Evaluation

Ghana

Joint Evaluation of the Road Sub-Sector Programme 1996-2000

Preface

In February 1996 the Government of Ghana (GoG) formulated a road sub-sector strategy with the principal objective of clearing the backlog of maintenance on a sustainable long-term basis.

The subsequent concerted efforts of the GoG and the donors have resulted in a road network, which today is in a substantially better condition than in 1996. Useful lessons from this process could obviously be learned, and in May 1999 the major donors agreed that the achievements in the road sub-sector in Ghana were a natural choice for a joint evaluation.

After agreement with Germany, Great Britain, Japan, The Netherlands, AfDB, EU, and the World Bank, Denmark officially obtained the acceptance of the idea of a joint evaluation from the Ministry of Roads and Transport (MRT) in July 1999. In late August the Terms of Reference were drafted in Accra and circulated to the donor headquarters for comments.

The main objectives of the evaluation were to assess the achievements in the period 1996 – 2000, identify the key issues, constraints, problems, strengths, weaknesses and successes and – not the least – to formulate lessons learned in order to improve future interventions in the sub-sector.

In November, at the 1999 Donors Conference in Ghana, the Terms of Reference (see Appendix 1) were approved and a Steering Committee was formed to oversee the evaluation. This Committee, composed of representatives of the above mentioned donors and MRT, met in Accra four times between April and November 2000. The cost of the evaluation has been met by voluntary contributions from members of the Steering Committee. A smaller Implementation Committee – Denmark, The Netherlands, World Bank and MRT – was formed in order to take care of the 'day-to-day' management of the evaluation. MRT and Denmark have been co-chairing both committees.

In January 2000, after international competitive bidding, the Implementation Committee met in Copenhagen and selected the Netherlands Economic Institute to carry out the evaluation study. The time schedule for the evaluation study was tight, since the final evaluation report had to be ready for the 2000 Donors Conference in November 2000.

The Steering Committee wishes to express its gratitude to the staff of the Ministry and its agencies, who have shown willingness to make substantial sacrifices in the midst of their own very hectic working days in order to supply the essential information and comments to the Evaluation Team. The Steering Committee finds that this joint evaluation has been a good example of how the ownership of the evaluation process can be shared between donors and recipient country.

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List of Abbreviations

ADT	Average Daily Traffic
AFD	Agence Francaise de Développement
AfDB	African Development Bank
AMISU	Accounting and Management Information Systems Unit
BADEA	Arab Bank for Economic Development in Africa
BMS	Bridge Management System
BOT	Build, Operate and Transfer
BRRI	Building and Road Research Institute
CEPS	Customs and Excise Preventive Service
CF	Consolidated Fund
CPC	Construction Project Consultants
CS	Condition Score
DA	District Assembly
Danida	Danish International Development Assistance
DCU	Donor Co-ordination Unit
DFID	Department for International Development
DFR	Department of Feeder Roads
DUR	Department of Urban Roads
DVLA	Driver and Vehicle Licensing Authority
EA	Executing Agency
EC	European Commission
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
ERP	Economic Recovery Programme
EU	European Union
FTA	Foreign Technical Assistance
GAC	Ghana Association of Consultants
GDP	Gross Domestic Product
GHA	Ghana Highway Authority
GIS	Geographical Information System
GoG	Government of Ghana
GRF	Ghana Road Fund
GTZ	Gesellschaft fur Technische Zusammenarbeit
HDM	Highway Development and Maintenance Model
HQ	Headquarters
HRD	Human Resources Development
HSIP	Highway Sector Investment Programme
IDA	International Development Association
IRI	International Roughness Index
JICA	Japan International Co-operation Agency
JBIC	Japan bank for International Co-operation
KfW	Kreditanstalt fur Wideraufbau
LPC	Local Private Contractor
MDA	Ministries, Department, Agencies
MIS	Management Information System
MLGRD	Ministry of Local Government and Rural Development
MMA	Metropolitan Municipal Assemblies

MMDA Metropolitan Municipal District Assemblies
MMDU Metropolitan Municipal District Unit
MMS Maintenance Management System
MoF Ministry of Finance
MOT Maintain, Operate and Transfer
MPBS Maintenance Performance Budgeting System
MRH Ministry of Roads and Highways
MRT Ministry of Roads and Transport
MRU Municipality Road Unit
MTPU Mechanical Training and Production Unit
NDPC National Development and Planning Commission
NEAP National Environmental Action Plan
NEI Netherlands Economic Institute
NFRRMP National Feeder Road Rehabilitation and Maintenance Project
NMT Non-Motorised Transport
NRCD National Redemption Council Decree
NRSC National Road safety Committee
OHCS Office of Head of the Civil Service
OPEC Organisation for Petrol Exporting Countries
PLF96 Policy Letter February 1996
PMMP Pavement Maintenance Management Programme
PMS Pavement Management System
PMU Project Management Unit
PNDC Provisional National Defence Council
RMI Road Maintenance Initiative
ROSSIP Road Sub-sector Investment Programme
ESDP Road Sector Development Programme
RSEP Road Sub-sector Expenditure Programme
RSIP Road Sub-sector Investment Programme
RSP Road Sector Program
RTPU Road Training and Production Unit
SAPS Special Assistance for Project Sustainability
SAR Staff Appraisal Report
SMC Single Man Contractor
SWOT Strengths, Weaknesses, Opportunities and Threats
TNA Training Needs Assessment
ToR Terms of Reference
TRIP Transport Infrastructure Programme
TSPS Transport Sector Programme Support
UTP Urban Transport Project
VELD Vehicle Examination and Licensing Department
VOC Vehicle Operating Cost
VOT Value of Time

Exchange Rates

The table below presents the exchange rate of the Cedi against the US$.

	1996	1997	1998	1999	2000
January	1,481	1,761	2,286	2,369	3,603
February	1,530	1,789	2,304	2,379	3,718
March	1,572	1,876	2,316	2,409	3,933
April	1,605	1,937	2,323	2,439	4,148
May	1,627	2,009	2,330	2,471	4,574
June	1,653	2,084	2,339	2,525	5,000
July	1,684	2,160	2,340	2,574	
August	1,703	2,196	2,339	2,608	
September	1,713	2,215	2,339	2,658	
October	1,732	2,247	2,339	2,835	
November	1,740	2,253	2,349	3,290	
December	1,750	2,260	2,358	3,520	

Source: GoG official data

Remarks:

- *The exchange rates for March-June 2000 are not official rates and are based on exchange rates relevant during our visits to Ghana.*

Executive Summary

Introduction

At the Donor Conference of November 1999 the Government of Ghana (GoG) and donors active in the Ghanaian road sub-sector agreed on a Joint Evaluation of the Road Sub-sector Programme (1996-2000) in Ghana. The 1996-2000 Road Sub-sector Expenditure Programme (RSEP) formed the basis for the evaluation. The objectives of the evaluation were formulated as: (i) to assess the achievements of the sub-sector objectives with focus on sustainability, (ii) to identify key issues, constraints, problems, strengths, weaknesses, and successes and (iii) to formulate 'lessons learned' in order to improve future interventions in the sub-sector.

Methodology

The core evaluation criteria used in the evaluation of the road sub-sector are efficiency, effectiveness, impact, relevance and sustainability. These criteria are internationally commonly used, a fact underwritten by Danida's Evaluation Guidelines. The Danida guidelines are the methodological basis for this evaluation.

The evaluation period is 1996-2000. The evaluation is based upon information and documentation up to June 2000.

An important change in the level of arrears, a fundamental aspect in the road sub-sector, has taken place after the evaluation period.

Results-evaluation criteria

Relevance
The interventions in the road sector during the evaluation period have been highly relevant. The investments in the road network, its maintenance and the associated strengthening of institutions and organisations have all supported the growth strategy of the GoG and at the same time contributed to the need of society for lower transport costs and improved accessibility.

Attention to rural development has been shown in the feeder road interventions. The strategy of outsourcing maintenance and construction works has induced the development of a private sector with its associated employment and income generation in both rural and urban areas.

Donors are generally interested in the reduction of transport costs, because of the positive effect on economic development. This is to be achieved by creating an environment in which maintenance is assured and by investing in major reconstruction and development works. In addition, donors have to a varying degree set priorities in terms of rural areas (poverty alleviation), environmental impact, safety, non-motorised transport, institutional capacity etc. In spite of the varying emphasis by individual

donors, the donor-supported interventions were in line with Ghanaian society needs and the GoG's stated policies.

Effectiveness

The effectiveness of the road sub-sector programme is related to the extent to which the principal objective of clearing the backlog in a long-term sustainable manner and the specific objectives have been realised. Table S.1 gives an overview of the achievements.

Table S.1 Level of realisation programme objectives

Objective	Summarised achievements	Score
Institutional Capacity Human Resource Management	Institutional structures are in place, implementation (partly) behind. Human Resource Management dependent on donors.	Medium
Clearing the backlog	Programme objectives not fully achieved but condition mix improved considerably.	Medium
Investment priorities	Increasing role for economic principles in project selection; priority to maintenance over reconstruction and development not fully achieved.	Medium
Cost recovery	Ghana Road Fund (GRF) has successfully developed into main provider of maintenance funds.	High
Private sector participation and financing	Participation targets met except for financing.	Medium-High
Dependence on Foreign	Dependence on FTA still strong and perhaps	Low-Medium
Technical Assistance (FTA)	increasing role of FTA.	
Environment and safety assessment	Lack of progress to institutionalise and strengthen environment and safety aspects. Environmental and safety unit established.	Low-Medium
Expenditure management and control	Contract management procedures have improved; arrears problem not solved.	Low-Medium
Road transport regulations	Axle load control programme not realised; operations considered mediocre.	Low-Medium
Non-motorised transport (NMT)	NMT is not a major item in road programme, limited development and promotion.	Low-Medium
Donor co-ordination	Co-ordination at strategic and operational level in place, but few common procedures and arrangements.	Medium-High

The effectiveness of the road sub-sector achievements, as presented in Table S.1, is directly related to the overall effectiveness of the road sub-sector programme. The principal objective of clearing the backlog on a long-term sustainable basis can be read as 'repairing the roads and keeping them in good shape'. This objective has to a large extent been realised by the programme. Some programme elements that are considered very important to realising the principle objective have been met to a large extent (e.g. improving institutional capacity and human resource management, cost recovery, expenditure management and control); at the same time other objectives, some of them less crucial to realising the principle objective (e.g. non-motorised transport), have only been partly met. As a result, the overall 'weighted' score for the programme is higher than the sum of the individual scores.

