehicle load controls, alternative technologies, standards, management information systems).

2.5 Other interventions

Relevant interventions by the Government, the European Commission, other donors in the economic or social sectors and transport sector served by the proposed project.

2.6 Documentation available

Key documents for the study such as studies and evaluation reports.

3. Intervention

This chapter contains the justification of the selected option with reference to the analysis in technical appendix IV.

3.1 Overall objectives

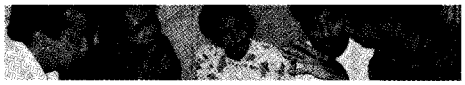
Why is the project important to the users, beneficiaries and the government?

3.2 Project purpose

Why do the users and beneficiaries need the project?

3.3 Project results

What services will the project deliver to the users and beneficiaries?



3.4 Project activities
What will be done?

4. Assumptions

4.1 Assumptions at different levels
Actions by other agencies required to support achievement of the project activities, results and purpose.

4.2 Risks and flexibility
Capacity of project to overcome problems arising from non-compliance of crucial assumptions that could jeopardize the project, and the extent to which these risks have been taken into account.

5. Implementation

This chapter contains preliminary information on the project implementation. Further information will be provided in the feasibility study during the formulation phase.

5.1 Physical and non-physical means
Preliminary indication of physical works, equipment, supervision, technical assistance, policy or technical studies, monitoring and evaluation.

5.2 Organization and implementation procedures
Choice of implementation agency and initial assignment of responsibilities and definition of procedures.

5.3 Time schedule
Expected project duration and phasing.

5.4 Cost estimate and financing plan
Preliminary costs by component and input, in foreign exchange and local currency, indicating financing source where possible.

5.5 Special conditions and accompanying measures taken by the Government
Preliminary actions for government and parties involved including the private sector, possibly even prior to launching the feasibility study.

6. Factors ensuring sustainability

6.1 Policy support and coordination

To what extent does implementation of existing policy require modification or additional policy measures at a national and/or regional level.

6.2 Regulatory and operational including appropriate technology

The degree of enforcement of safety and operational control regulations. To what extent do technology and the standards adopted use local materials and skills, and physical and financial resources of the private sector.

6.3 Environmental protection

The extent to which the project ameliorates impacts on people, land use, water, air, noise, flora and fauna and cultural heritage and is consistent with environmental standards and practices. Refer to the European Commission manual on Environmental Impact Assessment.

6.4 Sociocultural aspects/women in development

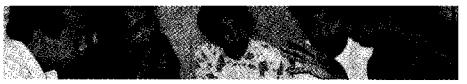
The degree of consistency with present sociocultural standards and practices. Refer to the European Commission manuals on Women in Development and on Employment.

6.5 Institutional and management capacity, public and private

The extent to which institutions fulfil their responsibilities and manage networks efficiently, by adopting business practices and by involving the private sector.

6.6 Demand, economic and financial analysis

The security of increased trade and traffic flows, preliminary estimates of benefits expressed in decision criteria and results of sensitivity tests. Refer to the European Commission manual on Financial and Economic Analysis. The security of increased financial benefits to the transport sector and similar financial decision criteria, including cost recovery measures, allocation of revenue to maintenance and operation and future commitments, and financial and technical audits.



7. Monitoring and evaluation

This chapter will contain preliminary information only. Further information will be provided by the feasibility study during the formulation phase.

7.1 Monitoring indicators

Initial identification of key indicators for monitoring project progress, results, activities and assumptions.

7.2 Reviews/evaluations

Preliminary schedules of project reviews and evaluation.

8. Conclusions and proposals

Technical appendices

I. Logical framework matrix of proposed project/programme design – intervention logic, indicators, assumptions and preconditions.
II. Map of project area.
III. Analysis of the relevance of the preferred option (the project), which is the basis for the conclusions presented in chapter 2.
IV. Analysis of the options for the project/programme design, incorporating feasibility and sustainability, with the preferred option presented in chapters 3, 4 & 6.
V. Preliminary design of the components (physical and non-physical) of the possible options.
VI. Other technical appendices, if any.
VII. Terms of Reference.

