

Synthesis Report

Overview and Synthesis of Road Sector Evaluations

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List of Abbreviations

ACP	Africa-Caribbean-Pacific
ADB	Asian Development Bank
AfDB	African Development Bank
CO ₂	Carbon dioxide
Danida	Danish International Development Assistance
DFID	Department for International Development (UK)
EC	European Commission
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
EVAL	Danida's Evaluation Department
GDP	Gross Domestic Product
GRF	Ghana Road Fund
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit GmbH
HDM-4	Highway Development and Management System
HIV/AIDS	Human Immune-Deficiency Virus/Acquired Immune-Deficiency Syndrome
IMF	International Monetary Fund
MDG	Millennium Development Goals
MTEF	Medium Term Expenditure Assessment
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
PRSP	Poverty Reduction Strategy Paper
RIO	Regional Integration Organisation
SSATP	Sub-Saharan Africa Transport Policy
Sida	Swedish International Development Agency
SWAp	Sector Wide Approach
TA	Technical Assistance
TB	Tuberculosis
UNECA	United Nations Economic Commission for Africa
USD	United States Dollar
VOC	Vehicle Operational Costs
WB	World Bank
WHO	World Health Organisation

Executive Summary

The Report “Overview and Synthesis of Road Sector Evaluations” covers evaluations and other supporting studies from 1997 to 2007. The aims of the Synthesis Report are: 1) to be a source of inspiration when conceptualising new road sector interventions and reviewing of existing road programmes; and 2) to provide inputs to possible road sector impact studies of ongoing or completed Danish supported road sector interventions. A total of 27 evaluation and study reports have been identified, of which 12 were selected for a detailed assessment. The documents selected for the synthesis of road sector evaluations are either relating to single road projects/programmes, or several road projects/programmes covering several countries over a certain time span. Some of the evaluations are conducted by individual donors, while others are joint evaluations.

There is an increasing recognition among governments and donors that transport – in particular the road sector – contributes substantially to the broader national development objectives as regards poverty reduction and attainment of the Millennium Development Goals (MDGs). Most poverty reduction strategies explicitly identify transport as a contributor to development and poverty reduction. It is accordingly being realised that the transport/road sector cuts across several sectors, which would – when conceiving road sector interventions – warrant a multi-sectoral planning and implementation approaches.

Transport infrastructure links economies to global markets and enhances the countries’ ability to compete for export markets and foreign direct investments. As distribution costs for goods and services decline, regions as well as countries will have better prospects for capitalising on their comparative advantage. The connection between transport and poverty reduction is that when transport improves accessibility for the poor, it unlocks employment opportunities and more importantly enables essential trips to service centres, health and educational facilities, and markets.

While it is recognised that the road sector contributes to development impact, the impact is not easily quantifiable – neither for short-term nor long-term impacts. It is generally perceived that national roads contribute relatively more to economic development, whereas local roads contribute relatively more to social development. In either case, it was found that it would be important to better document the road sector’s broader economic and social impacts and thereby provide the justification for an increased focus on the road sector’s contributing role to cross-sectoral impact and insight into how this can best be attained.

National transport/road sector frameworks are evolving in many of the developing countries resulting in elaboration of transport/road sector policies and institutional reforms, with separation of policy and regulatory functions from infrastructure

management. However, the transition to the new institutional structures is often long-drawn and complicated – especially as regards transfer of functions and surplus staff in transport ministries to implementing agencies. Many of the most qualified staff employed in the national and local agencies, shift their employment to the emerging private sector – mainly due to better terms of employment and incentive structures. This leaves the road sector institutions with reduced corporate capacity – making it even more difficult to restructure the road sector institutions. Non-state actors play a limited role in policymaking and planning of road sector development.

Road traffic injuries are a growing public health issue, disproportionately affecting vulnerable groups of road users in developing countries. Road traffic injuries cost low-income and middle-income countries nearly two percent of their Gross Domestic Product (GDP). The combination of fast-moving vehicles, slow-moving pedestrians, cyclists, and local vehicles, together with lack of safety awareness, bad driving skills and poor road conditions, result in a high number of accidents and fatalities. Government actions to ensure road safety are often ineffective.

In many developing countries, investments in rehabilitations and transport infrastructure are to a very large extent financed by donors. Governments and donors generally agree that maintenance should be financed from domestic sources. Generation of adequate local revenues for maintenance remains a major issue and hampers the sustainability of road sector investments in most developing countries. The introduction of labour-based methods reduces construction and maintenance costs and the foreign exchange cost component, while also generating income to the poorer segment of the population.

The main quantifiable benefit for roads projects is the ‘Vehicle Operation Costs’ (VOC) savings. These accrue initially to the owners of the vehicles, but the benefits are expected to lead to broader impacts through reduced transport costs on agriculture, industry and trade. Traditional transport planning approaches have been generating transport systems that propagate an unfair distribution of accessibility and reproduce safety and environmental inequalities.

More attention should be paid to the cross-cutting issues. Strategies and support for promoting gender equality are lacking in road sector programmes and agencies. Environmental impact assessments are increasingly part of engineering design, but focus is more on construction and less on long-term effects. Road transport accounts for nearly a quarter of man made gasses contributing to climate change, but emissions and other impacts of traffic are not monitored. HIV/AIDS is included in policies and project design, but there are gaps between intentions and implementation. Construction of roads is susceptible for corrupt practices, but preventive strategies are lacking.

With the MDGs, poverty alleviation has become a central theme. Not all donors mention poverty alleviation as an explicit objective of their support to road programmes and projects, but the link is recognised. The project selection process is mainly based on cost-benefit aspects and less on poverty alleviation and regional

development aspects. But poverty reduction is increasingly being incorporated into donors' country, transport and road sector strategies making the contribution of the road sector to poverty alleviation a joint ambition. The sector wide approach is increasingly being adopted in order to coordinate government and donor interventions. Despite this, there continue to be difficulties in harmonising and aligning planning and administrative procedures.

The conclusions and recommendations in the selected documents largely correspond to the findings and lessons learned. The most noteworthy conclusion it is increasingly recognised that the road sector contributes to macro and micro level impacts and is essential for the performance of a number of other sectors – the provision of road infrastructure and transport services influences physical, economic and social development patterns significantly.

1. Introduction

1.1 Purpose of the Synthesis

The Report “Overview and Synthesis of Road Sector Evaluations” (referred to as the Synthesis Report) covers evaluations and other supporting studies from 1997 to 2007. The main bulk of road sector interventions included in the Synthesis Report were implemented during the 1995-2000 period and thus, only to a limited extent, reflect on the substantial progress made on donor harmonisation and alignment in the wake of the 2003 Rome Declaration and the 2005 Paris Declaration on Aid Effectiveness. The aims of the Synthesis Report are: 1) to be a source of inspiration when conceptualising new road sector interventions and reviewing of existing road programmes; and 2) to provide inputs to possible road sector impact studies of on-going or completed Danish supported road sector interventions.

A total of 27 evaluation and study reports have been identified, of which 12 were selected for a detailed assessment (ref. Annex 1). The evaluations and studies have been conducted either by multilateral or bilateral donors. Some of the identified evaluation and study reports have a scope that is wider than Danida’s interventions in the transport/road sector. There is a quite significant variation in themes in the selected reports, but jointly they cover all aspects that are essential for the Danish support to the road sector (ref. Annex 2). Some of the selected reports deal broadly with the transport sector and inter-modal transport issues. However, road infrastructure and road transport services constitute by far the most important transport mode, which is also reflected in the priority donors attach to the road sector. With a view to ensuring the relevance of the Synthesis Report to programming and further analysis of Danida’s road sector interventions, the extracts from the selected reports have been elaborated within the contextual framework as constituted by Danida’s support to the programme countries in which road sector programmes are implemented. An overview of Danida’s main road sector interventions in programme countries is presented in Annex 3.

Box 1.1: Selected evaluation and study reports

- Danida, Evaluation of Minor Roads Programme, Kenya, 1997
- Danida, Ghana, Joint Evaluation of the Road Sub-Sector Programme, 2000;
- Sida, Feeder Roads Programme, Mozambique, 2000
- AfDB, Experience and Lessons from Road Sub-Sector Projects & Programmes, 2000
- ADB, Paving the Way to Poverty Reduction through Better Roads, 2001
- DFID, Transport's Role in Achieving the MDGs, 2002
- Danida, Ghana – Follow-up Study: Joint Evaluation of the Road Sub-Sector Programme, 2004
- GTZ, Development of Rural Roads and Markets, Bangladesh, 2004
- UNECA/WB, Taming HIV/AIDS on Africa's Roads, 2004
- EC, Interventions in the Transport Sector in Third Countries, 2004
- GTZ, Why Transport Matters, 2005
- WB, A Decade of Action in Transport (1995-2005), 2007

The Synthesis Report has been structured to include major themes of significance to the road sector, some of which are highly interlinked. A fact sheet has been prepared for each of the selected reports, which is structured in a similar way as the Synthesis Report for easy reference. The fact sheets are available on EVAL's website www.evaluation.dk. The elaboration of the Synthesis Report is solely based on a desk study of the selected reports and on statements in the reports. The study team's comments to some of these statements are provided in footnotes.

Chapter 2 presents findings and lessons learned in a generalised fashion, whereas Chapter 3 presents donor specific conclusions and recommendations that are consistent with the contextual framework for the Danish support to the road sector.

1.2 Evaluation Studies' Methodologies

The documents selected for the synthesis of road sector evaluations are either relating to single road projects/programmes, or several road projects/programmes covering several countries over a certain time span. Some of the evaluations are conducted by individual donors, while others are joint evaluations. Those documents selected, which are not evaluations per se, are studies, papers or notes, and some are part of a series assessing impact of development assistance. Lastly, a few of the studies focus on one or more cross-cutting issue, such as HIV/AIDS, or the link between the road sector and the MDGs. One of the selected documents is a 'follow-up study' assessing the effects of the recommendations of a preceding evaluation and identifying the constraining factors preventing recommendations from being followed.

All the selected documents aim to present findings and elaborate lessons learned to help improve identification, preparation, appraisal, implementation, review and

evaluation of on-going and future transport/road sector interventions. One evaluation focuses on donor performance in planning and implementation rather than the impacts resulting from the interventions, as well as on donor coordination and the substance of the sector dialogue. Another evaluation emphasises especially the socio-economic impacts and the change in livelihood conditions of the target group – with special attention to sustainability, poverty reduction and environmental aspects.