Efficiency
When assessing the efficiency of the programme the main focus is how the objectives were realised, emphasising the process towards their realisation. Two main efficiency clusters are differentiated, financial and organisational.

The creation of the Road Fund has contributed to providing resources for maintenance. At the same time, fund flow has not yet been reliable with fund releases taking place on an ad hoc basis, resulting from the Road Fund bank account being temporarily 'frozen'.

Delays in payments have resulted in contractors stopping work, thus impeding programme progress. Another delaying factor in paying the contractors is the many parties involved in payment authorisation. An overall delaying factor in the road programme is the slow release of funds by the GoG through the Consolidated Fund and notably by donors. Delays in payments are most obvious in the arrears problem and have resulted in higher unit rates as contractors add premiums for payment delays. High interest charges change the input/output ratio negatively. Although the road programme has suffered from problems such as those above, improvements have been made, e.g. in improving contract management and trying to bring the arrears problem to a halt.

At the 2000 Donor Conference that took place in the period 15-17 November 2000 new information on the arrears situation was provided. It appeared that the GoG had made large-scale arrears payments and that arrears levels had dropped consequently. Arrears levels decreased from US$ 98 million in January 2000, to US$ 69 million in May 2000 and to US$ 28 million in October 2000.

The Evaluation Report is based on findings up to June 2000. As a result, the significant reduction of the arrears as recorded in October 2000 is not incorporated in the Evaluation Report.

The policy of priority spending has not totally been achieved and this is not considered efficient. The policy of focusing on a maintainable network (and gradually increasing the size of this network) has maximised output at minimal input and therefore constitutes good practice.

The downsizing process is ongoing and has resulted in leaner organisations. Yet the process is behind schedule and especially Ghana Highway Authority is still employing large numbers of junior staff because the government stopped financing the retrenchment programme. At the same time the road agencies have insufficient professional staff, because (i) the government does not approve recruitment of additional staff and (ii) the agencies are unable to match private sector salaries, causing

staff outflow (especially the well-trained staff). Notwithstanding the overmanning by junior staff, the development of institutional capacity and human resources is jeopardised by the inability to retain trained staff and to recruit new staff.

Training private contractors is considered an example of best practice in developing a private sector. In-house training programmes, e.g. the Department of Urban Roads training of young engineers for a job in the District Units, are considered an efficient approach. International training programmes are relatively expensive, although it is realised that these programmes are an incentive to remain a GoG employee.

The decentralisation process is underway. A cautious approach is being followed. The decentralisation process within the road sub-sector is considered potentially inefficient depending on the level of decentralisation. Diseconomies of scale could emerge if decentralisation is pursued at an administrative level as low as the current district assemblies.

Relatively limited efforts are being made on improving institutions dealing with environment and safety, consequently resulting in limited results. While structures are in place, understaffing and funding are common problems. Potential gains are possible at relatively minor cost.

The axle load control programme is failing. The current procedure operating on a non-24-hour basis and with the possibility of avoiding weighbridges is not efficient. Given the damage to the road network this is considered a serious shortcoming.

The co-ordination between the GoG and donors is efficient. Regular meetings and a Donor Co-ordination Unit operating on limited resources are ensuring progress in co-ordination between activities. Introducing common procedures for implementation, monitoring, accounting and reporting would further improve efficiency. However, it is questionable to what extent donors would be willing to harmonise their specific procedures.

Sustainability
Donor interventions are crucial for the programme's sustainability as there is no doubt that if donor interventions were to be halted immediately, the road sector would be hard hit. Whereas maintenance activities can continue on basis of Road Fund financing, financing new development would be difficult. Human resource development, safety, environmental and non-motorised transport aspects are also largely dependent on donor actions.

This indicates the long-term nature of building capacity for road network management. It also understates the credit for achievements in the evaluation period. During this period the reform of the Ministry of Roads and Transport (MRT), the successful introduction of the Road Fund, the reduction in executive agency staff and building up the private sector road maintenance and construction capacity, inter alia, will definitely have a lasting effect on the quality of the road network of Ghana. Even more so because there is a firm commitment of the GoG to improving the road network, though in some areas greater commitment is required (i.e. training, environment and safety issues, enforcement of axle load regulations).

Impact
The impact assessment has suffered from lack of available documentation. Poverty alleviation is an important objective of the GoG and is supported by the international donors. However, the project selection process by donors is mainly based on quantifiable cost-benefit aspects and less on poverty alleviation and regional development aspects. This implies a bias to select projects in the more densely populated, and often richer, areas. Unfortunately, no studies are available which differentiate among regions by poverty and therefore no answer can be given whether feeder road improvements in different regions have different impact on poverty alleviation and rural development.

Available impact studies indicate that feeder road improvements have a positive impact on rural poverty. Road improvement in itself is not sufficient to maximise socio-economic impact and should be supported by other measures such as agricultural credits, availability and finance of vehicles, as well as long-term maintenance of the roads. Therefore, a more integrated and co-ordinated rural development could increase the impact on (rural) poverty alleviation.

The impact of transport infrastructure on women can be profound. Women play a crucial role in transport activities; e.g. the share of female participation in domestic transport activities is estimated at 70 percent. Reducing the transport burden on women would create more time and energy to be spent on other activities.

Lessons learned

This evaluation can be characterised as innovative and groundbreaking in some respects. The GoG and all donors active in the Ghanaian road sub-sector have joined forces and called for a joint evaluation of their 1996-2000 performance. This is a clear break from individual, often project-based evaluations and reflects a tendency towards a more co-ordinated approach. The co-ordination can also be seen in other fields, such as the Donor Co-ordination Unit, the annual Donor Conferences and the preparation of the new Road Sector Development Programme (RSDP).

One of the lessons learned is that the completion of the evaluation of RSEP provides an excellent opportunity to prepare for the monitoring and evaluation of the progress and performance of RSDP. To facilitate this process, RSDP objectives should be set as clear as possible, where possible with clear, measurable and achievable targets. By doing so a set of performance indicators can be developed allowing for monitoring and evaluation of the programme. The performance indicators can be used in baseline studies serving as reference points for future performance.

As monitoring and evaluation are considered to become increasingly important in time, the GoG could, in co-ordination with the donors, consider initiating the development of a self-monitoring system. This would facilitate the policy-making procedure and would prepare the GoG for future evaluations.

Below an overview is presented of some lessons learned per objective as specified in the GoG policy letter of February 1996.

Institutional Capacity and Human Resource Development
The GoG should proceed with the reorganisation of the road sub-sector institutions. The agencies should be further brought down in size and focus on core activities. A retrenchment programme for staff previously involved in force account needs to be put in place to allow organisations to downsize. Although it is realised that raising salaries is not directly within the scope of MRT, but is dependent on governmental guidelines, efforts should be made to bring salaries more in line with salaries paid in the private sector, in order to avoid outflow of qualified staff.

The need for training remains high, especially given the current demand for qualified staff. Donor assistance will remain important in this respect. A gradual transfer of training capacity from the donor community to the GoG should be realised and the training budgets need to be increased. Overseas training is far more expensive compared to domestic training programmes. A large share of the donor funds available for training is spent on overseas training. Domestic training programmes should be improved and given priority over overseas training.

The cautious approach followed in the decentralisation process within the road sub-sector is considered good practice. A sector-wide debate on the optimal level of decentralisation is recommended, keeping in mind potential diseconomies of scale.

Clearing the Backlog
The road sub-sector programme under RSEP is considered quite ambitious and has only been partly realised. In developing a new programme it is recommended taking into account (1) the developing needs of the road sub-sector, (2) the funding capacity of GoG and donors and (3) the absorption capacity of MRT, the agencies and other organisations involved in the sector. The fact that GoG is still faced with considerable arrears payments and has limited funding capacity other than the GRF, implies that the ambition of realising a 70-20-10 condition mix in 2005 may be overoptimistic and that the ambition level needs to be consequently moderated. The policy of giving priority to maintenance should be respected.

Investment Priorities
As investments in the road sub-sector are based on different criteria, MRT could play a facilitating role in developing a common approach, e.g. through defining a framework of standards, including (1) unit cost of construction/rehabilitation, (2) vehicle operating costs, (3) value of time, (4) opportunity cost of capital and (5) environmental, safety and additional socio-economic impact.

Balancing equitable regional distribution, including investments in low-volume traffic roads and investments based on 'sound economic principles' needs to be further focused on. Both issues could possibly be combined through a multi-criteria approach.

Road standards should be harmonised. Given road conditions and traffic, the combination of these standards with typical unit prices for maintenance provides a method for determining annual budgets in a systematic way.

Cost Recovery
The GRF should continue to provide a financial basis for maintenance and rehabilitation works. Efforts should be made to further safeguard timely releases of funds. If future releases remain problematic a transfer of the funds to an account at a commercial bank should be considered.

Furthermore, revenues should be increased according to schedule with emphasis on raising fuel levies. With the increasing financial basis of the GRF a debate should be initiated on future allocation of GRF funds. The (future) benefits of the GRF should be communicated to the public to create support for the fund and for the principle of road user charging.

Private Sector Contracting and Financing
The private sector has come a long way under RSEP and currently a large share of the road works is done by the private sector. The GoG should continue to facilitate the development of the private sector in order to create a maturer private sector that is able to compete on a domestic and international level.

Private sector financing is still marginal. If GoG want to pursue in this field it is necessary to develop an enabling environment, e.g. though developing capacity to deal with procurement and the necessary legislation.

Foreign Technical Assistance
Instead of a reduction in the amount of FTA, the evaluation period has indicated a consolidation or even an increase in FTA as a result of the shortage of skilled engineering and accounting staff, the need for further training of employees and the departure of engineers to the private sector. Also relatively new aspects such as safety and environment, as well as issues such as poverty alleviation and gender issues, increases the need for FTA.

FTA should clearly provide an added value. Some of the FTA activities can be done through local experts. For this purpose it could be considered to establish a database of local experts. In all instances but especially in the 'new' fields emphasis should be on transfer of knowledge. Therefore it is required to provide counterpart staff that can take over tasks and responsibilities once FTA determinates. It should be considered to monitor and evaluate the process of FTA related knowledge transfer.

Environmental and Safety Assessment
Environment and safety should receive greater priority from GoG, especially for staff increases and funding of recurrent expenditures. In addition, limited investments especially in road safety could well result in considerable gains. Environmental impact assessment needs to be applied for all projects and environmental aspects should be monitored during implementation.