Administrative appendices

I. Study methodology/work plan (2–4 pages).
II. Consultants' itinerary (1–2 pages).
III. List of persons/organizations consulted (1–2 pages).
IV. Literature and documentation consulted (1–2 pages).
V. Curricula vitae of the consultants (1 page per person).

Chapter 16

16

A feasibility study should verify whether the proposed project identified in the pre-feasibility study is still well founded and is likely to meet the needs of the economic and social sectors. It should detail and design all the technical, economic and financial, institutional and management, environmental and sociocultural, and operational components of the project.

Guide for preparing Terms of Reference

This standard format is for use in preparing Terms of Reference for a transport feasibility study. It applies the logical framework of Project Cycle Management, and provides an outline of the approach and issues for study. For more information and understanding of the issues, see Part II of the guidelines – Towards sustainable transport infrastructure: a sectoral approach in practice.

Use this standard format to prepare detailed Terms of Reference for individual studies, in each case filling in and describing the specific requirements. The text in the shaded boxes will assist in identifying the individual requirements for the study. It should be stressed that clear formulation will help to ensure that all relevant issues are considered, thus enabling informed decision making.

Standard format for Terms of Reference

Feasibility study

To be drawn up by the recipient government/regional institution requesting the study

A. Study background

The National/Regional (NIP/RIP) Indicative Programme signed by the Government of [. . . . . .] and the European Commission in [. . . . . 19. . . .] reflects the European Commission's willingness to support the transport sector in [. . . . . .] region of the country, as a means to developing the economic and social potential of this region.

Within the framework of this Indicative Programme, the European Commission has received a request from the National Authorizing Officer to [describe the proposed project].

On the basis of the findings of a prefeasibility study, the National Authorizing Office and the European Commission decided on [date] to carry out a feasibility study of the proposed project. A copy of the prefeasibility study report plus the decisions taken are attached to this Terms of Reference.

This chapter should contain more detailed information or reference to the relevant documents such as studies and evaluation reports.

B. Study objective

The study will provide the decision makers in [. . . . . .] Government and the European Commission with sufficient information to justify acceptance, modification or rejection of the proposed [project] for further financing and implementation.

C. Study results

The study will deliver the following:

- a verification of the relevance of the proposed project to address the existing problems in the economic and social sectors suggested in or in addition to the options studied in the prefeasibility study;
- a detailed analysis of the technical, economic and financial, institutional and management, environmental and sociocultural feasibility of the proposed [project];
- a detailed analysis of the potential sustainability of the project results;
- the detailed plan which specifies indicators for project objectives, results and activities and incorporates required resources, the institutional structure for implementation and stipulates the responsibilities of various bodies, project timing/phasing, estimated costs and a logical framework planning matrix;
- detailed engineering design, technical specifications and tender documents for physical works and supplies;
- a draft financing proposal;
- recommendations for the following steps and any further actions to secure project financing and implementation, for example, the tender documents for the selection of consultancy services.

D. Issues to be studied

This chapter of the Terms of Reference should contain information about the broad and more specific issues or gaps in present knowledge to be studied. The specific problems related to the proposed project should be, therefore, inserted in the Terms of Reference. Use the Formulation Section in Part II of the guidelines: Towards sustainable transport infrastructure to identify the issues related to sectoral policy, changes in demand and related benefits, project costs and maintenance financing, institutional arrangements and organization for project, technical assistance, private sector involvement, accompanying measures, environmental impact, community needs, migrant labour, land acquisition, labour-based methods, ground and other investigations, appropriate alternative technical solutions, indicators for monitoring, and operational plans.

The main issues to be studied are outlined below. Detailed issues for verification and further analysis are presented in Appendix I: Format for feasibility study report.

(i) **RELEVANCE** of proposed project coherent with the country's macro-economic environment, and satisfying the economic or social needs.