Most of the evaluations use case stories. While some of the evaluations are based on desk studies only, the majority of the evaluations include field missions with site visits, in-depth interviews and workshops with key stakeholders, e.g. ministry representatives, donors, and non-state actors. While some evaluations include interviews of road users, others did not. Some evaluations include literature reviews of academic studies and analysis of previous evaluations.

2. Findings and Lessons Learned

2.1 *Economic and Social Development*

2.1.1. Transport and the Economy

Transport infrastructure links economies to global markets and enhances the countries' ability to compete for export markets and foreign direct investments. As distribution costs for goods and services decline, regions as well as countries will have better prospects for capitalising on their comparative advantage. Global competition has intensified the need for efficiency in transport and logistic systems in the delivery chain from the point of manufacture to delivery to the customer. As oil prices have risen, transport has increasingly become the biggest cost factor in the final amount the customers pay. About 11.5 percent of the total value of imports to Africa is related to transport costs. On the export side for many countries in Sub-Saharan Africa, at least 20 percent of the export costs are directly attributable to transport. For landlocked countries such as Malawi, the figure can be as high as 55 percent, which seriously weakens the term of trade for such countries. Low density and poor condition of transport infrastructure have a negative impact on transport costs.

Transport services and infrastructure facilitate regional economic cooperation, trade and integration. Regional Integration Organisations (RIOs) generally promotes the development of regional transport corridors and harmonisation of transport and trade related standards. Rehabilitation of national roads along major transport corridors that connect with neighbouring countries, including modernisation of border crossings, has a positive impact on trade. However, national transport strategies and programmes tend to give priority to domestic transport needs.

In many developing countries, transport sector interventions have contributed to economic growth, trade development and stimulation of investments – and have increased employment opportunities. Transport is estimated to make a contribution of between 5-6 percent of the GDP. Without efficient transport, economic growth is not possible, and without growth, poverty reduction cannot be sustained. At both national and local levels, transport infrastructure interrelates closely with land use and has a large impact on the physical structuring of the overall economy and its inclusiveness. Roads encourage the expansion of services like electricity and telephones. Rehabilitation of the primary road network has a very positive impact on economic development through sharp reduction in transport costs and travel time.

A basic distinction is drawn between *transport services* rendered directly to the users and *transport infrastructure* used by transport service providers. Liberalisation of transport services has resulted in lower transport charges and tariffs. However, the main

focus on donor interventions have frequently been on infrastructure improvements, but seldom included other factors that could have an impact on transport efficiency.

2.1.2. Transport and Poverty Reduction

Countries that have elaborated Poverty Reduction Strategy Papers (PRSPs) explicitly identify transport as a contributor to development and poverty reduction and frequently make transport a priority sector. The transport sector is identified in most PRSPs for its impact on economic growth and increased accessibility. PRSPs are fast becoming the dominant framework for planning of donor assistance to poor countries. If transport issues are not well incorporated in the PRSPs, they will not receive proper attention. Studies suggest that transport issues are underrepresented because transport contributes to the delivery of other basic needs.

The effects of transport on the level and nature of poverty are not well understood, but growing evidence links transport investments to the improved wellbeing of the poor¹. Research has shown that the greatest returns for agricultural productivity and poverty reduction often results from investments in roads. Expanding the rural roads network and improving maintenance lower costs for agricultural inputs and market outputs. Improved transport services increase the prospects for using idle and sub-optimally used local resources and thus improve income opportunities for rural households. Urban households benefits as well from improved transport services through lower food prices and energy costs (woodfuel continues to be a main energy source in many of the developing countries' large cities).

Transport effects on poverty are largely indirect and not easily quantified. The connection between transport and poverty reduction is that when transport improves accessibility for the poor, it unlocks employment opportunities and more importantly enables essential trips to service centres, health and educational facilities, and markets. Poverty reduction projects are often multidisciplinary – experience shows that when the transport component's contribution is underestimated and transport projects fall under a sector board other than transport, the outcome of the development interventions is often unsatisfactory².

2.1.3. Access to Social and Economic Amenities and Affordability

Improved road networks and transport services have a significant positive impact on mobility and access. Access is a key dimension for alleviating poverty and creating equal opportunities. Evidence shows that the poor are often excluded from the benefits of transport interventions. Transport constraint is implicit in the expressed need to create greater access – to employment opportunities, educational and health facilities, agricultural development, and social inclusion. Lack of roads hampers communities' political access. Government officials and district leaders avoid visits to villages that are not easily accessible.

¹ Ref. WB, pg 4 (Evaluation 2007)

² Ref. WB, pg 77-78 (Evaluation 2007)

Box 2.1: Positive impacts from improved access

- Improved access to social and welfare services, i.e. schools and health centres; the MDG to ensure universal primary education requires better access and shorter distances to schools – a factor especially important for the increased enrolment of female pupils;
- Improved access to police and other public authorities;
- Improved provision of social services, such as health information and medicine (e.g. HIV/AIDS prevention information and treatment drugs) as well as distribution of schoolbooks to remote areas. Health personnel and school teachers are also provided with more easy access to their places of work – teacher absenteeism, for instance, is a major drawback to the quality of education in developing countries;
- Improved access to industrial and agricultural production areas;
- Improved access to markets for buyers and sellers. Farmers reduce the need to use intermediaries for selling their products. This implies that farmers encounter a higher demand for their products and improve income resulting in improved welfare.
- Improved mobility of people and improved transport services (including non-motorised vehicles) increase social integration;
- Improved access encourages the expansion of services like electricity, telephones, schools and clinics into new/remote areas;
- Improved access to employment opportunities, also non-agricultural employment;
- Increased access to locations where there is greater demand for services. Increased access enables people to take advantage of seasonal employment opportunities and travel to urban centres when the need for labour is scarce in the rural areas.

Generally, governments tend to have limited focus on the mobility and access needs of the poor, due to limited capacity of local governments in charge of the rural roads network. Further, poor roads limit inter-village and rural-urban trade, and as such hampers agricultural productivity and marketing. Increased access also reduces the power of monopolistic agricultural traders. Farming communities, in particular in remote areas of Africa, highlight insufficient infrastructure as well as lack of means of transportation as key constraints in their crop marketing systems.

Donors generally agree that the contribution of more and improved roads to rural access is significant – and crucial. The WB suggests that the key indicator should be the number of people that lives within a 2-km walk of an all-season road, but recognises that there is a need for more detailed indicators. There is a growing body of evidence pointing to the pro-poor benefits of reduced transport costs and the value of improving personal mobility, as a by-product of more and improved roads, although much more attention needs to be given to appropriate pro-poor transport pricing or subsidisation policies.

Making transport more affordable is a major challenge; not only can high transport costs discourage trade and economic growth, but can also reinforce the economic and social exclusion of the poorest people, both in the rural and urban contexts. But there is no way avoiding that improving affordability cuts across the entire transport spectrum and is closely linked to the MDGs and the poverty-reduction agenda.

2.1.4. Transport and the MDGs

Transport development is not included in any of the MDGs but is rather a means to an end. The role of transport in poverty reduction is underemphasised in the MDGs despite its obvious influence on the performance of all other sectors, its contribution to economic growth, and its importance in terms of government and donor spending³.

Although the MDGs do not specifically address transport and roads, the MDGs have contributed to increasing the attention on accessibility and greater rural linkages. In four of the MDGs, health and environmental sustainability are crucial issues. In these areas transport can contribute strongly by reducing traffic accidents, controlling vehicle emissions, and take measures to restrict the transmission of diseases where transport has a role.

'Landlocked economies' are particularly vulnerable to the effectiveness of their transport links (ref. MDG Target 14⁴). A typical landlocked developing country has transport costs that are 50 percent higher and volumes of trade that 60 percent lower than countries with coastal access. Besides costs, other problems are inadequate infrastructure, poor transport services, and proliferation of government control, which makes it difficult to guarantee timely and reliable delivery of goods. The problems inflate the prices of imported consumer goods, fuel, capital goods and intermediate inputs – thereby increasing the cost of agricultural and domestic production.

2.1.5. Community Participation

In the process of road selection, there are indications that political influences and technical considerations take precedence over the felt needs of target communities. The communities' participation in the process is often very limited, even though there are studies, which provide documentation that community-based approaches are successful in identifying and prioritising transport concerns.

Local ownership can be promoted through the decentralisation of the responsibility for planning, operation and maintenance of district and farm-to-market roads through: employment of local people to do rehabilitation and maintenance works; and promotion of their participation in the local councils' decision-making – increasing the chance that their views are heard and acted upon.

³ Ref. DFID, pg 7 (Research Paper 2002)

⁴Goal 8: Develop a global partnership for development – Target 14 addresses the special needs of landlocked countries and small islands.

2.1.6. Rights-based Approach

Of all the donors, only DFID mentions the rights-based approach, stating that road sector development helps to ensure human rights, and is important to both governments and donors in the strive to attain the MDGs. Applying a rights-based approach enables an analysis of obligations for the provision of transport, and types of citizen and civil society action to create change. While access to transport is not universally recognised as a human right, basic levels of shelter, health, education and livelihoods often are.

Where social and business services are located far from people's homes, access to these depends upon access to adequate transport. Thus, transport can be seen in some contexts as a precondition for securing basic rights. Strengthening of national transport networks and improving access to isolated areas can be a means of easing tensions in countries where some segment of the population is discriminated against and tempted by separatism. The rights-based approach analyses development options from a different perspective to that adopted in the past in development planning, including transport planning.

2.1.7. Multi-sector Approach

There is a rapidly increasing interaction between transport/roads and other sectors, making it a complex multi-sectoral challenge – calling for more innovative and multi-sectoral approaches. The challenge, however, seems to be how to meet both the additional challenges as well as the substantial demand for the traditional road sector development within the auspices of the national and local authorities entrusted with this responsibility.

Single sector interventions are not appropriate in trying to achieve the MDGs. Transport investments should be cross-sectoral, and accompanied by actions on other fronts, such as complementary investments in agriculture, industry and commerce to ensure that outcomes are expanded. Cost reductions will be obtained and economic growth encouraged by adopting a multi-sector planning approach. Universal education, improved maternal health and reduced child mortalities are MDGs that call for multi-sectoral approaches. Generally, greater coordination is needed, between the road sector and other sectors. But it is imperative that guidelines for handling future transport and roads components in multi-sector projects are needed.