Expenditure Management and Control
Disbursement procedures to contractors should be streamlined, amongst others through shortening payment approval procedures. At the same time, donor releases should follow programmed levels.

In order to get more grip on disbursements, all donors must provide MRT periodic status reports on Grants/Loans expenditures. At the same time quarterly reviews of

implementation status by both GoG and donors will facilitate procurement and disbursement.

With the phasing out of AMISU an option could be that each agency has staff trained to handle procurement procedures and guidelines of the various donors. The responsible persons can then be fully dedicated to the management of projects and programmes as has been successfully done at the Department of Urban Roads.

Road Transport Regulations
The axle load control programme should receive priority. Putting great effort in improving road conditions is ineffective if at the same time damage caused through overloading is not tackled properly.

Non-Motorised Transport
If NMT promotion is on the agenda, strong efforts should be made in presenting the advantages of NMT to the general public. Also baseline studies should be considered in order to measure the impact of NMT, as is done within the Urban Transport Project.

Donor Co-ordination
Co-operation between GoG and donors should be further pursued. Depending on donor willingness, procedures for implementation, monitoring, accounting and reporting should be harmonised. GoG planning and programming capacity needs to be further developed to move into a situation in which GoG can take programme ownership according to the Comprehensive Development Framework principles.

1. Introduction

1.1 Background

The road sub-sector, as part of the transport sector in Ghana, is in the process of recovering from the serious neglect of the 70s and 80s. The recovery process started in the late 80s with a series of transport rehabilitation projects. As a well-functioning road sub-sector is regarded as crucial for continued successful development, the Government of Ghana (GoG) issued a policy letter in February 1996 (PLF96) stating the measures that the GoG would like to pursue to support the implementation of the road sub-sector strategy. The PLF96 formed the basis for the 1996-2000 Road Sub-sector Expenditure Programme (RSEP). Later in 1996 a credit agreement with the World Bank was signed for a Highway Sector Investment Programme (HSIP), covering the period 1996-2000. Funds were provided by a number of donors.

In order to evaluate the achievements of the road sub-sector and compare these to the objectives listed in PLF96, a Steering Committee was formed consisting of representatives of the GoG and the major donors (emphasising the joint character of the evaluation). The Netherlands Economic Institute (NEI) was contracted to carry out the Joint Evaluation of the Road Sub-sector Programme (1996-2000).

This document is the Evaluation Report and contains a description of the programme and the evaluation of the achievements.

1.2 Objective

In the Terms of Reference (ToR) of the project, as presented in Appendix 1, the main objectives of the evaluation are clearly described:

- To assess the achievements of the sub-sector objectives with focus on sustainability.
- To identify key issues, constraints, problems, strengths, weaknesses, and successes.
- To formulate 'lessons learned' in order to improve future interventions in the sub-sector.

1.3 Methodology and approach

Focus of evaluation
The evaluation is aimed at the 1996-2000 road programme as defined by the Ministry of Roads and Transport (MRT) and referred to as the Road Sub-sector Expenditure Programme (RSEP). This programme is not to be mistaken with the IDA-financed Highway Sector Investment Programme (HSIP), which focused on MRT and the Ghana Highway Authority only.

The evaluation period is 1996-2000. The evaluation is based upon information and documentation up to June 2000.

An important change in the level of arrears, a fundamental aspect in the road sub-sector, has taken place after the evaluation period.

Box 1.1 Change in level of arrears after the evaluation period

At the 2000 Donor Conference that took place in the period 15-17 November 2000 new information on the arrears situation was provided. It appeared that the GoG had made large-scale arrears payments and that arrears levels had dropped consequently. Arrears levels decreased from US$ 98 million in January 2000, to US$ 69 million in May 2000 and to US$ 28 million in October 2000.

The Evaluation Report is based on findings up to June 2000. As a result, the significant reduction of the arrears as recorded in October 2000 is not incorporated in the Evaluation Report.

Limitations
The time period available for the evaluation was ten months, covering the period from February to November. This forced the evaluation to concentrate on existing documentation, additional research was not within the scope of the evaluation. The result of this approach is that some of the fields mentioned in the ToR were not covered. Especially impact measurement, notably wider economic benefits and impact on poverty reduction and gender, has suffered from lack of available high-quality documentation.

Another result of the limited timeframe is that only a small number of regions were visited. The Evaluation Team has mainly operated from Accra.

The sources of information, besides the written documentation, were the representatives from MRT and the agencies as well as the donors active in the road sub-sector. No road users, e.g. road hauliers, and other beneficiaries of the road programme were used as sources of information.

Evaluation criteria
The core evaluation criteria used in the evaluation are efficiency, effectiveness, impact, relevance and sustainability. These criteria are internationally commonly used, a fact underwritten by Danida's Evaluation Guidelines. The Danida guidelines are the methodological basis for this evaluation. The assessment of efficiency, effectiveness, relevance and sustainability is aimed at the objectives or scope of work elements as defined in the PLF96 and the ToR. Where relevant criteria are evaluated on a programme or intervention level.

Scope of work
The ToR provides a clear description of the scope of work (see Appendix 1). The elements to be covered in the evaluation are based upon the PLF96 and consist of in total 13, broadly defined elements of the scope of work.

The Evaluation Team used the description of the scope of work elements as a basis to come to a clustering of activities in six main areas: policy/donor (1), institutional (2), technical (3), economic-financial (4), contract management (5) and others (6). For each of the evaluation clusters there is a separate annex (on CD-ROM). Each of these follows a similar structure (objectives, overview period 1996-2000, evaluation, lessons learned). These six annexes can be regarded as the 'building blocks' for this Evaluation Report

Table 1.1 Phases and tasks

Phases	Tasks	Brief description of activities
Inception	• Team mobilisation • Develop work plan • Initial visit to Ghana	At the beginning of the project the Evaluation Team was mobilised and a work plan, including a detailed planning, was formulated. A first mission to Ghana took place (February) to make working arrangements with government officials and local consultants, and to gather information.
Desk study	• Review written materials • Define evaluation indicators for field study	The next step was to review all relevant and available written materials (February-March). Local staff assisted in gathering relevant documents from February 1996 to date in close co-operation with MRT and the agencies.
Field study	• Second and third mission to Ghana • Inception Report • First and second Steering Committee meeting • Interviews with stakeholders • Visits to regions and districts • Draft Annex Report • Workshop	In April the field study started. This consisted of a review of all relevant materials in Ghana, interviews with relevant stakeholders. Two missions took place, one in April and one in June. In this phase the Inception Report and the Draft Annex Report were produced, followed by the first and second Steering Committee meeting respectively. In addition a workshop was organised at the start of the field study.
Analysis & reporting	• Additional analysis • Draft Evaluation Report • Collecting comments • Fourth mission to Ghana • Third Steering Committee meeting • Workshop	On return to the Netherlands all material was analysed. Based on the information from the Draft Annex Report, a Draft Evaluation Report was produced. During the fourth mission (September) comments were collected and the second workshop was organised.
Completion	• Evaluation Report • Fifth mission to Ghana • Final Steering Committee meeting • Donor Conference	Based on comments gathered at the fourth mission, a final Evaluation Report was produced. The Evaluation Report was presented and discussed at the Donor Conference (November). Also in this period the Evaluation Report was cleared during the final Steering Committee meeting.

in which the six evaluation clusters are grouped in three chapters: institutional and organisational context (Chapter 4), economic-financial context (Chapter 5) and technical-physical context (Chapter 6).

Functional and organisational division of tasks
In the team a division of tasks was made based on the evaluation clusters (one team member responsible for one evaluation cluster) and based on the organisations involved in the evaluation. Per organisation one team member was assigned as contact person.

Co-operation
The Evaluation Team would like to express its appreciation for the co-operative approach of MRT and the agencies as well as the donors involved in the road sub-sector programme. In addition, the Evaluation Team is grateful for all written and spoken comments received.

Phases and tasks
In order to evaluate the broad range of activities in the road sub-sector the following phases and tasks were defined.

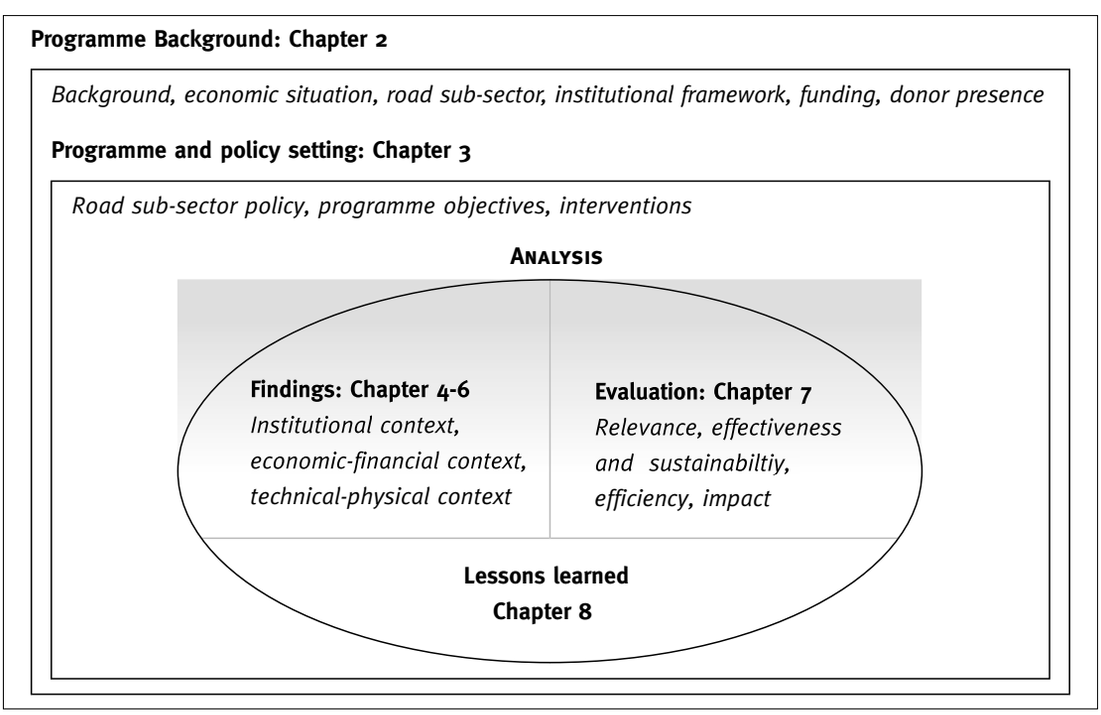
1.4 Contents of the report

This Evaluation Report consists of two main parts. The first part, Chapters 2-3, is descriptive and provides the reader with background on the road sub-sector (Chapter 2) and the policy and objectives of the road sub-sector programme (Chapter 3).