The consultants will verify and confirm the analysis presented in the prefeasibility study with regard to:

- the nature, number and type of beneficiaries the proposed project potentially affected;
- all organizations and agencies affected by or involved in the proposed project;
- all major problems related to the proposed project, experienced by the beneficiaries and other parties involved, the causal inter-relationships of these problems, and the intersectoral linkages;
- other interventions or priorities of ministries, agencies and donors which may affect or be affected by the proposed project;
- information from previous studies and evaluations relevant to the proposed project.

The extent of this part of the study will vary according to the time since completion of the prefeasibility study, changes in the assumptions on which the proposed project is based, and any major changes in the political, economic or social conditions in the country.

This information, largely based on chapter 2 of the prefeasibility study report, will form chapter 2 (background) of the feasibility study report (see format in Appendix I).

(ii) **FEASIBILITY** of the proposed project determined by an analysis of the alternative technical solutions consistent with the economic and financial, institutional and management, environmental and socio-cultural aspects. This analysis is presented in technical appendix IV.

The consultants will develop a detailed **RECOMMENDATION** for the project to be structured as follows:

- **OVERALL OBJECTIVES:** Why is the project important to the users and beneficiaries, the region and the government? What is the desired economic and social development?
- **PROJECT PURPOSE:** Why do the users and beneficiaries need the project?
- **PROJECT RESULTS:** What services will the project deliver to the users and beneficiaries, including any external services, classified as **ASSUMPTIONS**, which are required to achieve the project purpose?
- **PROJECT ACTIVITIES:** A detailed indication of the activities and associated assumptions to achieve the results.

The project purpose and results should be specified by indicators, the activities should be quantified as much as possible.

This information which details and updates chapters 3 and 4 of the prefeasibility study report will form chapter 3 (intervention) and chapter 4 (assumptions) of the feasibility study report (see Appendix I).

(iii) The feasibility study will detail any **PRECONDITIONS** necessary for the start of project activities, and will also provide cost estimates, and any project phasing and organization.

This information updates chapter 5 of the prefeasibility study report, and will form chapter 5 (implementation) of the feasibility study report (see Appendix I).

(iv) The potential **SUSTAINABILITY** of the proposed project as determined by an assessment of the key sustainability factors listed in Part II of the guidelines: Towards sustainable transport infrastructure. The main factors are policy and coordination, demand and economic sustainability, financial sustainability, institutional and management sustainability, environmental and sociocultural sustainability, and regulatory and operational sustainability.

This information updates chapter 6 of the prefeasibility study report, and will form chapter 6 (factors ensuring sustainability) of the feasibility study report (see Appendix I).

These lists of issues are not exhaustive. The consultants are required to use their professional experience to review and bring to the attention of the Government and European Commission all relevant factors.

E. Work plan

This chapter sets out the approach for the study and key resource persons and organizations to be consulted. The consultants may propose alternative approaches to collecting information and to carrying out the study.

On the basis of the proposed time schedule outlined in this Terms of Reference, the consultants will prepare a work plan and include this in their offer. The work plan should set out the consultants' approach to the following activities:

- fact finding/data collection/surveys omitted in the prefeasibility study or requiring updating;
- identification of alternative solutions for the proposed project;
- analysis of alternative technical solutions;
- a briefing report summarizing the analysis of the alternative solutions;
- consultation meetings with decision makers/stakeholders to identify the preferred technical solution;
- preparation of engineering design and tender documents;
- preparation of the draft and final feasibility study report.

F. Expertise required

This chapter specifies the expertise (qualifications, experience) required for each person assigned to the study.

The expertise required depends on the type of project, and may include technical, economic and financial, institutional and management (public and private), environmental and social, and regulatory expertise which should be country specific.

For each expert, a curriculum vitae must be submitted which does not exceed four pages.

G. Reporting

This chapter specifies the types of reports required, language, dates of submission, number of copies and recipients. The format for a feasibility study report is presented in Appendix I.