2.2 Policy, Legal and Institutional Framework

2.2.1. Transport/Road Policies and Strategies

Most developing countries have either designed or intend to design a transport sector policy/strategy, which does not always encompass all transport modes – and most often only roads. Although implementation of transport policies and strategies vary from country to country, the general trend reveals positive developments, i.a.:

separation of policy and regulatory functions from infrastructure management, which are entrusted to autonomous agencies; ensuring proper maintenance of the main road network; liberalisation of markets for transport services; privatisation or transfer under concession of maritime and air transport; and maintenance work contracted out.

By 2003, 21 African countries out of 27 surveyed had adopted the Sub-Saharan Africa Transport Policy (SSATP). The existence of transport policies/strategies creates favourable conditions for the identification of interventions that meet the partner countries needs. Transport policies in African countries generally include: 1) the necessity of securing maintenance; 2) aim at improving the efficiency of transport systems through privatisation of transport services and commercialisation of construction and maintenance; 3) include plans for institutional reforms, i.a. the role of the Ministry of Transport, which typically restricts its functions to policy and regulatory matters, while management of road infrastructure is transferred to an autonomous road agency; and iv) take steps for large transport infrastructure, apart from roads, to be either privatised or subject to concessionary arrangements.

2.2.2. Regulatory Framework

Ideally, governments should concentrate on creating and maintaining legal and regulatory frameworks that attract private providers, while at the same time safeguarding the interests of the poor, improve environmental conditions, and coordinate cross-sector interactions.

Improving regulations for road use is important. The focus in road regulations is on: age and condition of the truck and bus fleets; exhaust emission levels; and truck overloading/axle load control. Overloading of trucks is a common phenomenon in many developing countries, which increases wear and tear and maintenance costs. Checkpoints and weighbridges have been set up, but policing and enforcement are weak. Enforcing traffic regulations can be achieved by establishing consulting bodies, which include representatives from user groups. This approach has proved to be beneficial, where road user participation in the management of roads has created a sense of ownership and helped in the enforcement of the regulation.

2.2.3. Transport Sector Reforms

Government has an irreplaceable planning role in transport. This is partly because of the needs for active consensus building among different transport modes. But it is also due to the importance of transport infrastructure, and especially the road and rail networks, in structuring land use and regional development more generally. The absence of reforms, that have proved productive in some countries, is frequently caused by fears among labourers, but also among bureaucrats and less dynamic enterprises, of losing their acquired positions. This problem is in some cases exacerbated by laws and regulations, often dating back several decades.

Donors frequently support institutional reforms in the transport sector, particularly with the establishment of Road Agencies. However, problems are often encountered with Ministries of Transport and Works to refocus their activities on regulatory functions.

2.2.4. Institutional Set-up and Human Resources

A weak public sector is a general phenomenon in most developing countries. This also applies to most developing countries' road sector institutions that encounter structural problems, lack of qualified staff, and lack of human resource strategies. The difficulties in maintaining national and local road networks are closely linked to lack of institutional capacity.

When planning road sector interventions, the emphasis has typically been on the physical aspects and too little on the broader development aspects and institutional strengthening, resulting in a lack of attention towards creating the enabling environment for and sustainability of road sector development. Public sector capacity building, including the road sector, has been regarded as a collateral objective or instrumental measure to advance short-term project outcomes – rather than as a goal in its own right. Capacity building should preferably encompass institutional development, regulatory reform, and training with a short as well as a long-term perspective. However, it is important not to have too high ambitions with respect to institution and capacity building. In many cases, there has been a lack of realism from both donors and national governments about the rate at which change can be accomplished. With a low institutional capacity to begin with, there is a tendency to be over optimistic about the time it will take to achieve legislative and organisational change and to build human capacity.

Training and Staffing

Training is key in systematic human resource development efforts: short training courses, refresher courses, seminars and workshops – for all cadres of staff, ranging from managerial and administrative staff, plant operators and mechanics, stores personnel, to overseers and engineers⁵. The shortfall of professional staff, in engineering and accounting, is particularly critical for the road sector. Generally, road sector training programmes should be developed and supported within the framework of long-term master plans and be coordinated with restructuring processes. With the increasing need for training, strong in-country training programmes and institutions should be set up and supported, whilst donor-funded overseas training should be used less. In a long-term sustainability perspective, national training institutions should have the capacity to educate and train the various cadres.

With the increasing delegation of responsibility to autonomous agencies for managing the various transport sub-sectors and moving towards a commercial approach, a redefinition of related ministries' functions is important. Such redefinition implies large changes in numbers and qualifications of public agencies' staff. Besides training, it is important to assess and adjust the salary levels in the public sector to dimin-

⁵ Ref. Danida, pg 32 (Kenya Evaluation, 1997)

ish the gap to private sector salary levels to avoid the significant outflow of qualified staff to the private sector. The more lucrative opportunities in the private sector – and in neighbouring countries – make it difficult to retain the most qualified managerial and technical staff in the public sector. Within the public road sector agencies, it is important that the various salary levels are proportional to the roles and responsibilities of the individual staff groups to avoid de-motivation. In terms of employment policies, there is a widespread lack of institutional support in implementing gender-balanced policies.

Technical Assistance

The role of technical assistance (TA) is key to improving the road sector institutions' performance. As with loans, the number and value of TA for the sector has increased over time, particularly during the 1990s. In line with the changing objectives of road programmes, the nature of the advisory TA support has also changed over time. The initial focus on technical aspects of road construction, rehabilitation and maintenance has broadened to include planning and policy reform.

The use – and, to some degree, dependence – of foreign TA has increased due to lack of skilled staff in the road sector agencies – also due to increased emphasis on poverty alleviation, environment, gender issues, safety, etc., has increased the need. However, the critical perspective of TA is that while it is often used to fill skills gaps in the management of specific projects, related to immediate project objectives, it does not contribute sufficiently to capacity building. The level of donor funded TA is also found excessive – and in some cases without questioning the necessity and effectiveness of the TA. Therefore, the use of TA should focus more on knowledge transfer, and requiring counterpart staff to take over tasks and responsibilities. Further, TAs should only be used when there are no local experts to perform the tasks.

Procurement and Contract Management Capacities

Tender, procurement and contract management procedures and regulations in the developing countries often suffer a great measure of inefficiency. Inefficient bureaucratic processes, non-transparent tendering and accounting systems as well as a general lack of financial discipline are identified as main causes. Some national road agencies suffer from weak planning and implementation procedures resulting in delays and cost overruns. For roadworks: slow disbursement creates cash-flow problems that at times interrupt the work; tender boards awarding contracts to the lowest bidder, disregarding the actual quality of the goods offered; and purchase of sub-quality tools and equipment, and delays in project commencement due to late arrival of materials and equipment.

Obviously, one solution to addressing road sectors' poor procurement and contract management was donors directly interfering and taking over responsibility from the sector institution, thereby bypassing the government procedures and not addressing the critical institutional problems⁶. For the road sector to improve its institutional performance, donors and governments should: a) conduct rigorous assessments of the institutions' existing capacity and willingness to change; b) ensure that the regu-

⁶ Ref. Danida, pg 24 (Kenya Evaluation, 1997)

latory frameworks can support the changes proposed; and c) look for opportunities to make such interventions sustainable beyond the horizon of the immediate project through a more programmatic approach. The increasing interface between the public sector and the private sector also implied improved procurement and management procedures and capacity.

2.2.5. Road Safety

Every day around the world, more than 3,000 people die from road traffic injuries, with low- and middle-income countries accounting for nearly 85 percent of the death and 90 percent of the injuries⁷. The figures for developing countries is increasing rapidly; by 2020 it is predicted that road traffic injuries will be the third leading contributor to the global health burden. Road traffic injuries are a growing public health issue, disproportionately affecting vulnerable groups of road users in developing countries. Road traffic injuries cost low-income and middle-income countries nearly two percent of their GDP. The estimated cost of road accidents for the developing world is USD 65 billion per year, which is close to the total official development aid (multilateral and bilateral) received from the OECD countries.

Insufficient attention has been given to road safety. Safety is addressed in the design of transport infrastructure projects, but ex-post safety assessments are seldom carried out. Attempts to tackle transport safety at policy level have also been largely ineffective, partly due to lack of government concern. Completed projects with road safety components have had mixed results, and the outcomes have not always been sustainable.

While improved road surfaces and geometry have positive impacts, it also results in faster travel. The combination of fast-moving vehicles, slow-moving pedestrians, cyclists, and poorly maintained local vehicles, together with lack of safety awareness and bad driving skills, result in a high number of accidents and fatalities. In some developing countries, safety aspects are taken into account, but the measures are mostly limited to establishment of comprehensive road signing and setting of speed limits, which few adheres to. Government actions in relation to ensuring road safety are often ineffective.

A positive development is the widening and surfacing of shoulders, which provides safer passage for non-motorised transport. Another emerging practice is the consultation with the affected communities on complementary social activities and safety measures. TA is found useful in improving awareness of the need for road safety and in imparting specific technical knowledge to concerned agencies in the fields of accident analysis, traffic engineering, design of low-cost counter-measures as well as safety audits of designs and of construction works. The direction now is toward a more cohesive approach whereby the problem would be tackled on a multidisciplinary and cross-sectoral basis.

⁷ Ref. WB, pg 16 (Evaluation 2007)

Box 2.2: Measures to improve road safety

- Good baseline data and monitoring information is needed;
- The organisations responsible for ensuring road safety should have the necessary capacity and expertise – including the police’s enforcement capacity;
- The responsibility should be shared in a coordinated way among the involved agencies;
- The reporting of accidents and fatalities should be done consistently and accurately;
- National and local activities on road safety, involving the private sector and NGOs, should be encouraged;
- Black spots should be identified and safety audits and safety education carried out;
- Specific provisions in road design, such as improved lines of sight, better road geometry, road markings, and signs, should be incorporated;
- National road safety research and data collection should receive more funding.

2.2.6. Local Government Involvement and Decentralisation

Only one of the selected evaluation reports addresses the issue of local government involvement and decentralisation. The evaluation found that feeder road maintenance at the district level was only partly achieved. The problems experienced were a lack of qualified staff in the district administrations and limited support. Therefore the evaluation proposed grouping of districts in larger ‘road areas’ to give more balanced options between the desired level of decentralisation and the warranted efficiency of road maintenance operations. Decentralisation of road maintenance in the larger urban administrations was more successful than to the rural district administrations – mainly due to the larger scale of operations.