The second part, which can be considered the core of this report, is aimed at evaluating the achievements. Chapters 4-8 present the findings of the evaluation. For three clusters, institutional and organisational (Chapter 4), economic-financial (Chapter 5) and technical-physical (Chapter 6) the achievements in the evaluation period are listed. Chapter 7 focuses on the same period from an evaluation perspective. Finally, in Chapter 8 the lessons learned are dealt with.

In Figure 1.1 an overview is presented in which the contents of the report is reflected.

Figure 1.1 Contents of the report



2. Background

2.1 Background and economic situation

General background
The Republic of Ghana is situated almost midway along the Gulf of Guinea on the West African coast. It covers a total land area of 239,460 square kilometres and has a population of some 18.5 million (mid-1998). Ghana is well endowed with natural resources, including cocoa, timber and minerals.

Ghana operates in a free market environment under a democratically elected civilian government. In December 1996 Ghana had its second multi-party elections since the inauguration of the fourth Republic in January 1993. President Jerry Rawlings was at that time re-elected for a four-year term that will expire in December 2000 at which time new elections are scheduled.

Economic background
After its independence in 1957 Ghana enjoyed a high living standard compared with its neighbours. However, in spite of the country's potential, in the 70s and early 80s income per capita declined and poverty increased. The main reasons were a combination of political uncertainty, poor economic policies and deterioration in external trade. Import volumes fell by a third, real export earnings declined by 52 percent and domestic savings dropped from 12 percent of GDP to almost zero [1)].

In 1983 the GoG introduced an Economic Recovery Programme (ERP) supported by financial and technical assistance from the World Bank, IMF and other donors. The objective of the ERP was to restore macro-economic stability, maintain an incentive framework to enhance efficiency, encourage savings and investment, provide an enabling environment for the private sector and improve public sector resource management. Under ERP real GDP grew by some five percent per annum, the rate of inflation was reduced and Ghana's foreign exchange reserves increased.

Following a period of strong economic performance, fiscal performance fell back somewhat in the periods 1991-1992 and 1995-1996, periods that can be characterised through budget deficits, rapid growth in money supply and inflation.

In recent years Ghana faced a strong decline in world prices for its main export commodities; gold and cocoa. Combined with an increase in the world price of oil this resulted in a negative balance on the external account. The current account deficit in 1999 was estimated at 4.5 percent of GDP.

In the first years of the 90s inflation has averaged around 30 percent per annum. Towards the end of the 90s inflation had dropped to some 12-14 percent. Inflation is reported to have increased to 14.9% in February 2000, and the Cedi stood at C3,832:US$1. The Cedi continued to fall, reaching approximately C5,000:US$1 in June. With the expected continuing devaluation of the Cedi, inflation is expected to remain in double digits over coming years.

1) See Ghana, Building a Stronger Transportation System, 1999, OED/World Bank.

In Box 2.1 an extract from the quarterly reports of the Economic Intelligence Unit is presented [2], illustrating the current external account problems.

Box 2.1 External account deficit-extract from EIU Quarterly Report

With exceptionally weak international cocoa prices, cocoa exports are forecast to fall by 33% from US$542m in 1999 to US$360m in 2000, recovering slightly to US$417m in 2001. Similarly in the case of gold, solid output growth will continue despite only modest increases in the gold price. This should raise total gold exports from an estimated US$694m in 1999, to US$711m in 2000 and US$780m in 2001. Fiscal pressures will be high in 2000, with the combined effects of exceptionally low cocoa prices, only marginally better gold prices and the continued fall of the Cedi.

Economic prospects
Although IMF and donors will continue to support the government policies, the outlook for the economy remains bleak. Monetary policy was tightened in the last quarter of 1999 to bring inflation back under control, and is expected to remain unchanged in 2000 in order to offset a marginally expansionary fiscal policy.

Ghana is expected to continue with its current adjustment programme that runs to May 2002. The GoG released its budget in early February, predicting real GDP growth of five percent in 2000 [3].

2.2 Road sub-sector

The main elements in Ghana's transport system are:
- A network of some 13,300 km of trunk roads, some 23,600 km of feeder roads and some 3,000 km of urban roads [4].
- 950 km of railway system, linking three main cities (Accra, Kumasi, Takoradi),
- Two major ports (Tema, Takoradi).
- A maritime and airline system.

The road sub-sector is dominant and accounts for some 95 percent of all transport in Ghana. Some key indicators are presented in Table 2.1.

2.3 Institutional framework

Overall responsibility for the road sub-sector rests with the Ministry of Roads and Transport (MRT). The management of the sector is aimed at meeting the Vision 2020 objectives (see Section 3.1). MRT is responsible for road sub-sector policy and strategy and the co-ordination and monitoring of the three Executing Agencies (EAs); Ghana Highway Authority (GHA), Department of Feeder Roads (DFR) and Department of Urban Roads (DUR).

2) Quarterly Report Economic Intelligence Unit, January and May 2000.
3) Source: Economic Intelligency Unit, Quarterly Report, I-2000.
4) Rounded figures based on Preliminary Study Report for Highway Master Plan (June 1999).

Table 2.1 Key indicators road sub-sector [5)]

	Length (km)	Condition (% good, fair, poor)	Traffic (ADT in %)
Trunk roads			
National roads	4,379 (33%)	For all trunk roads: Good: 33	‹500: 42, 500-3000: 38, ›3000: 11, no data: 9
Inter-regional roads	2,732 (21%)	Fair: 37 Poor: 30	‹500: 51, 500-3000: 25, ›3000: 1, no data: 23
Regional roads	6,134 (46%)		‹500: 44, 500-3000: 20, ›3000: 1, no data: 35
Feeder roads Maintainable Non-maintainable	 9,805 (42%) 13,800 (58%)	For all (maintainable) feeder roads: Good: 52 Fair: 44 Poor: 4	N.A.
Urban roads Paved Unpaved	 1,603 (56%) 1,282 (44%)	For all urban roads: Good: 31 Fair: 28 Poor:41	N.A.

Source: Preliminary Study Report for Highway Master Plan, June 1999

The mission statement of MRT as presented in the 1995-2000 Strategic Plan is formulated thus:

'To formulate policies, co-ordinate, monitor and evaluate implementation which will improve, maintain and integrate the entire national portfolio of road network to a higher standard of serviceability at optimum cost and within the framework of the national development plan'.

A brief description of MRT and the agencies, as well as the Ghana Road Fund, is presented below. More details are presented in Section 4.1.

Ministry of Roads and Transport
MRT was formed in April 1997. Before that time, roads were under the responsibility of Ministry of Roads and Highways (MRH). MRH was created in 1982 to take over the responsibility for the two road agencies then in existence, GHA (established in 1974) and DFR (established in 1981). In addition, in 1988 DUR was established. Basic legislation governing the road sector has been amended to reflect the new institutional structure.

5) The road condition figures are derived from the 1999 Review Reports of the Annual Donor Conference.

Ghana Highway Authority
GHA is responsible for some 13,300 kilometre of trunk roads. It employs some 3,500 personnel. Number of staff has come down significantly and plans are in place to further reduce the staff.

Department of Feeder Roads
DFR is responsible for a network of some 23,600 kilometre of feeder roads. It employs a staff of approximately 660, divided over the head office in Accra, ten regional offices and ten road district area offices. The (gradual) implementation of the decentralisation process has its impact on the structure of DFR as the emphasis is shifting to the regional and district area offices.

Department of Urban Roads
DUR was established to take over responsibility for roads in Accra, Kumasi, Sekondi/Takoradi, Tema, Tamale and the Ga district. DUR manages 3,000 kilometre of urban roads and employs 460 personnel, working at head office in Accra and in the Metropolitan Municipality District Units (MMDUs). DUR is in the middle of a decentralisation process in which tasks are shifted from the head office to the MMDUs.

Ghana Road Fund
The Ghana Road Fund (GRF) was established in 1985 with the aim to secure road maintenance funding through fuel levies, tolls and vehicle inspection fees. After problematic performance GRF was restructured in 1997 with emphasis on developing a legal framework and establishing a GRF Board and a secretariat to manage the GRF according to sound commercial principles.

2.4 Funding

The three sources of funding for the road sub-sector programme are the GRF, the GoG's Consolidated Fund [6] (CF) and donor grants and loans. Total funds released to the road sector have been more or less stable over the evaluation period at roughly US$ 200 million per annum. On average GoG has contributed some US$ 110 million and the donors some US$ 90 million on an annual basis. The GRF releases are increasing and taking a larger share of total GoG contribution to the road sector. During the last years releases from the CF were aimed at counterpart funding and clearance of arrears. CF releases are under pressure given the current Ghanaian economic climate.

2.5 Donor presence

In the evaluation period by and large the same donors have been involved as during the past decade, the major ones being World Bank, European Union, Japan (JICA, JBIC), Denmark (Danida), Germany (KfW, GTZ), United Kingdom (DFID) and the Netherlands. Other donors involved are the African Development Bank (AfDB), the Arab Bank for Economic Development in Africa (BADEA), OPEC Fund, Nordic Development Fund, France - initially credit guarantees via Coface and later funding via 'Agence Francaise de Développement' (AFD) – and the Spanish government.

6) Resources from the Consolidated Fund directly originate from the General Budget.

With the start of RSEP a more co-ordinated approach was adopted. RSEP is a first collaborative undertaking by the GoG, representatives of road users and donors. The developed programmes cover the total road sub-sector with a commitment to co-ordinate and unify activities of all donors.

3. Programme and Policy Setting

In this chapter an overview is presented of the Ghanaian road sub-sector policy, the way this has been 'translated' into the 1996-2000 road programme and the interventions in the 1996-2000 road programme.

3.1 Road sub-sector policy

Vision 2020
The long-term vision of Ghana is to become a middle-income country by 2020. This aim is described in Vision 2020, prepared by the National Development Planning Commission in 1995. The socio-economic development objectives are described in the National Development Policy Framework (NDPF). Five basic development themes are described: human development, economic growth, rural development, urban development and enabling environment. In Box 3.1 a brief description of the five themes is presented.