The consultants will present a briefing report (10–15 pages) within [. . . .] weeks. This report will set out the alternative technical solutions for the project in sufficient detail to enable an informed decision to be made on the preferred solution.

The study conclusions should be presented in the feasibility study report which must be presented in the format given in Appendix 1. The underlying analysis is to be presented in appendices to this report.

The draft tender documents in [. . . . .] copies are to be presented to [. . . . . .] for comment by [date]. Within [. . . . .] weeks, comments on the draft tender documents report will be received from: [list the authorities]. The consultants will take account of these comments in preparing the final tender documents in [. . . . .] copies by [date].

The draft feasibility study report in [. . . . .] copies is to be presented to [. . . . . .] for comments by [date]. Within [. . . . .] weeks, comment on the draft feasibility study report will be received from: [list the authorities].

The consultants will take account of these comments in preparing the final feasibility study report (30–40 pages excluding appendices). The report will be in the [. . . . .] language, and [. . . . .] copies will be submitted by [date].

H. Time schedule

A time schedule should be prepared for the various components listed in Chapter E and the reporting requirements in Chapter G.

The consultants should respond to this time schedule in their offer.

I. Assistance to the consultants by the Contracting Authority

This chapter specifies assistance the Contracting Authority makes available to the consultants including data, documents, offices, transport, counterpart staff, facilitation of the entry and exit of expatriate personnel and any study equipment.

The Contracting Authority will make available the following information and facilities to the consultants' staff:

- all relevant reports, documents, maps and data;
- where available, office space and furniture and agreement on access to computer and communication facilities;
- where available, the use of vehicles and drivers;
- counterpart staff.

The Contracting Authority will facilitate:

- the issue of entry and exit visas for the consultants' expatriate staff;
- issue of any permits required for the consultants' staff to carry out their duties within the country;
- the import and export of personal belongings of the consultants' expatriate staff during the execution of the contract, and of equipment for the study in accordance with the provisions of the Lomé Convention or similar agreements.

Appendix I
Format for feasibility study report

Maximum length excluding appendices 30–40 pages

The report must be organized using the headings (chapters, sections and subsections) given below. Under each heading, a list of key words and explanatory notes is given to indicate the topics to be handled in that part of the report. These key words and explanatory statements refer to the main issues considered in Part II of the guidelines: Towards sustainable transport infrastructure. It is essential, therefore, to use these guidelines in order to gain a full understanding of the reporting requirements.

1. Summary

2. Background

2.1 Government/sectoral policy

National transport plan · sectoral plan · maintenance policy · transport chain · intermodal linkages · neighbouring countries' policies · regional regulations · transit agreements · donor policies.

2.2 Features of the sector

Traffic flows · passenger and goods flows · vehicle population · transport budget · sectoral budget · maintenance revenues · foreign exchange earnings and needs · growth · user charges · tariffs · employment · degree of political sectoral independence · condition of networks and transport services.

2.3 Beneficiaries and parties involved

Economic activity or groups benefiting from the proposed project and/or users of transport networks · responsible ministries · parastatals · private sector organizations · user representation in government boards · user organizations and groups.

2.4 Problems to be addressed

Problems of users and beneficiaries of the transport sector, and addressed by the project.

Analysis/review of problems described in the Terms of Reference, Chapter D: Issues to be studied:

- *policy and coordination* issues described in Section 2.1;
- *demand* for transport investment in economic and social sectors including any regional aspects;
- *alternative modal and intermodal solutions*;
- the *sustainability* of the sector in *economic and financial* (structural adjustment impact, transport sector financing, sector operating and maintenance budget and revenues), *institutional and management*, (institutional structure and responsibility, maintenance responsibility, staff policies, user involvement, commercialization, use of the private sector), *environmental and sociocultural* (potential impacts, gender and employment issues, land use), and *regulatory and operational* (safety and vehicle load controls, alternative technologies, standards, management information systems).

2.5 Other interventions

Relevant interventions by the Government, the European Commission, other donors in the economic or social sector and transport sector served by the proposed project.