2.2.7. Non-State Actors’ Involvement

The involvement of non-state actors in the development and implementation of transport and road policies and projects is generally limited. The optimism in the early 1990s, that the private sector would assume a large part of the responsibility for infrastructure in the developing countries, suffered from too ambitious market expectations – but the private sector is, however, playing an increasing role in the road sector. As for the civil society’s involvement (NGOs, road users’ associations, etc.), efforts to ensure their involvement in the design and implementation of policies have been limited and less successful than anticipated.

Private Sector Participation

Governments in the developing countries increasingly look to the private sector to finance and develop large infrastructure projects. But private sector involvement raises issues about ownership, financing, and potential conflicts between commercial and national interests. Full concessions, however, remain concentrated in middle-income countries, but even one or two concessions in a low-income country can

have a dramatic positive effect. There are instances where even poor countries with uncertain prospects have been able to attract foreign investments.

Local private construction companies' capacity is often very limited. In some cases, even smaller contract packages are often carried out by force account, just as road maintenance work. Thus, there is a need to nurture and promote the local private construction industry – specifically for medium and small-scale works – by reserving some works for the local private contractors, as well as by providing assistance in terms of training for bid preparation and construction management, and provision of credit facilities. Governments could also procure equipment and tools for hiring out to the contractors or could on-lend the loan proceeds at soft terms for contractors' own procurement. Furthermore, business connections between international and local private companies should be promoted, making the local private companies more competitive on the national market.

Road transport services are fully privatised in nearly all developing countries. Care should be taken that privatisation does not include undesirable effects: selection of the most profitable routes; increase of fares; neglect of safety; and imbalances in the competition between the different transport modes. Privatisation of transport services should be accompanied by an enforcement and regulatory framework.

The private sector involvement grows at different rates in different developing countries. It depends on history, culture, socio-political circumstances, and the ability of governments to provide an appropriate regulatory framework, political consensus in favour of private provisions, and policy choices as well as private capacities. Efforts have been made in some countries to create space for the debate on transport policy issues through the conduct of workshops on an annual basis with the participation of the private sector (transporters, contractors, and consultants), transport users (although to a lesser extent), government agencies and donors. The SSATP promotes the creation of boards and coordination committees with private sector participation. In countries with road funds and road agencies, representatives from the private sector frequently participate in the boards of these bodies.

Civil Society Participation

As mentioned, the level of civil society involvement in the road sector in the developing countries is limited. The involvement is in most cases in the form of informal discussions with government on policy issues. Civil society representatives, notably NGOs, are generally not invited to take part in road sector decision-making, unless they undertake activities directly related to the sector. The lack of involvement of the civil society is, however, not an issue specific to the transport and road sectors, but rather a question of lack of good governance, which in most cases applies to all sectors. Generally, a more long-term co-operation with qualified local NGOs should be made in order to ensure their continued involvement.

2.3 Planning and Management

2.3.1. Programming and Budgeting

The main quantifiable benefit for roads projects is the Vehicle Operation Costs (VOC) savings. These accrue initially to the owners of the vehicles, but the benefits are expected to lead to broader impacts through reduced transport costs on agriculture, industry and trade. The general requirement for major roads is that the accumulated VOC savings lead to an Economic Internal Rate of Return (EIRR) above 10-12 percent.

Roads projects generally achieve the estimated EIRR, but there are exceptions as well. A common cause for benefits not measuring up to appraisal expectations is over-optimistic estimation of future traffic flows. This points to a need for more comprehensive assessment of traffic and traffic growth assumptions as well as the conduct of sensitivity analyses of possible variations in traffic scenarios. Under-achievement of forecast traffic volumes often occurs when the road projects are planned to stimulate certain development needs, e.g. agriculture, industry, etc. If the development needs do not materialise, for example due to lower than planned investment and other facilitating services, the traffic volumes do not evolve as forecast.

Most of the WB financed road projects are justified by an economic appraisal based on transport cost savings. 'Net present value' and EIRR for major roads are often calculated using the Highway Development and Management System (HDM-4). For low-volume roads, the Roads Economic Decision Model for assessing road investment options is used. Neither of the models looks at the distribution of benefits nor at the wider impact and multiplier effect on the economy. If present and future transport challenges are to be met, then environmental issue and sustainable development must be more prominent in the design of future transport projects⁸.

Traditional transport planning approaches have been generating transport systems that propagate an unfair distribution of accessibility and reproduce safety and environmental inequalities. A sustainable livelihood approach provides a framework for linking transport to social impacts. A main challenge for adopting this approach is the development of effective channels of communication to the central policymakers. There is some empirical evidence of successful community participation in road planning, but there is also a risk that it is the more affluent segment of the community setting the agenda. Capacity building of the community/ civil society groups to negotiate with relevant local authorities could facilitate better results from the community participation.

Rural roads programmes should preferably focus on the provision of access as the main objective and should be far more integrated into the local planning systems. A network approach to road planning should be adopted, which establishes a maintainable core road network system, and integrates road planning and overall local level planning.

⁸ Ref. WB, pg 11 (Evaluation 2007)

2.3.2. Financing of Investments and Recurrent Expenditures

In developing countries, investment in rehabilitation and development of transport infrastructure is to a very large extent financed by foreign donors and the countries are likely to continue to rely on external funding for a long period. With the exception of the poorest countries with an extremely weak economic base, governments and donors agree that maintenance of infrastructure should be financed from domestic sources. Whether developing countries in future will be able to devote more budget resources to investments in the transport sector remains an open question. Due to the poverty focus, donors are advising governments to increase the budgetary share of the social sectors. In situations with prolonged public revenue constraints, an increase of the transport sector share is unlikely and its contributing development effects are thus eliminated.

Ensuring financial sustainability of transport sector investments implies that adequate resources are available for proper maintenance and operation of transport infrastructure. EC and other donors have made it clear that maintenance of roads should be financed from domestic resources. From the mid-1990s, Medium-Term Expenditure Frameworks (MTEF) have been developed in many countries to guide sectoral allocations and to ensure that policy decisions – notably those related to poverty reduction strategies – are properly reflected in the budget. All donors should provide periodic status reports on loans and grants to make the MTEF or similar arrangement function efficiently.

Sustainable road maintenance initiatives depend on a continuing commitment by governments and a steady flow of funds. Inadequate maintenance seriously undermines the sustainability of the assets or the benefits from them. The economic cost of poorly maintained roads is heavy and borne primarily by road users. Inadequate maintenance hurts the economy in two ways: in the short-term it increases VOC, which could be two to three times higher than the avoided maintenance cost; and in the longer-term, rehabilitating/reconstructing paved roads every 10-20 years is more than three times as expensive, in cash terms, as maintaining them on a regular basis. Sources of funding for maintenance are not always identified at the time of appraisal or mandated in the loan agreements. A contributing factor to the neglect of maintenance was donors' willingness to finance rehabilitation projects under the development budget, providing governments the incentive to favour rehabilitation rather than maintenance.

Road maintenance activities worldwide are normally financed through one of two approaches: 1) through the budget; or 2) by means of a road fund. Budget allocations to the road sector result from a political process that assigns priorities to alternative expenditure options. Budget allocations can also form part of a multiyear expenditure framework. Road funds, in contrast, are outside the budget and based on the principle that road users should pay for the cost of the roads and that revenues generated should be applied to cover such costs. A key reason for setting up a road fund is that road maintenance is not a political attractive use of government reve-

nues, even though road maintenance yields the highest economic return. The IMF takes the view, however, that extra budgetary funds fragment the budgetary process and create unnecessary risks in allocation of resources.

With a single exception, all road funds in Sub-Saharan African countries have 90 percent or more of their revenue originating from fuel levy and other user charges. Fuel levies are best directly transferred to the road fund account by the tax administration or directly paid to the road fund by the fuel distribution companies. Only 10 of the 22 road funds (2004) in Sub-Saharan Africa have such direct transfers, while the Treasury earmarks the revenues to the other 12 road funds. In 2003, only 6 road funds had revenues large enough to cover the cost of routine maintenance. Road funds may come under pressure from governments also to finance part of the rehabilitation work. Other sources of revenue could be a road user fee and vehicle licences, allowing for differentiation between heavy and light vehicles.

Road funds will only be successful if there is a government commitment to off-budget financing of maintenance and to commercially oriented reforms of road management. A road fund should not be contemplated if there is a high level of corruption and little likelihood of having independent audits and transparent procurement. The developing countries have the most to gain from the road fund approach, especially those that have a history of chronic under-funding of asset maintenance.

In some cases, the road funds' flow of funds was not reliable with releases being made on an ad-hoc basis. Delays in payments due the complicated authorisation procedures resulted in contractors increasing their cost estimates in anticipation of delays and at times stopping their work.

2.3.3. Performance Monitoring and Indicators

The broader economic impacts of road projects are commonly not quantified, two reasons being that: the causal relationships may be difficult to determine; and it is difficult to isolate the impact of an improved or maintained road from other factors that effect socio-economic development of an area. Road improvements can stimulate broader development, but they are not always sufficient in themselves. Complementary development of a more direct nature may be needed to produce the desired response. In order to capture the qualitative impact of transport infrastructure on poverty alleviation, two aspects need to be addressed: a) its contribution to aggregate economic growth; and b) its influence on the distribution of growth between different socio-economic groups. There is a need to identify indicators that link transport/road sector performance to national development objectives, poverty alleviation and MDGs.

There is correspondingly a need to identify transport sector interventions' contribution to national development objectives, e.g. poverty reduction as well as a focus on institutional capacity building. Because of lack of methodologies for quantification of the benefits of improved access that rural roads provide to education, health, recreation, and administration facilities, these are not captured in the benefit stream.

Because of this, many rural roads projects loose out in the process of prioritisation based on quantifiable benefits and EIRRs. Well-defined multi-criteria thus need to be developed to measure the socio-economic impact, and to be applied during design, feasibility assessment, appraisal and evaluation. The needed baseline information is often not available, monitoring of progress not always done systematically, and evaluations are rarely conducted, which could otherwise ascertain the level of impact.

The need for more effective monitoring at country level has been identified – with an even greater emphasis on the smaller and weaker economies and in countries with unsettled institutional, political and economic conditions. Similarly, there is also a need for effective monitoring during programme/project implementation as regards status of assumptions, activities, outputs, and the likelihood of attaining objectives and goals. In some cases there is no clear approach to address the cross-cutting issues such as poverty alleviation, gender, HIV/AIDS, environment, and private sector participation – and hence the cross-cutting issues were not monitored. Self-monitoring could be the preferred solution, but it has proven difficult to integrate the procedures in the national agencies' operations. External monitoring may be more effective, but concerns are raised about the costs.