Vision 2020 was translated into Medium-Term Development Plans, the First Medium-Term Development Plan covering the period 1997-2000.

Role of road sub-sector in Vision 2020
Vision 2020 underlines the importance of the road sub-sector for economic development of Ghana. In the section on roads the overall objectives are described in the following way:

'The MRT's long-term objective is to develop a co-ordinated network of roads that serves as the arteries and veins of the economy of Ghana. Trunk roads will be clearly defined as national, primary and regional roads linking the national capital, regional capitals, district capitals, major cities in neighbouring countries and major production centres to each other. Feeder roads will provide access to small towns, villages and production centres (especially agricultural centres). Urban roads (described as special facilities, major arterials, minor arterials, collectors and local streets) will be developed and maintained to move people and goods in cities economically, efficiently and safely. While the Ministry plans to fully develop the network in the long term, the principal objective in the immediate future (1997-2000) is to clear the backlog of maintenance work on the road network of over 39,000 km and put the management and financing of the road maintenance on a sustainable long-term basis.'

Policy letter 1996
In February 1996 GoG issued a policy letter (PLF96, see Appendix 2) which included the various measures that it would pursue to support implementation of its road sub-sector strategy during the five-year period 1996-2000.

Box 3.1 Vision 2020: Five basic themes

Human Development
The basic goals of human development are to reduce poverty, increase average incomes and reduce disparities in incomes and opportunities. These goals will be achieved by reducing the rate of population growth to 2% per annum by 2020, reducing infant and child mortality and general morbidity, improving food security and nutrition, and further increasing access to health services, safe water and sanitation, and adequate housing. They also involve the achievement of universal basic education and adult literacy, especially for females, and increased access to secondary and tertiary education. The technical proficiency of the labour force will be given further improvement through increased technical and vocational training.

Economic Growth
The basic goal of economic growth of Ghana is to establish an open and liberal market economy that optimises the rate of economic development and ensures the maximum welfare and material well-being of all Ghanaians. The current enabling environment will be further strengthened and enhanced to encourage private investment, both foreign and domestic, by improving the legal and administrative system and the economic infrastructure as well as creating a science and technology culture. The aim is to transform Ghana from a low-income to a middle-income country within one generation by achieving a long-term average rate of economic growth of over 8% per annum, which will raise real average incomes fourfold. A major concern will continue to be the equitable distribution of the benefits of development, closer integration of women and rural dwellers into the national economy and the elimination of hard-core poverty through the promotion of efficient rural farm and non-farm production activities and the encouragement of the innovative spirit of micro and small enterprises. The targeted rate of economic growth requires increased productivity in all sectors of the economy, especially agriculture, and an expansion of the range of goods and services, produced at internationally-competitive prices. This will be assisted by major improvements in all types of economic infrastructure. Accelerated growth of production, with agriculture's share falling to below 20% of GDP and industry's share rising to 37% by 2020. The services sector's share should rise to some 45%.

Rural Development
With over two-thirds of the population staying in rural areas, a major development goal is to reduce disparities between the incomes and standards of living of rural and urban populations. This will be achieved by judicious allocation of public investment in favour or rural areas to provide adequate economic and social infrastructure and to protect and improve the rural environment.

Urban Development
Urban settlements play a pivotal role in national development. The aim is to ensure that small and medium-sized towns and cities adequately fulfil their role as service centres for their rural hinterland and that the process of urbanisation contributes positively to development. This will be achieved by a more spatially equitable and rational distribution of population between settlements of varying sizes and between urban and rural areas.

An Enabling Environment
The objective is to create an enabling environment in which all sections of the society can contribute to sustained and accelerated rate of social and economic development. In addition to the contributions that will stem from human development, the public administration and legal framework will experience a further deepening in the current reforms in order to make them contribute positively to the development effort.

Source: Ghana Vision 2020, The first Medium-Term Development Plan (1997-2000), GoG, July 1997.

The principal immediate aim is *to clear the backlog of road maintenance on a sustainable long-term basis*. To this end the following objectives were set:

- Strengthening the organisational structure and institutional capacity of the various road agencies.
- Clearing the backlog of rehabilitation and periodic maintenance work.
- Basing road sector investment decisions on sound economic principles, and giving highest priority to routine and periodic maintenance.
- Improving cost recovery to ensure that maintenance can be funded on a sustainable basis.
- Promoting greater private sector involvement in both execution of works and financing of transport infrastructure.
- Reducing dependence on foreign technical assistance and increasing training and performance of local staff.
- Improving capacity to evaluate the environmental impact on road schemes and design mitigation measures.
- Re-gaining sector-wide discipline in expenditure management and control.
- Streamlining transport regulations, enforcing of axle-weight regulations, enhancing road safety, and improving traffic management.
- Giving priority to development of non-motorised transport and improving facilities for their use.
- Strengthening donor co-ordination, simplifying and improving procurement and reporting procedures for donor supported and GoG programmes.

3.2 Programme objectives

The PLF96 formed the basis for the credit agreement that was signed in June 1996 between the GoG and the World Bank. The HSIP, together with pledges from other donors, would help support implementation of the 1996-2000 RSEP, the focus of this evaluation. Its unique character is emphasised in the Staff Appraisal Report (SAR) of the HSIP [7]:

- The programme covers the entire sector including maintenance as well as the more conventional capital investment, policy reform and institutional issues.
- The programme has been jointly prepared by local stakeholders (GoG and private and public sector road users) and donors active in the sector, with the former taking the lead.
- All donors active in the sector support the programme.
- The programme makes optimum use of scarce local resources.
- The programme promotes standardised implementation procedures.

The HSIP SAR states that efficient cost-effective road transport is fundamental to achieving the objective of reducing poverty through increased growth, largely in the agricultural sector. The programme will support this by:

- Reducing vehicle operating costs through maintenance, rehabilitation and construction of roads.

7) Staff Appraisal Report: Highway Sector Investment Programme, World Bank, April 1996.

- Ensuring that improvements are sustained by developing and implementing cost recovery policies, building and utilising indigenous capacity in the public and private sectors and improving financial management and control.

The above-mentioned objectives strongly correspond with the PLF96 objectives aimed at clearing the backlog on a sustainable long-term basis through the realisation of a number of (sub-)objectives.

3.3 Programme interventions

In the evaluation period a broad range of programmes, projects and interventions have taken place. An overview of these programmes, projects and interventions are presented per agency (GHA, DFR and DUR) in the tables below.

Table 3.1 Projects, Ghana Highway Authority

Programme	Donor	Loan/grant	Period	Main component
Second Transport Rehabilitation Programme (TRP-2)	IDA Credit GH 2192	SDR 56.56m	1991-1997	• Trunk Road Rehabilitation, Re-gravelling, Resealing, Resurfacing • Institutional Support
Tamale-Paga (TRP-2)	JBIC (co-finance)	¥ 8,439m	1995-1998	• Road Rehabilitation (185.2 km)
Bridge Development Programme (TRP-2)	BADEA (co-finance)	US$ 8.75m	1995-1998	• Bridge Works (Rehabilitation 6 Nos.)
Ejura-Gyato Zongo	Dutch mixed credit	NLG 35.6m	1996-1997	• Rehabilitation (45km)
Tema-Akosombo	KfW	DM 50.0m	1994-1998	• Road Rehabilitation (75km)
Second Transport Infrastructure Programme (TRP-2)	EU	Euro 54.0m	1997-2001	• Road Construction (117km) • Road Maintenance • Institutional Support • Technical Assistance
Highway Sector Investment Credit (HISC)	IDA Credit GH 2858	US$ 100.0m	1997-2001	• Road Rehabilitation & Maintenance • Bridge Works • Institutional Support • Technical Assistance
Highway Sector Investment Programme (HSIP)	KfW	DM 50.0m	1997-2001	• Road Rehabilitation & Maintenance (405km) • Institutional Support • Technical Assistance

Programme	Donor	Loan/grant	Period	Main component
Highway Sector Investment Programme (HSIP)	JBIC	¥ 2,544m	1997-2001	• Kumasi-Anwiankwanta (25km)
Lower Volta Bridge	KfW	DM 25.6m	1995-1998	• Repair of Bridge Foundation • Repair of Superstructure

Source: HSIP Consolidated Technical Audit Report, Benning, Anang & Partners, 1999

Table 3.2 Projects, Department of Feeder Roads

Programme	Donor	Loan/grant	Period	Main component
National Feeder Roads Rehabilitation and Maintenance Programme (NFRRMP)	IDA Japan OPEC Danida	SDR 40.5m ¢221.4m US$5.0m DKK 117.3m	1992-1998	• Road Rehabilitation, & Regravelling • Logistic Support • Engineering Design & Supervision • Studies • Institutional Support • Technical Assistance
Cocoa Roads Rehabilitation Programme (CRP) STABEX	EU EU	Phase 1 ECU 6.0m Phase 2 ECU 8.0m	1996-1999	• Rehabilitation of Feeder Roads
Small Stream Bridge Rehabilitation Project	JICA (1) JICA (2) Spain DFID (ODA)	US$ 2.5m ¥ 992m US$ 3.0m £ 8.49m	1996-2000	• Construction of 21 Nos. Steel Bridges • Construction of 7 Nos. Composite Bridges • Construction of 18 Nos. Steel Bridges • Construction of 65 Nos. Steel Bridges

Source: HSIP Consolidated Technical Audit Report, Benning, Anang & Partners, 1999

Table 3.3 Projects, Department of Urban Roads

Programme	Donor	Loan/grant	Period	Main component
Urban II	GoG IDA Nordic Fund OPEC	US$ 2.40m 26.24m US$ 4.40m US$ 3.33m	1991-1998	• Road and transport system management • Arterial road rehabilitation • Engineering studies • Development of drainage master plan • Institutional support • Kekutia Redevelopment Project
Urban Transport Project (UTP)	IDA Japanese grant OPEC	US$ 73.58m US$ 6.84m US$ 11.14m	1994-1998	• Road rehabilitation and traffic management • Access roads to depressed areas • Transport terminals development • Non-motorised transport (pilot) • Technical assistance
Interchange Development	Coface	US$ 22.0m US$ 22.1m	1994-2000	• Kanda overpass • Sankara interchange

Source: HSIP Consolidated Technical Audit Report, Benning, Anang & Partners, 1999

For the purpose of evaluating the road sub-sector programme the aggregated achievement of the projects is focused on. Reference to specific projects is made whenever relevant.