2.6 Documentation available

Key documents for the study such as studies and evaluation reports.

3. Intervention

This chapter outlines the justification of the proposed project with reference to the analysis in technical appendix IV.

3.1 Overall objectives

Why is the project important to the users, beneficiaries and the government?

3.2 Project purpose

Why do the users and beneficiaries need the project?

3.3 Project results

What services will the project deliver to the users and beneficiaries?

3.4 Project activities
What will be done?

4. Assumptions

4.1 Assumptions at different levels
Actions by other agencies required to support achievement of the project activities, results and purpose.

4.2 Risks and flexibility
Capacity of project to overcome problems arising from non-compliance of crucial assumptions that could jeopardize the project, and the extent to which the project takes account of these risks.

5. Implementation

5.1 Physical and non-physical means
Detailed indication of physical works · equipment · supervision · technical assistance · policy or technical studies · monitoring and evaluation.

5.2 Organization and implementation procedures
Detailed assignment of agencies involved · project organization · responsibilities and definition of procedures.

5.3 Time schedule
Expected duration and phasing of the project.

5.4 Cost estimate and financing plan
Cost estimates by component and input, in foreign exchange and local currency, including financing source.

5.5 Special conditions and accompanying measures taken by the Government
Actions for government and involved parties including the private sector, prior to launching the implementation and during project implementation.



6. Factors ensuring sustainability

6.1 Policy support and coordination

The extent to which the implementation of existing policy requires modification or additional policy measures at a national and/or regional level – maintenance policy of infrastructure and equipment, regional harmonization of transit procedures, liberalization of transport services, competition, research.

6.2 Regulatory and operational, including appropriate technology

The degree of enforcement of regulations on safety and operational control. The result of engineering surveys (ground investigations, materials) that illustrate the use to which technology and the standards adopted make of local materials and skills, labour-based methods, physical and financial resources of the private sector.

6.3 Environmental protection

The extent to which the amelioration of any impacts on people, land acquisition and use, water, air, noise, flora and fauna and cultural heritage are consistent with environmental standards and practices, including the results of any environmental surveys. Refer to the European Commission manual on Environmental Impact Assessment.

6.4 Sociocultural aspects/women in development

The degree of consistency with the present sociocultural norms and practices, including the results of any social surveys. The project response to the needs of the local community, increased labour opportunities, and dealing with migrant labour. Refer to the European Commission manuals on Women in Development and on Employment.

6.5 Institutional and management capacity, public and private

The extent to which institutions fulfil their responsibilities, manage networks efficiently, by adopting business practices and involve the private sector, including any restructuring measures ongoing or planned. The scope for private sector involvement.

6.6 Demand, economic and financial analysis

The firm estimates of project traffic flows, axle load and other surveys. The security of increased trade and traffic flows, firm estimates of benefits expressed in decision criteria of sensitivity tests. Refer to the European Commission manual on Financial and Economic Analysis.

The security of increased financial benefits to the transport sector and similar financial decision criteria, including cost recovery measures, allocation of revenue to maintenance and operation and future commitments, and financial and technical audits.

7. Monitoring and evaluation

7.1 Monitoring indicators

Identification of key indicators and systems for monitoring project progress, results, activities and assumptions. Assignment of responsibility to government or agencies involved, or by contracting out to the private sector.

7.2 Reviews/evaluations

Schedules of project reviews and evaluation.

8. Conclusions and proposals

Technical appendices

I. Draft financing proposal with a logical framework planning matrix of the proposed project/programme design – intervention logic, indicators, assumptions and preconditions.
II. Map of project area.
III. Analysis of the relevance of the preferred solution (the project) with the final conclusions also presented in chapter 2.
IV. Detailed analysis of the technical and institutional alternative solutions of the project/programme design, incorporating feasibility and sustainability, with the preferred solution presented in chapters 3, 4 & 6.
V. Detailed engineering designs and tender documents of the proposed project.
VI. Other technical appendices, if any.
VII. Terms of Reference.