In general, the availability and reliability of transport sector data is very deficient – especially so in the less developed countries. It will thus be important to encourage and assist countries to develop and maintain a transport database (i.a. passenger and fleet capacity, traffic flow, reduced travel and waiting time, modal split, road conditions, improved safety, etc). As much of the traffic on low volume roads is non-motorised, it would be important to include this aspect.

2.3.4. Construction and Rehabilitation

PRSPs often give priority to the contribution to economic growth, which frequently results in construction and rehabilitation of the primary road network being given the highest priority. The objective for construction or rehabilitation of main roads is usually defined in terms of reduced VOC and savings on maintenance costs. Major road projects are frequently tendered regionally or internationally both as regards engineering and construction.

Improvement of minor roads frequently follows the existing vertical and horizontal alignment. Realignment is mainly carried out if there is strong technical, environment, or safety justification – or if the road has completely deteriorated beyond recognition. The ideal situation is to have well designed drainage systems, which provides all-weather access and efficiently withstand erosion caused by heavy rains. Minor roads are frequently constructed rehabilitated by using labour-intensive methods, which provide local incomes and reduce the need for expensive equipment and fuel.

Construction costs are often dictated by the availability of local materials. The shortage of good quality gravel has necessitated innovative new techniques and ma-

terials for road construction. Developing long lasting road surfaces requiring low maintenance provides combined economic and environmental benefits. Sustainable road construction in fragile environments is particularly important, as there are areas where degradation of the natural environment may never be completely reversed.

2.3.5. Routine and Periodic Maintenance

A lack of capacity to preserve infrastructure assets after construction is a problem confined mostly to developing countries. Inadequate maintenance budgets in the face of widespread poverty, as well as lack of skills and political stability, have all contributed to the concerns about the adequacy of asset preservation, especially in the more fragile countries. Positive results have been achieved through introducing a degree of management autonomy, better assurance of funding, greater public participation and more involvement of the private sector.

Lack of maintenance of infrastructure assets leads to premature deterioration and loss of potential benefits. In some countries, governments prefer to extend the road network – thus increasing the total length of roads that needs to be maintained – rather than channelling the funds to maintenance. This does not necessarily lead to loss of roads in the short-term, but to a significant loss of potential benefits and inefficiency. Investments are sometimes made dependent on government commitment to maintenance and obligations are sometimes also added as a loan condition. Some donors support periodic maintenance.

In a few countries where ‘second generation’ road funds have been introduced and where information is available, there has been evidence of a significant increase in the percentage of road in good condition. There are currently 27 road funds (2007) in SSATP member-countries, and in only one-third of the cases are such funds regularly meeting routine expenditure needs. Although the introduction of road funds in some countries has improved the likelihood of sustainability, there are other countries where this will not happen because of economic or political instability.

Routine maintenance is either contracted to local companies or, in the case of rural roads, is carried out by villagers through an agreement between the village authority and the contracting authority. Periodic maintenance is most commonly contracted to local companies. Situations frequently occur where local capacities are insufficient to meet maintenance needs.

2.3.6. Labour-based Methodologies

Many rural road projects involve basic access roads using labour-intensive construction. A labour-intensive approach generates employment, but it also requires good technical assistance support and strong client commitment, which is sometimes lacking. But such roads are high in demand by the rural population.

It has been demonstrated that large structures built using labour-intensive methods could cost about one-third less than equivalent works constructed through govern-

ment agencies⁹. Small infrastructure works such as foot rails, spillways, and suspension bridges can benefit large numbers of people. A study in India indicated that expenditures on roads had by far the largest impact in reducing rural poverty. Public works have also been used to reduce vulnerability during recessions, natural disasters, in areas of extreme need, and as a safety net to prevent people from falling into destitution.

2.4 Cross-cutting Issues

2.4.1. Gender Equality

In road sector programmes and projects, gender is seldom explicitly addressed at the time of project conception or preparation. Target groups tend not to be well defined – with neither project documents nor work plans incorporating gender or disaggregating gender-specific benefits or activities. The lack of a gender strategy in road projects results in lack of priority given to female participation. Further, gender is seldom an important issue on the agenda of transport ministries; while it is most often mentioned in overall statements it is often not addressed specifically in road sector interventions. When failing to address the different needs of men and women in relation to the road sector, there is a risk that existing gender inequalities in developing countries are repeated in road sector policies. This relates to the lack of gender balance in decision-making in the target ministries and in the policy dialogue with stakeholders; a dialogue which should be actively sought, in order to also improve the living conditions of women not only within the roads sector, but also more broadly, in terms of employment, access, etc.

The potential exists to increase women's employment opportunities during and after road construction and through maintenance activities, just as the improved access to farms and markets increases women's employment opportunities in agriculture and other sectors. But there is a lack of effort and institutional support towards the implementation of gender sensitive employment policies, despite the shared understanding in road related ministries and agencies that female workers are often more reliable and hardworking than their male counterparts. It is, however, suggested that the low level of female participation in the road sector is due to the notion that roadwork is too strenuous for women¹⁰. When employed, women are most often assigned tasks giving the least pay. One of the ways to ensure equal employment opportunities would be to include gender as part of the employment policy and training interventions and through positive discrimination of women. However, it is also important to take care that employment policies in the road sector do not add to rural women's workload, which is already very heavy.

A main impact of more and improved roads on gender equality, or women's welfare, is increased access to health services. This reduces, among others, maternal and child mortality rates. Improved roads increase access to education – and, with that,

⁹ Ref. WB, pg 59 (Evaluation 2007)

¹⁰ In this regard, it is important to note that when it comes to free labour on public works, such as road maintenance, there often seems little hesitation in assigning strenuous tasks to women.

increased enrolment of children (particularly girls) in schools. In addition, safer roads can contribute to encouraging parents to send their daughters to school. The improved access to farms and markets enables women to take more part in income generating activities. Improved roads may also reduce women's heavy chores due to easier access to water and firewood – lifting this burden on women may in turn improve childcare, if the burden is not immediately transferred to other activities.

It is recognised that by channelling more investments into infrastructure and services that are used by and being more appropriate to women, the time women spend on transport activities can be reduced with significant poverty alleviation implications. The time to be saved by women because of more and better access to markets, services, etc., can effectively be factored into evaluations. More in-depth studies on the impact of changes in the road sector on gender aspects are needed, especially considering the significant differences in men and women's access to and use of transport, as well as gender specific mobility patterns.

2.4.2. Environment

The analysis of environmental issues in the design of road projects is sometimes ad-hoc and isolated, but the awareness of the environmental impact of road construction has increased in ministries and road agencies. Adopting the Environmental Impact Assessment (EIA) standards as part of the detailed engineering design has shown good results. However, the appropriate incorporation of environmental aspects in project selection and design depends frequently on donor assistance. In this regard, there is a need for donors to reach internal consensus on how to advise clients on environmental issues. EIAs have focused more on construction than on generated traffic and long-term effects. More recent EIAs increasingly cover the social impacts of projects – both during and after construction. There are cases, however, where there have been no consultations with the local populations.¹¹

The most serious adverse impacts from road construction are air and water pollution, loss of wildlife habitat and reserves, lack of adequate vegetation cover on high excavations and embankments exposing them to erosion, slope erosion, cutting down of trees, improper dumping of soil into watercourses, etc. Also, road projects can contribute to swamps and an increased incidence of waterborne diseases. Despite these risks, major negative environmental impacts are rarely mentioned in relation to planning, design and implementation of road and road transport projects.

Not all environmental impacts are detrimental. Paving earth and gravel roads through villages help reduce dust and thus improve the health of roadside residents, just as road drainage works help eliminate areas of stagnant water and ponds, thereby controlling and preventing water borne diseases. Changes in land use patterns due to improved road networks may also contribute to rendering land more productive – thus potentially increasing farmers' income. Also, better road surfaces

¹¹ Within this context, the legal obligation to also carry out Strategic Environmental Assessments on all road programmes is enshrined both in an EC SEA Directive as well as through the ratification of the SEA protocol of the Espoo Convention. However, the implementation of these directives still leaves a lot to be desired.

promote greater energy efficiency by enabling vehicles to travel at more fuel-efficient speeds¹². Lastly, improved road networks in densely populated areas facilitate waste management, moving the waste from the source to the site where it is disposed of or recycled appropriately.

The number of environmental disasters is on the increase due to pollution and carbon dioxide (CO₂) emissions. These disasters hit the poor over-proportionally hard, and therefore there is a need to elaborate and implement sustainable transport policies. The Kyoto Agreement has far reaching implications for the developing world as their contribution to the global CO₂ burden increases with increased motorised transport. In 2002, the developing world's share of total CO₂ emissions was predicted to rise to 26 percent of the global total over the next two decades; this represents a 46 percent increase on 1997 levels. Road transport accounts for nearly a quarter of the man made gasses contributing to climate change. However, national authorities in some developing countries do neither monitor transport emissions nor the indirect impact of increased traffic (respiratory diseases, injuries, etc. leading to increased health-care costs).

National plans have a 20-year planning horizon, while project appraisals typically have a 5-15 years horizon. However, road projects' environmental impacts have even longer-term implications (land use changes, deforestation of rural areas, increasing motorization with traffic congestion, air pollution etc.) Hence there is a need to expand planning horizons to also incorporate the long-term environmental implications. The opportunity for the road sector to complement the goal of environmental sustainability is subject to the countries' value systems, their institutional strength and political will.

2.4.3. HIV/AIDS and Health

The link between the road and health sectors, and especially HIV/AIDS, is significant. But until recently, there has been a lack of attention to this issue by both donors and governments. While improved infrastructure may contribute to a spread of the pandemic, the road sector can also be mobilised in limiting the spread of HIV/AIDS. There are three critical areas where particular consideration is required: 1) construction and rehabilitation of road projects, which frequently have a large influx of migrant workers, often practising risky sexual behaviour; 2) the increased mobility along the improved roads, with increased risk for the spread of HIV/AIDS; and 3) the activities at border crossing points (as well as at other traffic barriers such as weigh bridges, toll booths, etc.), where the informal sector – including sex workers – sell their wares and services.