4. Findings: Institutional and Organisational Context

In the following three chapters findings are presented. The findings are based on a review of existing documents and on interviews with stakeholders involved in the road sub-sector. The items presented in these chapters are closely linked to the sub-objectives and clustered under the three sections:

- Institutional and organisational context (Chapter 4).
- Economic-financial context (Chapter 5).
- Technical-physical context (Chapter 6).

4.1 Organisational structure

MRT
Until March 1997 the Ministry of Roads and Highways was responsible for the road infrastructure and the Ministry of Transport and Communications for the road transport services and other transport modes. In 1997 the two Ministries were amalgamated to become the Ministry of Roads and Transport (MRT).

The Ministry is now better structured to perform its core task: formulation and implementation of integrated policy and planning of the transport sector. 'Integrated' in many ways:

- In terms of modes of transport: encompassing roads, railways, water and air transport, with increasing emphasis on inter-modal transport.
- Dealing with infrastructure, traffic and transportation, as well as transport related services.
- Both freight and passenger transport.
- International, national regional and local transport, duly addressing the Gateway concept.
- Linkages between other economic sectors and transportation.
- Transport (infrastructure) and macro-economic development, featuring a realistic interpretation of Vision 2020 requirements.
- Regional development and transportation, addressing conditions of rural equity and poverty alleviation.

Integrated transport policies should also address issues of increasing relevance such as:

- Traffic congestion in urban areas.
- Modal shift from private to public transport.
- Inter-modal freight transport.
- Ghana's gateway function.

MRT has the specific task in co-ordinating and guiding the Executing Agencies (EAs) GHA, DFR and DUR in addressing the two major issues:

- transition from large bureaucratic agencies carrying out road works basically by force account to leaner, commercially oriented organisations, outsourcing virtually all road works to the private sector; and
- decentralisation (particularly pertaining to DFR and to some extent to DUR): gradually shifting planning and operations to lower regional/local levels complying with overall GoG policies.

GHA
The Ghana Highway Authority was originally established in 1974 as the organisation responsible for the development and administration of the entire national road network. Since the Ghana Highway Authority Act of December 1997, its role is limited to 'the administration, control, development and maintenance of *trunk roads and related facilities*', subject to the policies of MRT.

The independent Board of Directors of GHA, as announced in the PLF96, was inaugurated in September 1999 and consists of ten members, including representatives of four ministries (MRT, Finance, Environment and Interior), private enterprises, transport operators and road users. Despite the change in task and new Board, GHA's organisation has remained virtually unchanged since 1974. The only change has been the establishment of an Environmental Unit under the Planning Division in 1996 (following an agreement with the World Bank), which was subsequently upgraded to a Division with inclusion of the new Safety Unit in 1999.

The structure and staffing of the top management of GHA (Directorate) has remained unchanged since 1996. The Directorate consists of the Chief Executive and three Deputy Chief Executives. Management is essentially co-ordinated through collective and individual meetings of the Directorate.

Already before the creation of MRT, there was a policy to privatise the various activities of GHA. This not only necessitated the agency restructuring (i.e. downsizing), but even more importantly, changing from an implementation bias to a supervision and planning bias. In this respect a merging of the planning of maintenance works and of development works into one unit was foreseen, but this has not yet materialised.

DFR
DFR was set up under a government instrument in July 1981 to have the sole responsibility for the planning, development and maintenance of the feeder road network in Ghana. Prior to establishment of DFR, the responsibility for managing feeder roads had shifted from one agency to another: Public Works Department, Department of Social Welfare, Department of Rural Development, GHA and Cocoa Marketing Board.

DFR is subject to central governmental budgetary policies and procedures, personnel procedures (appointments, promotions, pay, etc.), procurement and central government financial, managerial and economic policies.

DUR
DUR was established in 1989 as an implementing agency within MRT. DUR has the responsibility for the entire network within five cities (Accra, Kumasi, Secondi-Takoradi, Tema and Tamale) and the urban areas of the Ga District. Prior to the establishment of DUR, the responsibility for the planning, development, maintenance and administration of all roads and related infrastructure in the five above-mentioned cities were with respectively the Public Works Department, the then City Council (now Municipal/-Metropolitan Assemblies) and later with GHA.

The role of the DUR is embodied in the legislation formulating the role and authority of MRT. Therefore, also DUR is subject to central governmental policies and procedures as described for DFR.

Concluding remarks – organisational structure
The present structure of MRT and its EAs is in line with the situation elsewhere in the world, with the various modes being governed through one single organisation and, within each mode, integration of infrastructure, traffic and transportation. The efficiency of the transition of GHA (from implementation to supervision and planning) could have been significantly higher in terms of the speed of implementation. It was only at the end of the period under evaluation (September 1999) that the independent board of GHA was actually established. Consequently, the effect of this on its activities and the organisational and management structure and procedures is difficult to assess.

The idea of one single Road Authority, dealing with trunk roads, feeder roads and urban roads under one roof, has been suggested in the road sub-sector. Indeed, once both transition and decentralisation have been accomplished, leaner organisations for the core tasks of strategy and planning will remain, and concentration into the one single road authority might yield some advantages in terms of economies of scale and scope and would provide better conditions for pursuing integrated transport policies. However, in view of the slow process of the present restructuring, the one single road authority idea should not have first priority and should rather be considered as a longer-term perspective. Of course, the feasibility of further restructuring could be investigated in the meantime.

4.2 Institutional capacity

Human resources
With the general policy to outsource maintenance work to the private sector a reduction in the staffing of the three EAs was foreseen: the number of semi-skilled and junior/unskilled workers was to be reduced and the professional job categories (such as engineering and accounting) to be increased.

In the case of GHA a reduction in total staff indeed took place, from 4,085 in January 1996 to 3,589 in December 1999. However, the target for 2000 is even lower (3,134) and more importantly, presently there is a surplus of junior/unskilled staff and a shortfall of professional staff. A recent review of the staff make-up also shows a high proportion (68%) of older employees (above 45 years), which is mainly the remainder of the force account staff.

The downsizing of junior/unskilled staff has been going on since the mid-1980s. A further downsizing was initiated in the beginning of 1990s, with financing from the Government Retrenchment Programme. The first two groups received a retrenchment payment under this programme in 1994 and 1995 (together almost 700 employees). The further implementation of the programme was halted when the GoG stopped allocating funds to it. In 1999 the new Board of Directors prepared a proposal to implement the next phases in 1999-2002, comprising nearly 900 employees.

Recruitment of more staff in the professional job categories did materialise only to a limited extent because the general government policy does not allow the employment of additional staff. In fact, government permission has been given only for replacement of staff retiring or quitting.

While the downsizing has been realised to a larger extent at DFR (from 1,500 in the early 90s to around 660 at present) DFR's staff composition also shows a high age profile and understaffing of engineers, in particular at the regional level. The objective of the DFR Strategic Plan 1995-2000 to put emphasis on recruitment of the engineering and other professional staff has not been achieved, also in this case because the general government policy does not allow recruitment of additional staff. Moreover, a strong need has been signalled for expansion of the executive management with two senior professionals.

Through the years DUR has undergone a downsizing process, from 550 in 1996 to 462 at present. The management of DUR is a relatively young team and two of the engineers are female. DUR seems to have relatively fewer staffing problems, but also here problems exist in attracting skilled engineers. This was the reason for establishing an in-house training programme, aimed at capacity building in view of the expected increased need for engineers due to the decentralisation.

There is a general problem of EAs in attracting highly paid persons like accountants. Although the relatively low salaries of civil servants are partly compensated by fringe benefits, the combined remuneration package is unattractive for scarce and highly skilled staff. The situation has led GHA to push for its own, independent salary policy.

Concluding remarks – human resources
All three agencies have difficulty in attracting and retaining highly qualified people. GoG salaries, to which all Ministries, Departments and Agencies (MDAs) have to adhere, are low compared to private sector salaries and those earned in public utilities, while the GoG has frozen new recruitment of civil servants. In particular GHA and DFR are affected by this situation. The lack of retrenchment funds further hampers adjustment of staff composition in GHA. However, it should be recognised that to a large extent policies of wages and retrenchment are set at the national government level and are beyond the control of the sub-sector. Nevertheless, this situation holds back the building of institutional capacity and calls for concerted action.

Training
In 1997 MRT developed a series of Human Resource Policy and Procedures guidelines, but these have yet to be adopted. The guidelines include a policy for Career Development, which relies upon an annual appraisal procedure. MRT is also expected to play a co-ordinating role in training matters over the MDAs, but fulfilment of this task is seriously hampered by the lack of systematic information. A good start has been made

through the agreement that all MDAs shall prepare an annual three-year rolling training programme, to be amalgamated to an overall view by MRT. A workshop that was organised to this end in 1998, has, however, not yet had a follow-up.

One of the specific objectives of GHA is 'to adequately prepare and develop the manpower by training managerial and operational staff in various skills' This is further specified in the Corporate Training Programme and a special Training and Development Division has been established. Four groups of training are distinguished, i.e. management, professional and specialised training; local professional training; overseas training; and domestic contractor training. GHA's Training and Development Division annually prepares a concise overview of the training carried out. Although comparison of planning and achievements appears difficult, the overviews suggest that the actual training fall short of planning. It can also be concluded that during the evaluation period donor funded training dominated, more specifically World Bank financed training.

Training objectives of DFR are formulated in the document Training Policy, Objectives and Strategy (1995) as: to provide the resources necessary to enable staff at all levels to acquire the skills, knowledge and attitudes to perform their work effectively and to develop their potential to meet future promotion opportunities. Although the broader and more specific objectives are well understood, very little of the regular budget is made available for training. The vast majority comes through donor-funded projects and programmes. The most important of these was NFRRMP, which provided for training of DFR and local contractors at GHA's central training centre. Training for labour intensive contractors is organised at DFR's Koforidua Training School. USAID funded overseas training for DFR staff, while Danida financed comprehensive on-the-job training of DFR staff.

The regular procedure in DUR is that graduate engineers are trained internally at headquarters for a period of 18-24 months. After this period they are placed in the municipalities. In addition there is an in-house training programme. The 1999 programme consisted of a combination of overseas training (Master Courses and short courses), short local courses and seminars. Training of local contractors is not within the scope of DUR. DUR and donors jointly finance training facilities, but the dependence on donor contributions is high.