Administrative appendices

I. Study methodology/work plan (2–4 pages).
II. Itinerary (1–2 pages).
III. List of persons/organizations consulted (1–2 pages).
IV. Literature and documentation consulted (1–2 pages).
V. Curricula vitae of the consultants (1 page per person).

Chapter 17

17

Simple and easy to use indicators are effective tools of project monitoring. They are identified early in the project cycle and are refined as the project progresses. Indicators thus help in preparing and implementing more sustainable projects.

Guide for choosing indicators

Use the project indicators in this chapter to identify and formulate indicators for individual transport infrastructure projects.

For more information and understanding of the issues that the indicators address, see Part II of the guidelines – Towards sustainable transport infrastructure: a sectoral approach in practice.

Monitoring indicators

Indicators are tools for measuring the progress of projects and assessing the quality of results and benefits delivered to stakeholders. They are an essential part of the European Commission's toolbox for improving the quality and development impact of its projects. Indicators are an integral part of the logical framework technique and are used throughout the project cycle in addressing the issues of sustainability.

Applying indicators to projects

Indicators must be applied at all levels in the logical framework of a project:

- **Project activities.** At this level, indicators generally measure quantity and thus focus on the efficiency of project implementation without necessarily providing any information about the quality of activities. For example, number of kilometres of roads rehabilitated, number of works and/or supply contract awarded, number and level of technical assistants appointed, and number and type of training courses held.

- **Project results.** At this level, indicators measure the quality and quantity of goods or services delivered to the users and beneficiaries. For example, better road conditions measured by the International Roughness Index, improved port facilitation measured by waiting or transit time and improved management measured by manpower and equipment utilization.

- **Project purpose and overall objectives.** At these levels, indicators measure the change of benefits both at a project level and at a wider sectoral level. For example, increased trade or goods transported which could be the project purpose, contributing to economic and social development of a region, the overall project objective.

Design and use of indicators

Indicators serve as effective monitoring tools when they relate directly to the activity, result or objective being monitored and efficiently record change from a known situation, usually referred to as a baseline position. In some cases, this may prove difficult and therefore a proxy indicator has to be found. For example, a proxy indicator for measuring increased trade patterns could be the change in commercial vehicle composition of traffic flows. Moreover, indicators are more readily accepted and therefore used when the data required are simple in time and cost to collect.

The choice of indicators starts in the identification phase, although this is not precluded from the programming phase. Consultants are required to specify indicators in the prefeasibility study. Indicators are fully designed during the formulation phase along with the project monitoring system. At that time, the responsibility and arrangements for continuous monitoring are agreed. As monitoring progresses during project implementation, improvements may be made to data collection. A continuous monitoring system is thus in place when the project is complete.

Monitoring continues beyond project completion when project support is withdrawn. Simple and easy to use indicators are, therefore, critical for evaluating the sustainability of a project and its contribution to sectoral goals.