Governments are increasingly aware of the risk of the spread of HIV/AIDS in connection with road sector interventions. The HIV/AIDS aspect lacks institutional support, mainly because its linkage to the road sector is not fully recognised by most transport ministries and road sector agencies, although policies in many instances

¹² However, in this context, the negative impact should also be noted; that greater speed may contribute to an increase in both road accidents and deaths in traffic.

have been formulated to combat the spread of the disease. This calls for closer co-operation between the health and road sectors, with special consideration to major transit corridors. There is a gap between the intent of the policies and their implementation: HIV/AIDS is included in programme/project designs, but the mechanisms are not in place to enforce compliance. Moreover consultants and contractors rarely have the necessary in-house knowledge to implement and monitor the mitigation measures, and are reluctant to buy in this knowledge unless this is made mandatory. The HIV/AIDS issue should be integrated into the regular progress reports. There is an obvious need for competent HIV/AIDS advisers as well as training of road sector staff.

Nonetheless, the road sector also has a facilitating function in the fight against HIV/AIDS as more and better roads increase and improve access to prevention, testing and care. HIV/AIDS components should be an integral part of road projects, especially in Africa. But there is also an important task for donors, in helping transport and road ministries develop harmonised policies on HIV/AIDS, in the context of regional collaboration, considering the high HIV/AIDS prevalence along major international transport corridors.

The lack of access due to few and bad roads has a significant impact on the general health condition of people in developing countries. WHO statistic states that more than 40-60 percent of the people in poor countries live more than 8 km from a health care facility. Another study indicates that at least one-third of rural women in developing countries live more than five kilometres from the nearest health facility, and around 80 percent live more than five kilometres from the nearest hospital. There are many studies providing evidence of the negative impact of poor and unaffordable transport services on maternal, infant and child health and mortality; during pregnancy and childbirth women need quick and affordable access to care, including emergency obstetrical care. Easier and more affordable access to health facilities also means that: other diseases, such as malaria and tuberculosis (TB), will be detected and treated earlier; health facilities will be better equipped since medical supplies can be more easily delivered; dissemination of health information is facilitated; and health personnel can be better attracted when areas with difficult access become less so.

2.4.4. Good Governance

Only two evaluations (WB and ADB) specifically addressed good governance, corruption and democratisation. There has been a lack of comprehensive evaluation of the performance of road projects on improving governance. However, improvements have been noted in two main areas: 1) through policy dialogue and greater objectivity in the planning and allocation of budgets for roadworks and maintenance; and 2) through the provision of consultants for construction supervision and for assistance with tendering and contract awards. While significant results have been achieved in the technical areas of data generation and planning, less has been achieved in the more politically related prioritisation of works and budget allocation. The inclusion of international consultants in implementation of roadworks has

proved useful in reducing pressures on local staff and domestic consultants to be enticed into entering into corrupt practices.

With the lack of anticorruption strategies in the transport sector, there are examples of corrupt practices especially in large construction projects, but evidence of corruption can be very hard to find. Major differences between expected and actual costs, for example, can be attributed to many different factors – these could be a result of corruption or, for example, clients having failed to understand the donor procedures. The increased focus on rooting out corruption has heightened understanding and awareness by staff and clients as to what constitutes corruption, leading to improved systems and routines for identifying and reducing corrupt practices. Building ownership within countries and gaining high-level commitment is suggested as a way to address corruption – and, in addition, building up a system of enforcement to encourage compliance. Road funds should not be used where there is a high level of corruption and little likelihood of independent audits and transparent procurement¹³.

2.5 Donor Support

2.5.1. Donor Policies

Recognising infrastructure was linked to growth and poverty reduction, the WB shifted its attention back to the transport sector in 2002. While the fundamental pillars of the WB transport strategy remain valid, the updated strategy (draft 2007 - 15) calls for additional emphasis on issues related to poverty reduction, international trade, the environment (especially in cities), and safety. The WB erred in reducing commitments to the transport infrastructure so severely in the late 1990s, despite warnings in the *Sustainable Transport* paper¹⁴ that filling the investment gap through private sector funding was unlikely to succeed.

The main limitation of EC's intervention in Africa-Caribbean-Pacific (ACP) countries was a nearly exclusive focus on the road sector and an insufficient attention to development of transport related activities and to cross-cutting issues. While EC is strongly supportive of regional organisations' efforts to harmonise legislation, regulations and standards, EC could have emphasised these aspects more in the dialogue with governments. Very few attempts were made to improve the regulatory framework for transport services and to develop the capacities of the private sector (consultants, contractors, and transporters). Moreover, insufficient attention was devoted to safety, environmental protection, health risks, and gender¹⁵.

With the MDGs, poverty alleviation has become a main theme. Not all donors mention poverty alleviation as an explicit objective of their support to road programmes and projects, but the link is recognised. The project selection process is mainly based on cost-benefit aspects and less on poverty alleviation and regional develop-

¹³ Ref. WB, pg 77 (Evaluation 2007)

¹⁴ World Bank. *Sustainable Transport: Priorities for Policy Reform*, 1996.

¹⁵ Ref. EC, pg iv (Evaluation 2004)

ment aspects. But poverty reduction is increasingly being incorporated into donors' transport and road sector strategies making the contribution of the road sector to poverty alleviation a joint ambition. The donors have showed insufficient attention to cross-cutting issues such as environmental protection, health, HIV/AIDS, gender, affordability and safety. The acknowledgement of the transport sector being one which cuts across other sectors requires a multi-sectoral multi-dimensional approach, which in turn calls for a focus on and scaling up of programmatic, multi-donor approaches.

2.5.2. Donor Harmonisation and Alignment

In a number of African countries, progress towards a sector-wide approach (SWAp) for the transport sector is to a large extent the outcome of a policy dialogue between governments and donors. In developing countries, the EC and the WB play a major role in donor coordination. Governments and donors strongly concentrated on the road sector, as investments and institutional reforms were mainly related to this sector. Other transport modes and issues of inter-modality were given much less attention. In some cases, the efforts devoted to the road sector even led to deterioration of other transport modes. Transport master plans taking into account all transport modes and their interrelationship is a need still to be addressed.

There is a clear link between those countries showing limited progress in the transport sector and fragile states with a high level of corruption¹⁶. Donors could be much stronger on donor coordination in fragile states, but need to be much more focussed on capacity building. More programmatic lending and coherence to SWAp designed to achieve specific capacity building objectives could contribute to better results.

Some donors have experienced problems of coordination between the financing partners in the road sector and a lack of harmonisation of their conditions and procedures resulting in delays in disbursement and implementation. There is thus a need for the establishment of effective mechanisms for coordination between financing partners. Other donors have experienced, when there is an enabling framework in place, that there was a commitment among donors to coordinate and unify their activities. In these cases, donor interventions have generally been in line with government policies (e.g. poverty alleviation, environment, safety, inclusion of non-motorised traffic, institutional capacity, etc.) with minimal overlaps. However, procedures for appraisal and reviews, implementation and procurement, monitoring, accounting and auditing and reporting are still in need of further harmonisation. Coordination between government and donors benefits from regular meetings and a consistent donor approach to coordination.

¹⁶ ¹⁶ Ref. WB, pg 67 (Evaluation 2007)

3. Conclusions and Recommendations

Whereas Chapter 2 mostly presents generalised findings and lessons learned, this Chapter presents donor specific conclusions and recommendations within the overall contextual framework of the Synthesis Report.

3.1 Conclusions

Danida, Ghana, Joint Evaluation of the Road Sub-Sector Programme (1996-2000), 2000 – sector evaluation: Most donor interventions covered several of the many sub-objectives formulated by the government. Donors stated that their interventions were formulated on the basis of the national road sector framework. While most donors stated poverty reduction as the overall objective, different emphases were placed on its attainment. Some donors concentrated on trunk road rehabilitation, while others concentrated on rural and/or urban roads – but none had earmarked specified regions. However, the road sector had failed to indicate its contribution to poverty alleviation. Difficulties, among the donors, were encountered in finding common arrangement for implementation, accounting, and reporting.

The Ghana Road Fund (GRF) had performed well since its establishment in 1997, and revenues for maintenance were steadily increasing. However, recurrent expenditures were behind the programmed level, whereas development expenditures were above. Government and donor disbursements were below the programmed level and release of funds was generally delayed due to cumbersome approval procedures.

The restructuring of the road sector institutions progressed reasonably well, but the transition to the new and leaner structures was slow, as the retrenchment programme did not materialise as planned. The public road sector agencies had difficulties in retaining and recruiting highly qualified staff, as the private sector offered better incentive packages. The progress in implementing the axle-load programme was slow, leading donors to request that firm action be taken.

Sida, Feeder Roads Programme, Mozambique (1992-2000), 2000 – evaluation: The socio-economic impacts of rural roads interventions were generally positive. The roads contributed to increased agricultural and commercial development and improved accessibility. The impacts could not be adequately documented due to lack of baseline information and proper collection of quantitative data. Labour-based methodologies were applied and the standard of rehabilitation and maintenance work was generally good. A substantial amount of new equipment was supplied, which some-

how distorted the balance between equipment-based and labour-based resulting in more equipment intensive operations.

The 'force account' approach was applied which combined with the labour gangs' easy access to equipment constituted a disincentive to the emerging private sector companies. The labourers benefited both in terms income and experience, but since the labourers were engaged on a relative permanent basis these benefits were not disseminated to the communities located along the rehabilitated roads. Gender equality was successfully promoted. The main thrust during implementation was on reaching physical targets and less on institutional development and capacity building.

AfDB, Experience and Lessons from Road Sub-Sector Projects and Programmes (1981-2000), 2000: AfDB financed road projects in African countries were found to have economic impact and generated ample benefits for the target populations. However, there is a need to improve the efficiency and effectiveness of interventions and maximise development impact and sustainability.

DFID, Transport's Role in Achieving the MDGs (1994-2001), 2002: Evidence endorses the fact that transport plays a very important role across all sectors, and has a significant role in achieving the MDGs. There are conceptual and methodological gaps in the technical and economic orientation of much transport research, which is problematic in ensuring the multidimensional role of transport in addressing poverty.

EC, Interventions in the Transport Sector in Third Countries (1995-2001), 2004: Since the early 1990s, EC interventions in the transport sector in the African countries have made significant progress towards a sectoral approach. The main thrust has been on promoting economic growth and thus emphasising the primary road network and maritime ports. A close partnership with government enhanced the relevance of the interventions, but progress was uneven as regards partner countries' commitment to implement reforms. EC interventions contributed to formulating and implementing transport policies and ensuring adequate maintenance of transport infrastructure. The involvement of non-state actors in development of transport policy and implementation of projects remained limited. Increasing attention was given to environmental issues, but other cross-cutting issues have not been adequately addressed.