Concluding remarks – training
Training is widely regarded as part of the incentive scheme and can be used to attract or keep people. A good example of this is the in-house training programme of DUR. Also overseas training is regularly seen as part of the incentive scheme. In some cases people left for private sector employment after the conclusion of the training. In this case the training has clearly not had the effect of retaining people, but rather the opposite. In the more industrialised countries it is quite common to have people reimburse (part of) their training costs if they leave the company within a specified period after the training, but this might not be feasible in the Ghanaian context.

All in all it appears that although the need for staff training is (theoretically) appreciated by Ghanaian MDAs, very limited own funds are put into a systematic human resources development strategy. The vast majority of staff training is financed from donor funds, which might explain the limited action by MDAs. At the same time the training of

contractors, as carried out by GHA and DFR, is quite remarkable and can be used as an example for other countries.

Finally, the recommendations made within the framework of the recently started the Organisational Development and In-Country Training Programme, to gradually shift scarce resources for training from donor funded overseas training to domestic capacity building (including development of local training institutions) should be seriously considered as a means to achieve sustainable HRD.

Foreign Technical Assistance
One of the objectives in the PLF96 is to reduce the dependence on foreign technical assistance (FTA) and to increase training and performance of local staff. Whether that has been achieved is difficult to assess, since no comparison with the period before 1996 can be made. What is clear, however, is that apart from the involvement in appraisal, design and supervision, foreign consultants have been and are being employed extensively in various fields. One of them is to train the employees of MDAs (see above). Other uses of FTA have included the broad spectrum of road sector activities:

- Preparation of the Highway Master Plan by GHA.
- Installation, implementation and operation of Pavement Management System in GHA and Maintenance Performance Budgeting System in DFR.
- Road safety and environmental expertise for GHA and DFR in order to improve the institutional capacity in this field.
- Analysis of the organisation and management of GHA in view of the emphasis on supervision and planning.
- Project management expertise to support and develop the contract management system in GHA.
- Decentralisation of DFR.
- Financial, technical and management training in DUR.
- Institutional support to DUR.

In addition to FTA, foreign assistance has also been crucial in hiring local experts such as accountants and the Accounting and Management Information System Unit (AMISU).

The general appreciation of MRT of the FTA situation is that although significant strides have been made in the utilisation of local capacity, the road sub-sector is still dependent on FTA, mainly due to:

- Conditionalities of donor agencies.
- Lack of highly trained and experienced road engineers.
- The need for a more determined effort in the road agencies to engage and retain trained, experienced Ghanaian road engineers.

Concluding remarks – FTA
Dependence on FTA has not declined and might even have increased. Reasons for this can be found in the shortage of skilled engineering and accounting staff in the MDAs, the need for further training of employees (e.g. in view of the shift from force account works to contracting out, which requires other skills) and the departure of engineers to the private sector. Also the (renewed) interest of donors and GoG in aspects like safety and environment, as well as in issues such as poverty alleviation, gender issues etc.,

increases the need for FTA. Building up the required institutional capacity is thus a long-term process in which no reduction in FTA is to be expected as long as the shortages of skilled staff in MDAs exist.

Increasingly, FTA shall be embodied in alliances between Ghanaian and overseas (consultancy) firms and institutions (research institutes, universities): co-operations, participations and joint ventures. Donor initiatives should support such developments and refrain from conditionalities (tied aid). Longer-term alliances instead of ad-hoc FTA constitutes a better condition for sustainable development.

4.3 Decentralisation

The decentralisation policy of GoG in particular affects DFR and DUR. Decentralisation has its roots in the 'Local Government Law', or Law 207, of 1988. The primary strategy as laid down in Law 207, is to devolve the central government's administrative and political authority to local levels, with the District Assembly (DA) being the centre of administrative and political authority. Among the principal functions of the 110 district administrations is supervision of government departments as DFR and DUR and initiation of programmes for the development of basic infrastructure, municipal works and services. Full decentralisation of DFR operations would entail the execution of feeder road maintenance in each of the districts, organised by Works Departments of the DAs.

Assisting DFR in decentralisation was one of the objectives of the NFRRMP (1992-1998). However, the Completion Report on NFRRMP concludes that the decentralisation support component was only marginally successful. The Road Subsector Investment Programme (RSIP) of MRT states that decentralisation is ongoing where 'responsibilities for maintenance are gradually being handed over to local authorities. MRT prefers a systematic stepwise approach that ensures sustainability'.

In 1996-97 DFR engaged into a pilot project for decentralisation in six selected DAs in the Eastern Region. The maintenance activities of the DAs should be expanded to include contract preparation and supervision. Following the pilot project, DFR decentralised to 10 districts. Technician engineers and foremen have been attached to each of the DAs. Further, DFR has partially decentralised to 12 other districts by posting foremen to them. It appears that the integration of transferred staff into the DA system has not been smooth and DAs are not providing the necessary logistics support to the transferred staff.

In view of the constraints experienced, MRT/DFR, while being committed to pursue the decentralisation process, propose that this is implemented in phases. In a transitional period of five years the 110 DAs [8] are to be grouped in 39 Road Areas sharing technical staff and logistics support. The target for 2004 is to have 50 districts fully decentralised in terms of maintenance operations. Each Road Area and DA shall be assisted to carry out the following activities on its own:

8) The 110 districts include the 5 urban districts which are the responsibility of DUR.

- identification of projects;
- selection and prioritisation of projects;
- approval of projects before their award;
- award of contracts within the ceiling of DAs;
- receipt and utilisation of funds from the GoG for some road works.

The decentralisation of DUR started in the early 1990s with the pilot project in Accra. The transfer of responsibility for maintenance of the roads was subsequently carried out in the other four cities and the Ga-district. In all cases regional MMDUs have been set up which are under the responsibility of the MMDAs, although DUR still caters for development, budgeting, training and equipment. In these MMDUs MRT/DUR provides the professional and technical staff and MMDA provides the supporting staff (drivers, secretaries, mechanics, etc). All MMDUs are responsible for the whole range of implementation of routine and periodic maintenance related activities and have financial responsibility for routine maintenance. In addition the MMDU in Accra also has the financial responsibility for periodic maintenance. In the long-run DUR headquarters will reposition itself and only focus on planning, co-ordination and monitoring of activities. There is a fear within DUR that the decentralisation to MMDAs may involve a different balance of expenditure to the detriment of the urban road network.

Concluding remarks – decentralisation
The ultimate goal of decentralisation is to organise feeder road maintenance at the district level, i.e. through the 110 DAs. Economies of scope could be achieved if road maintenance was integrated in a 'Works Department' together with water supply, sanitation, rural housing and public works. However, diseconomies of scale could emerge if full decentralisation is pursued at an administrative level as low as the present DAs. The organisational capacity of many districts might be weak for a considerable time to come and the required executive staff, capable of both planning and managing road maintenance will not be sufficient at the district level. In an operational sense, somewhat larger Road Areas are probably more economic. From the point of view of human resources this might have the additional benefit that road engineers can indeed continue to do road works and are not diverted to other works.

While the objective of decentralisation is only partly achieved, the feasibility of efficient operation at the DA level should be kept in mind. A Road Area approach gives perhaps a more balanced option between the desired decentralisation and efficient road maintenance.

Decentralisation of road maintenance to the MMDAs appears more successful. Given the intrinsically larger scale of operations this, however, is also to be expected. Here the potential disadvantages of small-scale operations are not present.

4.4 Private sector participation

The PLF96 states that GoG intends to have an increasing share of civil works carried out by private sector contractors (domestic and international). The more specific objective is to have all major road construction work and 90 percent of all road maintenance work carried out through private sector contractors, rather than through force account. This was basically a restatement of the policy adopted by GHA since the

mid-80s, when GHA introduced the so-called 'Single Man Contractor' concept under which an individual was made responsible for the routine maintenance (mainly grass cutting) of a five km stretch of road. At present almost all routine maintenance works and 90% of periodic maintenance are contracted out by both GHA and DFR under such contracts. For DUR presently over 90% of periodic and some 65% of routine maintenance is contracted out. The weighted average of maintenance activities carried out by private contractors is close to 90% and it is planned to increase this level in the near future.

During the evaluation period MRT devised a Classification Register for Road and Bridges contractors. As of 31 December 1999 570 contractor were registered, of which twelve were classified for road and bridge construction and one for bridge construction only (class I). This compares to a total of 257 contractors in September 1998 (of which nine in class I) and illustrates the increasing Ghanaian capacity to carry out construction. Private (national or foreign) contractors presently carry out all construction works. Further, efforts have been made by GoG to create an enabling environment for private sector financing in road infrastructure. Legislation for private sector financing is presently being prepared and promotional material is available. Also potential projects for private sector financing or public private partnerships have been identified.

Lastly, first examples of privatisation of toll collection on improved roads have shown good results. It is envisaged to further expand this principle.

Concluding remarks – Private sector participation
It can be concluded that private sector participation in road maintenance has indeed increased to the desired level. The achievement of this objective can be partly attributed to the training of contractors by the EAs.

Nevertheless it can be pointed out that:

- The corresponding reduction in staff has not been fully achieved by GHA and DFR.
- Private sector financing of road construction has not yet been achieved.
- It appears that more tasks can be privatised or contracted out. In this respect the March 2000 Highway Study can be quoted, which recommends that GHA also contracts out activities like surveying and design of roads and bridges. The report further recommends to privatise: Mobile Maintenance and Bridge Maintenance Units, Site Supervision, Workshops, Quarries and Ferries. Although the evaluation has not looked into the feasibility and desirability of such privatisation, it nevertheless shows that there is still scope for increased private sector participation.

4.5 Contract management

The SAP of HSIP described the large arrears accruing to contractors and estimated them at US$ 75 million as per 1996. These arrears were completely incurred on GHA and DUR projects. The reasons for the arrears touch upon various aspects (see Section 5.3), among which financial management, including contract management.

PLF96 states the objectives of regaining discipline in expenditure management and control and formulates the following actions, after settlement of the arrears:

- Cleaning up of the portfolio, giving priority to nearly completed projects and terminating not viable contracts.
- A minimum of new contracts to be awarded until outstanding payments settled.
- Limitation of variation orders to 25 percent of the initial contract amount.
- Enhancement of the capabilities of the road agencies in planning, programming and budgeting.
- Development and installation of appropriate accounting and information systems for monitoring each contract.

In particular the latter three aspects are the subjects of this sub-section.