Indicators for road projects

	Indicators	Information source
BENEFITS		
Accessibility	Road density km/km²	Roads agency records
	Road km/capita	Roads agency records
	Range of transport services	Haulage/bus companies
Mobility	Traffic flows	Traffic surveys
	Journey times	Traffic surveys
	Frequency of transport services	Haulage/bus companies
	Use of non-motorized transport (NMT)	Specific surveys
Road condition	International Roughness Index	Condition surveys
	Traffic flow : road capacity	Traffic surveys
User costs	Vehicle operating costs	Private operators/periodic surveys
	Freight tariffs/tonnne km, passenger fares/km	Haulage/bus companies
Safety	Fatalities/vehicle and /vehicle km	Road safety annual/police reports
	Injuries/vehicle and /vehicle km	Road safety annual/police reports
	Pedestrian and NMT fatalities	Road safety annual/police reports
	Pedestrian and NMT injuries	Road safety annual/police reports
SUSTAINABILITY		
Economic and Financial	Roads budget : national budget	Annual budget
	Maintenance budget : roads budget	Roads budget/expenditure
	Routine : periodic maintenance	Roads contract records
	Asset value of network	Periodic/annual survey
	Maintenance costs : asset value	Condition/asset surveys
	Rate of increase in network asset value	Periodic/annual survey
Institutional and Management	Administrative cost : roads budget	Roads agency financial records
	Revenue collection cost : total revenue	Roads agency financial records
	Revenue collected : expenditure	Roads agency financial records
	Time to disburse to other agencies	Receiving agencies records
	Time to pay consultants/contractors	Consultant/contractor records
	Equipment availability and reliability	Works records
	Equipment utilization rates	Works records
	Kilometres maintained : total network	Condition surveys/audits
	Maintenance and construction costs/km	Roads contract records
	Private : public sector work	Roads contract records
	People using MIS : management staff	Management unit records
	Quality assurance trends	Technical/financial audits
Environmental and Sociocultural	Levels of pollution : legal limits	Periodic surveys
	Skilled and unskilled employees	Roads agency and private sector
	Men : women employed	Roads agency and private sector
	Labour-based : equipment-intensive works	Contract works records
Operational and Regulatory	Actual axle loads : legal limit	Periodic surveys
	Traffic offenders prosecuted : total offences	Court records

The sustainability factors are those in Part II of the guidelines – Towards sustainable transport infrastructure: a sectoral approach in practice.

Indicators for railway projects

	Indicators	Information source
BENEFITS		
Accessibility	Rail density km/km²	Railways corporation records
	Stations/rail km	Railways corporation records
Mobility	Traffic flows	Traffic surveys
	Journey time	Rail timetable/traffic surveys
	Frequency of service	Rail timetable
Railway condition	Traffic flow : railway capacity	Traffic surveys
	Train speeds	Traffic surveys
User costs	Freight tariffs/tonne km	Published tariffs/negotiated
	passenger fares/km	contracts
Safety	Fatalities and injuries	Safety reports
	Derailments/million train km	Safety reports
SUSTAINABILITY		
Economic and Financial	Rail : road traffic	Ministry records
	Maintenance costs : capital budget	Railways corporation records
	Asset value of network and equipment	Annual survey
	Maintenance cost : asset value	Condition/asset surveys
	Expenditure on maintenance/km	Railway contract records
	Freight revenue/tonnne km	Railway financial records
	Passenger revenue/ passenger km	Railway traffic records
	Salary costs : revenue	Railway financial records
	Rate of return on assets and turnover	Railway financial audits
Institutional and Management	Administrative cost : total staff cost	Annual budget
	Revenue collection cost : total revenue	Railway financial records
	Kilometres maintained : total network	Condition surveys/audits
	Locomotive/wagon availability and reliability	Railway operating reports
	Locomotive and wagon utilization	Railway operating reports
	Maintenance and construction costs/km	Contract records
	Private sector : railways corporation work	Railway contracts unit
	People using MIS : management staff	Management unit records
	Quality assurance trends	Technical/financial audits
Environmental and Sociocultural	Levels of pollution : legal limits	Periodic surveys
	Fuel consumption : total tonne-km	Quarterly operating records
	Skilled and unskilled employees	Railway personnel records
	Men : women employed	Railway personnel records
Operational and Regulatory	Level of axle loads : permitted loads	Periodic surveys

The sustainability factors are those in Part II of the guidelines – Towards sustainable transport Infrastructure: a sectoral approach in practice.