WB, A Decade of Action in Transport (1995-2005), 2007: There is a need to identify project contributions to national development objectives, e.g. poverty reduction – including attention to pro-poor transport pricing/subsidisation policies – as well as focus on institutional capacity building. It should be acknowledged that the transport sector cuts across other sectors, which requires a multi-sectoral approach. More attention should be given to cross-cutting issues, especially affordability, safety, social, political, and environmental issues. Increased attention should be placed on long-term impacts stemming from transport, e.g. expanded land use, deforestation of rural areas, increasing motorisation such as traffic congestion causing increased air pollution, noise, and traffic accidents.

3.2 Recommendations

Danida, Ghana, Joint Evaluation of the Road Sub-Sector Programme (1996-2000), 2000 – sector evaluation: The road sector's contribution to poverty reduction and socio-economic development should be more clearly demonstrated and indicators defined that establish the links between transport and the MDGs. The road sector should extend its focus accordingly and its institutions should take ownership of the policy development process. A monitoring system should be created that clearly demonstrate the road sector's contribution to the national development objectives in order to attract an adequate level of government and donor funding. This broader perspective of the transport sector should be clarified, which would facilitate multi-donor budget support.

High priority should be given to the GRF revenue generating capacity to meet the maintenance needs on a sustainable basis and to provide funds on a timely basis. Besides the fuel levy, a differentiated road user charge should also be applied. The GRF staff level was limited compared to international standards, making it difficult to perform optimally.

Increased private sector participation should be pursued, e.g. surveying and design of roads and bridges could be contracted out. A more comprehensive approach to safety should be adopted urgently. The design of the axle-load survey should better record the type of truck and its axle pattern.

Sida, Feeder Roads Programme, Mozambique (1992-2000), 2000 – evaluation: Support should be provided to enhance the capacity of provincial road departments to enable them to handle the programming of rural road interventions. Support should also be provided at the national level to promote the tertiary/rural roads within the evolving institutional framework and be linked with the road sector reform process.

AfDB, Experience and Lessons from Road Sub-Sector Projects and Programmes (1981-2000), 2000: The AfDB recommended that a rural transport policy is developed and that rural roads be given greater emphasis and allocation than has been accorded to them so far. AfDB's guidelines on poverty alleviation and cross-cutting issues should be addressed in a more focussed manner. Methodologies and tools should be developed to measure impact of social benefits and be used when conducting appraisals and evaluations. When undertaking new road construction and rehabilitation projects, the annual allocation of maintenance funding should be assessed.

DFID, Transport's Role in Achieving the MDGs (1994-2001), 2002: With the multidimensional nature of poverty, there is a need to determine different types of transport interventions for different kinds of the poor – and this requires appropriate research. Determining research priorities requires multi-disciplinary inputs and the participation of transport professionals, policymakers, and users in developing countries. Knowledge creation on the link between transport and poverty eradication (the MDGs) will benefit from the experience and perspectives of southern stakeholders and poor people in particular.

EC, Interventions in the Transport Sector in Third Countries (1995-2001), 2004: The evaluation recommended that more focus should be placed on transport interventions' contribution to poverty alleviation and that the transport sector should be broadened to cover all transport modes. Increased attention should be placed on cross-cutting issues, i.a.: environmental protection, health risks during construction and in connection with increased mobility, appropriate integration of gender issues, and transport safety. Increased attention should, furthermore, be placed on: development of the private sector, involvement of non-state actors, and capacity development. Sector budget support should be considered as a means creating increased government ownership. The scope of project monitoring should be extended to include outcomes and impacts and better use of evaluations should be made.

WB, A Decade of Action in Transport (1995-2005), 2007: The WB recommended that more attention should be given to issues of growing urgency, including environmental damage, energy efficiency and climate change, traffic congestion, safety, affordability, and trade. It is further recommended that WB prepares a transport strategy, which among others includes: greater attention to pollution and realising environmental gains, continuing support to private sector participation, governance and corruption issues, and redeploying staff and budget resources accordingly. Lastly, it is recommended that the transport sector's monitoring and evaluation efforts are strengthened, launching of an enhanced programme of rigorous impact evaluation, comprehensive self-evaluation of the experience with SWAs, and an independent overview of the SSATP Programme.

Annex 1: List of Identified Evaluations and Studies

A: Selected Evaluations and Studies applied for the Synthesis Report

<i>No.</i>	<i>Year</i>	<i>Title</i>	<i>Type of report</i>	<i>Donor/ Publisher</i>
1.	1997	Kenya, Evaluation of Minor Roads Programme	Evaluation	Danida
2.	2000	Ghana, Joint Evaluation of the Road Sub-Sector Programme, 1996-2000	Evaluation	Danida
3.	2000	Mozambique, Feeder Roads Evaluation	Evaluation	Sida
4.	2000	Study on Bank Group Experience and Lessons from Road Sub-Sector Projects and Programmes	Study	AfDB
5.	2001	Paving the Way to Poverty Reduction through Better Roads	Evaluation	ADB
6.	2002	Transport's Role in Achieving the MDGs	Research Paper	DFID
7.	2004	Ghana, Follow up study – Joint Evaluation of the Road Sub-Sector Programme, 1996-2000	Follow-up Study	Danida
8.	2004	Bangladesh, Evaluation of the project “Development of Rural Roads and Markets”	Summary of Evaluation	GTZ
9.	2004	Taming HIV/AIDS on Africa’s Roads, Africa Region Findings 236: A note on two WB supported projects addressing HIV/AIDS in the Road Sector	Technical Note	WB and UNECA
10.	2004	Evaluation of EC interventions, Transport Sector, Third Countries	Evaluation	EC
11.	2005	Why Transport Matters - Contributions of the Transport Sector towards Achieving the MDGs	Technical Note	GTZ
12.	2007	A Decade of Action in Transport	Evaluation	WB

B: Other relevant evaluations and performance assessments not referred to in the paper

African Development Bank/ African Development Fund

- Tanzania, Tanzam Highway Rehabilitation, Project Performance Evaluation Report (2004)
- Ghana, Review of Assistance to Transport Sector, December (2005)
- Ethiopia, Bank Group Assistance to the Transport Sector (2004)
- Malawi, Bank Group Assistance to the Transport Sector (2004)
- Gambia, Roads Rehabilitation Project, Project Performance Evaluation Report (1999)
- Morocco, Evaluation of Bank Assistance to the Transport Sector (2006)
- A study on Sectoral and Project Performance Indicators in the Transport Sector (2000)

Asian Development Bank:

- Nepal, Impact Evaluation Study of the Asian Development Bank Assistance to the Roads Sector (2000)
- Indonesia, Philippines, and Sri Lanka - Impact of Rural Roads on Poverty Reduction: A Case Study-Based Analysis (2002)
- Pakistan, Operations Evaluation Department, Sector Assistance Program Evaluation for the Road Sector, November (2006)

World Bank

- Vietnam, Project Performance Assessment Report, Highway Rehabilitation Project 1 and the Rural Transport Project 1 (2004)
- Lesotho, Project Performance Assessment Report, Lesotho Road Rehabilitation and Maintenance Project (2006) (WB/IEG)
- Sierra Leone, Project Performance Assessment Report, Roads Rehabilitation and Maintenance Project and the Freetown Infrastructure Rehabilitation Project (2004)
- Honduras, Project Performance Assessment Report, Transport Sector Rehabilitation Project (2004)

Japan/MOFA

- Cambodia, The Evaluation Study on Japan's Assistance to Transport Sector (2003)

Annex 2: Relative Emphasis of Themes in Evaluations and Studies

H = High level of emphasis, M = Medium level of emphasis, L = Low level of emphasis, O = No emphasis at all

	Economic and Social Development							Policy, legal and institutional framework							Planning and Management							Cross-cutting issues			Donor support		
	Roads and the economy and regionalisation	PRSPs/ performance monitoring matrix	MDGs	Access	Affordability	Community participation	Rights-based approach	Multi-sector approach	Policies and strategies	Regulatory framework/ legislation	Road sector reforms – interface with other transport modes	Road safety	Institutional set-up and human resources	Local governance/ decentralisation	Non-state actor involvement (private sector, NGOs, etc.)	Programming and budgeting – EIRR	Financing of investments and recurrent expenditures (roads funds)	Performance monitoring and indicators; (PEIR) (outcome/impact)	Rehabilitation and new construction	Routine and periodic maintenance	Labour-based methodologies	Gender equality	Environment	CG, corruption, democratization and participation	Health (HIV/AIDS)	Donor policies and approaches	Donor harmonisation and alignment
AfDB	M	L	L	L	O	O	O	O	L	L	O	H	O	M	H	M	H	O	O	O	L	M	O	O	M	L	
ADB	O	L	O	L	L	L	O	L	M	L	O	H	M	O	M	M	H	M	H	L	L	H	M	O	M	O	
DFID	M	L	M	H	L	M	M	M	O	O	L	L	O	L	H	L	M	O	L	H	H	H	O	M	O	O	
EC	H	M	O	M	O	O	O	M	O	L	M	M	O	H	M	H	L	L	M	L	M	M	O	L	M	M	
GTZ/Bangladesh	O	M	O	L	O	O	L	O	O	O	O	O	O	M	L	L	O	L	O	O	M	O	O	O	L	L	
GTZ, Why Transport Matters	O	H	O	M	L	O	L	O	O	O	O	O	O	O	O	O	L	O	O	O	L	M	O	H	O	O	
UNECA and WB note	M	O	O	O	O	O	L	L	O	O	O	H	O	L	O	O	M	O	O	O	O	O	O	H	O	L	
Danida/Kenya	O	L	O	M	O	L	O	O	O	M	O	H	O	L	H	L	M	M	M	L	M	L	O	O	M	M	
Joint, Ghana	O	M	O	M	L	O	O	L	M	M	M	H	M	H	H	H	M	M	M	L	M	M	O	O	H	H	
Joint, Ghana, follow-up	O	M	L	O	O	O	O	H	O	L	L	H	O	M	M	M	H	O	M	O	L	O	O	L	H	H	
SIDA	O	O	O	M	O	O	O	O	O	O	O	H	O	L	H	M	L	O	L	O	L	O	O	O	M	O	
WB	M	M	L	M	O	L	O	M	O	L	M	M	H	O	H	M	L	L	O	H	M	L	H	M	L	H	L

Annex 3: Overview of Danida's Support to Road Sector Development

Matrix 1: Danida Transport/ Road Sector Interventions by Component

Country	Year	Title	Administrator	Budget	Institutional	National roads	Sub-national roads	Local roads	Community access	Intermediary transport	Road policy, etc	Feeder roads	Maintenance of roads	Roads in other SPSs	
Angola	1997-2001	Rehabilitation of infrastructure in Uige, Phase 2.	Ibis	25,5 mio. kr.				x	x						
	1997-2001	Rehabilitation of infrastructure in Bengo, Phase 2.	Ibis	3,4 mio. kr.				x	x						
Bangladesh	1993-1998	Barisal Infrastructure Project	Danida	97,9 mio. kr.				x				x			
	1994-1999	Barisal Infrastructure Project The Annual Report does not state if this is new project or replaces the above.	Danida	78,1 mio. kr.				x				x			
	1994-2004	Barisal Infrastructure Project This project is referred to as Phase 2 and is a continuation and geographical expansion of Phase 1, which was completed in 1999	Danida	221,1 mio. kr.				x				x			
	1995-1998	Rehabilitation of the Dhaka-Aricha main road	Danida	175 mio. kr.		x		x							
	1995-1999	Rehabilitation of the Dhaka-Aricha main road (possibly an expansion of the above Project.	Danida	315,2 mio. kr.		x		x							
	1998-1999	Engineering design for rehabilitation of district roads in Patuakhali and Barguna	Danida	6,6 mio. kr.	x							x			
	2000-2006	Transport Sector Programme Support, Phase 1	Danida	807,90 mio. kr.	x	x	x	x				x	x	x	x

Benin	1995-2005	Rehabilitation of the Tohoun-Dogbo-Bohicon Road	Danida	177,85 mio.kr		x								
	1998-1999	Design and tendering of the Tohoun-Dogbo-Bohicon Road	Danida	9,8 mio. kr.		x	x				x			
	1999-2006	Transport Sector Programme Support, Phase 1, which includes the Tohoun-Dogbo-Bohicon Road.	Danida	489 mio. kr.	x	x	x	x	x		x	x	x	x
	2005-2010	Transport Sector Programme Support, Phase 2 (PASR 2)	Danida and Ministry of Transport	373,6 mio. kr.	x	x	x	x			x	x		x
Gaza/ West Bank	1994-1997	Reconstruction of road infrastructure – West Bank	WB	120 mio. kr.		x		x						
	1998-1999	Feeder roads and terracing	Danish - Palestinian Association	4,2 mio. kr.					x				x	
	1998-2007	Development of local government infrastructure - Gaza	Danida and the Palestinian Authority	184,4 mio. kr. (Amount for roads is not indicated)				x						
Ghana	1993-1997	Rehabilitation and maintenance of feeder roads	Danida	117,3 mio. kr.		x		x				x		
	1999-2003	Transport Sector Programme Support, Phase 1	Danida	412 mio. kr.	x	x		x			x	x	x	x
	2003-2008	Transport Sector Programme Support, Phase 2	Danida	511,5 mio. kr.	x	x		x	x		x	x		x
Kenya	1994-1997	Minor roads in the coastal zone	Danida	50 mio. kr. (Expanded with 3 mio. kr. in 1997 and 5 mio. kr. in 1998)		x		x						
	1998-2003	Minor roads in the coastal zone	Danida	73,1 mio. kr. (Expanded with 24.5 mio kr in 1998)	x			x	x		x	x	x	
	1987-1996	Minor Roads in the Nyanza Province	Danida	78 mio. kr.				x					x	

Mozambique	1988-1999	Infrastructure Project in Zambèzia, Phase 2	Ibis	59,1 mio. kr.				x											x		
	1993-1996	Rehabilitation of roads and resettlement of displaced people in Milange	Ibis	13,6 mio. kr.				x												x	
	1999-2005	Agricultural Sector Programme Support, Phase 1 – including roads	Danida and Ministry of Agriculture	280 mio. kr. (The amount for roads is not indicated)				x											x	x	
	2005-2010	Agricultural Sector Programme Support, Phase 2 – including roads	Danida and Ministry of Agriculture	315 mio. kr. (The amount for roads is not indicated)				x											x	x	
Nicaragua	1993-1998	Transport Sector Programme for the Atlantic Autonomous Region, Phase 2	Danida	98 mio. kr.				x												x	
	1995-1998	Rehabilitation/ periodic maintenance of the Nandaime-Rivas-Peñas-Blancas Road	Danida	110,3 mio. kr. (Expanded with 19 mio. kr. in 1997 and 6,8 mio. kr. in 1998)			x														
	1995-1996	Rehabilitation of the road to Rama, Phase 2	Danida	23 mio. Kr.			x			x											
	1992-1996	Rehabilitation of the San Benito-Rama Road, Phase 2	Danida	64,5 mio. kr.																	x
	1995-2000	Institutional development and strengthening of the Department for Maintenance	Danida	11,4 mio. kr.	x																
	1999-2005	Transport Sector Programme Support, Phase 1	Danida	191 mio. kr.	x	x	x	x	x						x	x					x
	1999-2006	Transport Sector Programme Support, second part of Phase 1	Danida	260 mio. kr.	x	x	x	x	x						x	x					x
	2005-2009	Transport Sector Programme Support, Phase 2	Danida	386 mio. kr.	x										x	x				x	x
	1998-1999	Rehabilitation of the Managua- Rama Road	Danida	7 mio. kr.	x																
	2004-2005	Periodic maintenance of the Managua-Rama Road	Danida	140 mio. kr.			x	x													

Tanzania	1989-2000	Rehabilitation of the Chalinze-Segera-Tanga Road	Danida	573 mio. kr.		x		x					x	
	1999-2000	Tender Documentation	Danida	9 mio. kr.	x						x			
	1997-2001	Road Sector Programme Support, Phase 1	Danida	440 mio. kr.	x	x	x	x	x		x	x	x	
	2001-2005	Transport Sector Programme Support, Phase 2	Danida	555 mio. kr.	x	x	x	x			x	x	x	
	2005-2010	Transport Sector Programme Support, Phase 3	Danida	500 mio. kr.	x	x	x	x	x		x	x	x	
	2004-2010	Main Road Project	Danida and TANROADS	247,37 mio. kr.		x								
Uganda	1993-1995	Masulita Reconstruction Project	ILO	4,2 mio. kr.				x						x
	1996-1999	Rehabilitation of district roads in Rakai	Danida	23,9 mio. kr.				x						
	1997-2002	Road Sector Programme Support, Phase 1	Danida	424,15 mio. kr.	x	x	x	x			x	x	x	
	2003-2007	Road Sector Programme Support, Phase 2	Danida	250 mio. kr.	x	x	x	x			x	x	x	
	2005-2008	Support to implementation of the national refugee strategy in Uganda	Prime Minister's Office, and Danish NGOs	70 mio. kr. (The amount for roads is not indicated)				x	x					
Zambia	1991-1999	Rehabilitation of the Kapiri-Mposhi-Chingola Road	Danida	304 mio. kr.			x	x					x	
	1996-1999	Rehabilitation of the Kapiri-Mposhi-Serenje Road	Danida	275 mio. kr.			x	x					x	
	1996-2002	Improvement of the Lusaka-Mongu Road	Danida	19,95 mio. kr.									x	
	2002-2007	Road Sector Programme Support, Phase 1	Danida	360,5 mio. kr.	x	x		x	x		x	x		
Zimbabwe	1996-2000	Maintenance of district feeder roads	Danida	81 mio. kr.				x				x	x	
	1997-2000	Road sector reforms	Danida	5 mio. kr.	x						x			
	2000-2004	Road Sector Programme (Cancelled)	Danida	393,5 mio. kr.	x	x		x			x	x		

Matrix 2: Implementation Schedule for Danida Transport/ Road Sector Interventions

Regions / countries	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
Africa													
Angola			Rehabilitation of Infrastructure in Uige, Phase 2										
			Rehabilitation of Infrastructure in Bengo, Phase 2										
Benin	Rehabilitation of the Tohoun-Dogbo-Bohicon Road												
				Design and tendering of the T-D-B Road									
				Transport Sector Programme Support, Phase 1									
											TSPS. Phase 2 (PASR)		
Ghana	Rehabilitation and Maintenance of Feeder Roads												
				Transport Sector Programme Support ,Phase 1									
								Transport Sector Programme Support, Phase 2					
Kenya	Minor Roads in the Coastal Zone												
	Minor Roads in Nyanza Province												
				Minor Roads in the Coastal Zone									
Mozambique	Rehabilitation and Re-settlement of Displaced People in Milange												
	Infrastructure Project in Zambêzia, Phase 2												
					Agricultural Sector Programme Support, Phase 2								
											ASPS, Phase 2		

Regions / countries	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
Tanzania	Rehabilitation of the Chalinze-Segeza-Tanga Road												
			Road Sector Programme Support, Phase 1										
								Road Sector Programme Support, Phase 2					
											RSPS Phase 3		
										Main Road Project			
Uganda	Masulita Reconstruction Project												
	Rehabilitation of District Roads in Rakai												
			Road Sector Programme Support, Phase 1										
									Road Sector Programme Support, Phase 2				
		Maintenance of District Roads											
												Support to Implementation of the National Refugee Strategy	
Zambia	Rehabilitation of the Kapiri Mposhi-Chingola Road												
		Rehabilitation of the Kapiri Mposhi-Serenje Road											
		Improvement of the Lusaka-Mongu Road											
								Road Sector Programme Support, Phase 1					

Regions / countries	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Asia												
Bangladesh	Barisal Infrastructure Project											
	Barisal Infrastructure Project											
	Barisal Infrastructure Project, Phase 2											
	Rehabilitation of the Dhaka-Aricha Main Road											
	Rehabilitation of the Dhaka-Aricha Main Road											
				Engineering design for Rehabilitation of District Roads in Patuakhali and Barguna								
						Transport Sector Programme Support, Phase 1						
Middle East												
Gaza/ West Bank	Reconstruction of Road Infrastructure, West Bank											
				Feeder Roads and Terracing								
				Development of Local Government Infrastructure								
Central America												
Nicaragua	Transport Sector Programme for the Atlantic Autonomous Region, Phase 2											
	Rehabilitation/ Periodic Maintenance of the Nandaime-Rivas-Peñas-Blancas Road											
	Rehabilitation of the Road to Rama											
	Rehabilitation of the San Benito-Rama Road, Phase 2											

Regions / countries	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	Institutional Development and Strengthening of the Department for Maintenance											
					Transport Sector Programme Support, Expansion of Phase 1							
											TSPS, Phase 2	
				Rehabilitation of the Managua-Rama Road								
										Periodic Maintenance of the Managua- Rama Road		