Indicators for port projects

	Indicators	Information source
BENEFITS		
Accessibility	Number of ports	Ports authority records
	Hours of operation	Ports authority records
Throughput	Tonnage/berth; tonnage/shift	Cargo records
	Passenger flows : passenger vessel	Passenger records/shipping line records
	Cargo dwell time in port	Freight forwarders records
	Frequency of sailings	Shipping line timetables
Port condition	Cargo flow : port capacity	Cargo records
	Ship turn-round time	Port surveys/shipping lines records
User costs	Cargo handling cost/tonne	Published tariffs/negotiated contracts
	Container handling cost	Published tariffs/negotiated contracts
	Insurance claim costs : tonnage value	Freight forwarders records
Safety	Fatalities and injuries/vessel movement	Safety reports
SUSTAINABILITY		
Economic and Financial	Port : airport traffic	Ministry records
	Maintenance : capital budget	Ports authority records
	Asset value of infrastructure and equipment	Annual survey
	Maintenance cost : asset value	Condition/asset surveys
	Expenditure on maintenance	Port contract records
	Freight revenue/tonnne and container	Port financial records
	Freight/passenger revenue : total revenue	Port traffic records
	Other commercial revenue : total revenue	Port financial records
	Salary costs : total revenue	Port financial records
	Rate of return on assets and turnover	Port financial audits
Institutional and Management	Administrative cost : total staff cost	Annual budget
	Revenue collection cost : total revenue	Port financial records
	Crane/mobile plant availability/reliability	Port operating reports
	Crane/mobile plant utilization	Port operating reports
	Tonnage/crane hour, container per hour	Port operating reports
	Private sector : ports authority work	Port contract records
	People using MIS : management staff	Management unit records
	Quality assurance trends	Technical/financial audits
Environmental and Sociocultural	Pollution incidents per vessel movement	Accident reports/vessel inspections
	Non-conforming MARPOL cargo tonnage	Port/vessel records
	Skilled and unskilled employees	Port personnel records
	Men : women employed	Port personnel records
Operational and Regulatory	Aids to navigation availability and reliability	Regular monitoring/shipping lines

The sustainability factors are those in Part II of the guidelines – Towards sustainable transport infrastructure: a sectoral approach in practice.

Indicators for airport projects

	Indicators	Information source
BENEFITS		
Accessibility	Number of airports	Civil aviation records
	Hours of operation	Airports authority records
Throughput	Passengers; tonnage/month	Passenger and cargo records
	Cargo dwell time at airport	Freight forwarders records
	Frequency of flights	Airline timetables
Airport condition	Passenger and cargo flow : capacity	Passenger and cargo records
User costs	Aircraft charge per movement	Published tarifs/negotiated contracts
	Cargo handling cost/tonne	Published tariffs/negotiated contracts
	Airport passenger charge	Published airport charge
	Insurance claim costs : tonnage value	Freight forwarders records
Safety	Fatalities and injuries/aircraft movement	Safety reports
SUSTAINABILITY		
Economic and Financial	Airport : port traffic	Ministry records
	Maintenance : capital budget	Airports authority records
	Asset value of infrastructure and equipment	Annual survey
	Maintenance cost : asset value	Condition/asset surveys
	Expenditure on maintenance	Airport contract records
	Freight revenue/tonnne	Airport financial records
	Freight/passenger revenue : total revenue	Airport traffic records
	Other commercial revenue : total revenue	Airport financial records
	Salary costs : total revenue	Airport financial records
	Rate of return on assets and turnover	Airport financial audits
Institutional and Management	Administrative cost : total staff cost	Annual budget
	Revenue collection cost : total revenue	Airport financial records
	Peak hour movements : average per hour	Airport operating reports
	Passenger peak hour : average passenger per hour	Airport operating reports
	Peak hour passenger per m^2	Airport operating reports
	Passengers : staff employed	Airport operating reports
	Staff employed : aircraft movement	Airport operating reports
	Private sector : airports authority work	Airport contract records
	People using MIS : management staff	Management unit records
	Quality assurance trends	Technical/financial audits
Environmental and Sociocultural	Levels of noise pollution : legal limits	Regular surveys
	People subject to noise levels above limits	Annual surveys
	Skilled and unskilled employees	Airport personnel records
	Men : women employed	Airport personnel records
Operational and Regulatory	Aids to navigation availability and reliability	Regular monitoring/airlines

The sustainability factors are those in Part II of the guidelines – Towards sustainable transport infrastructure: a sectoral approach in practice.

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