MRT
MRT is the nominated Employer in the contract relations of GHA, DFR and DUR, while the EAs are responsible for contract management. Through its Management Information System (MIS) department MRT ensures the reporting of the activities of the agencies. Further, in early 1995 a temporary AMISU was established (with donor funding, on consulting basis) to manage efficient procedures of accounting, disbursement requests and cost-control procedures for the EAs. Originally AMISU's role was limited to donor funded projects, to be expanded in a later stage to cover all road contracts. The latter step was never taken and AMISU's actions have been limited to projects funded by IDA, OPEC and Danida only.

The procurement process for works in each EA follows a programme of interventions established by MRT. For donor funded projects each EA manages the tendering process under the applicable donor guidelines. Generally three types of such guidelines are used: those of the World Bank, European Union or FIDIC. In the absence of pertinent clauses of a national procurement code, GoG funded projects may be awarded under negotiated contract, i.e. without competitive procedures.

In 1996 all 27 large (reconstruction and development) GHA contracts financed by the GoG were negotiated contracts. The reason for such procedures, according to GHA, is that there are only a very few contractors in the country with capacity and capability to undertake large-scale projects. With already mobilised contractors negotiations were held to undertake additional works. This direct negotiation was stopped in 1997. All routine and periodic maintenance works of GHA are secured competitively using IDA procurement guidelines.

In 1999 MRT hired a legal consultant to review and propose reforms for the legislative framework for public procurement.

Tender Boards approve the award of contracts, after evaluation and recommendation by the EAs. Variation orders affecting contract amount and works duration are being granted by the EAs. Such variation orders had contributed significantly to the huge payment arrears in 1996.

GHA
Contract management within GHA is the responsibility of the Division of Contracts. Following the phase-out of the force account execution of works, trials were held with

new procedures of site operations in the second half of the evaluation period. This resulted in a Site Operations Manual (SOM) being published in May 2000, which addresses the detailed procedures of some key phases of works. Under SOM, monthly or quarterly reports are issued on works' progress in a standardised format.

Budgeting is involved for three stages of the works: during planning, when cost estimates are prepared; during implementation, when the cost control system is in place; and in the preparation of periodical forecasts taking into account updated technical and financial conditions. For this function a computerised system was installed in 1998, which is a powerful tool for budgetary management.

The procedure leading to the approval of interim payment requests is detailed in SOM. This process involves the supervising engineer (Engineer's Representative), the Engineer (GHA) and the Employer (MRT), but in reality many more authorities are involved, including non-contract parties such as district and regional authorities. As a consequence, the approval of such payment requests can take considerable time and such delays have been one of the causes of variation orders to cover the financing costs of the contractor.

DFR
In DFR the bidding documents are finalised and approved by headquarters while the regional units handle the procurement procedures. Since most works are well under US$ 2 million, the Regional Tender Boards are the relevant institutions. In many projects donors are involved and consequently World Bank (for national competitive bidding) or EU guidelines frequently prevail. Evaluation of the bids is performed by the Regional unit and sent for validation to headquarters. Until recently labour-based type of interventions were awarded on a negotiated basis. This procedure has been phased out and replaced with competitive procedures.

It was noted as a matter of concern that the current financing conditions at the local level are particularly difficult for small contracting firms as their access to bonding by local banks is non-existent following the recent liquidation of the Bank for Housing and Construction. This may affect the competitiveness of otherwise good and reliable contractors.

During ongoing works, a cost-control operation is linked to the payment progress procedure. The supervising engineer, who might be a staff member of the DFR Regional unit or a consultant, submits periodical progress reports along with interim payment certificates. There is no official standard for the reports. Interim payment certificates are agreed between contractor and supervising engineer, on the value of works completed. The IPC form is then sent to the local DFR Unit and from there to three other local authorities before it is forwarded to DFR Headquarters. Here an additional review takes place.

DUR
The process of procurement in DUR is detailed in a Project Management Manual that is intended for use by MMDUs. The procedures follow the guidelines and terminology of the World Bank, and the procedures for evaluation and transmission between different institutions are clearly defined. It is the policy of DUR to involve the consultants in charge of the project's design in the preparation of bidding documents and the evaluation of bids. DUR intervenes in the approval of the plans and

specifications and validates the bid evaluation reports. Procurement for maintenance of GoG funded projects is based on national competitive bidding procedures.

The phases of budgeting of on-going works are limited to the cost-control aspects in the process of payment approvals. Budget forecasts and prevention of overruns are trusted to the Engineer's function (i.e. the consultants); there is no evidence of actual management action at that level. Interim payments certificates are approved by MMDUs and local authorities and are then forwarded to DUR headquarters for additional review, before payment is requested from MRT. The Engineer prepares monthly reports according to the Project Manual.

Unit prices
An item of major concern in particular for GHA and MRT is the apparent high level of unit prices in Ghana. In November 1998 a consultant was engaged to assess the unit prices and found three reasons for their high level: technical choices, contracting practices and insufficient contract management [9]. An important aspect appears to be that bidding contractors anticipate considerable delays of payment (or insufficiency of budget) and include in their cost estimates a factor which takes these extra financing costs into account. Apart from such financing costs, two other reasons for variation orders are noted, in particular in GoG financed projects, namely insufficient preparation of the studies and insufficient monitoring of potential cost overruns by the Engineer's Representative.

Concluding remarks – contract management
Three aspects of the present procedure of contract management have been or are of concern:

- The (now abolished) practice of awarding contracts without competitive bidding in GoG funded projects.
- The cumbersome and time consuming approval procedure for payment instructions.
- The lack of clarity in contract responsibilities (ideally only involving Employer, Engineer and Engineer's Representative and contractor).

These aspects have resulted and are resulting in long delays in payments and increasing costs, while contractors are faced with uncertainty on the role of contract and non-contract partners.

In addition to this the reporting of project progress (monitoring) is not always done systematically, which makes the task of budgeting at the EA level as well as of financial management at the central level more cumbersome. In this respect it is regretful that AMISU in MRT is not more involved in this process for other donor and GoG funded projects. An additional effort is clearly needed in this respect.

9) Based on 'Assessment of the levels of unit prices in contracting for road works' by Thierry Pello, November 1998. Statements made within this report could not be investigated for their veracity in the scope of the evaluation. An in-depth comparative research on an international level could be considered. However, this process requires a considerable effort and given the complexity of such a comaprison, results are expected to be indicative only.

4.6 Environment and road safety

Environment
The GoG set out a strategy in 1996 towards integrating environmental considerations in the road and bridge construction and maintenance activities. It included the careful monitoring of design and implementation of projects with considerable environmental impact; the preparation of guidelines; and training of all concerned staff. Responsibility for implementation of national environmental policy lies with the Environmental Protection Agency (EPA) which, inter alia ensures that Environmental Impact Assessments (EIAs) are carried out properly. Road construction projects need a full EIA, but it is unclear whether this also holds for maintenance, rehabilitation and reconstruction of existing roads.

In 1996 an Environmental Unit (EnvU) was set up in GHA with financial support from the World Bank. A local, World Bank financed consultant presently heads this unit; a newly attracted staff member will shortly replace him. Two of the three other positions of the unit are still vacant, because current government policy does not allow the recruitment of new staff. The EnvU has no recurrent budget and its operational costs are presently being covered by the World Bank loan. The EnvU drafted environmental guidelines and submitted them to the EPA in 1997, but until now approval has not been received. DFR and DUR do not have an environmental unit and their environmental management capacities are negligible. DFR has subcontracted this task to the (understaffed) EnvU of GHA. Two donors, Danida and DFID, are presently giving FTA in the field of environment for GHA and DFR.

Concluding remarks – environment
The awareness of the environmental impacts of road construction in the ministry and road agencies has increased, and the EnvU has supervised EIAs in donor funded projects and has prepared some EIAs for government financed projects. However, partly due to external factors the institutional capacity is still limited, the guidelines have not yet been approved and the capacity building and training activities so far have been dependent on donor financing.

Safety
Road safety is a serious problem in Ghana and it was recognised by GoG in 1996 as an issue that requires a firmer institutional, legislative and financial basis. The function, composition and legislative basis of the National Road Safety Committee (NRSC) was to be reviewed and strengthened and financing was proposed from the Road Fund.

In order to provide the legal basis, the former National Road Safety Commission was transformed into a committee with the approval of the NRSC Act in 1999. With this Act the NRSC was made responsible for co-ordinating road safety activities like data collection, education, action programmes, etc, and it received a small budget from the Road Fund. Until now, however, NRSC does not yet have a board, or a long-term action plan.

With respect to other institutional arrangements concerning road safety the picture is not much different.

GHA established a Road Safety Unit in 1999 with the aim of improving the safety on trunk roads by physical design measures and enforcement of regulations. The unit is

presently understaffed because government policy does not allow the recruitment of new staff. It does not yet have its own budget, but some safety expenditures are included in the budget of the Maintenance Department. The Road Safety Unit submitted an action programme for the year 2000 involving almost entirely the purchasing of road safety devices. Only a small amount is proposed for the review of road design standards, road safety auditing and 'black spot' studies. The anticipated road safety unit in DFR has not yet been set up. In DUR an engineer was appointed to staff the Road Safety Unit in early 2000.

Other institutions involved in road safety comprise data collection and research by the Building and Road Research Institute, which suffers from lack of funding and inadequate data input (latest data available refer to 1993-1994), and the Driver and Vehicle Licensing Authority (DVLA). DVLA only carries out part of the compulsory bi-annual examinations, but neither effectively nor satisfactorily.

Donor involvement during the evaluation period comprised inclusion of funding for consultancy work under RSEP (although the recruitment started only recently, four years later than anticipated), a feasibility study in 1998 funded by Danida and a subsequent long-term FTA project, which started in September 1999 with a one-year identification phase. In March 2000 a plan for the FTA was submitted and this is presently being discussed.

Concluding remarks – safety
Although the awareness of the problem of road safety has increased, the actions by GoG in this field have been largely ineffective and do not show a high sense of urgency. Partly due to external factors the planned strengthening and improving the institutional set-up (NRSC, agencies) has progressed slowly. The Danida study proposed a more comprehensive approach and perhaps the foreseen long-term assistance can help to turn the course of events.

4.7 Donor co-ordination

Apart from the present extent and effectiveness of donor co-ordination, this section deals with the consistency of donor policies, strategies and objectives with those of the GoG and common arrangements for implementation, monitoring, accounting and reporting on donor assisted and GoG projects.

Policies, strategies and objectives
The main aim of the policy set out by GoG in 1996 is to clear the backlog maintenance. In doing so, vehicle operating or transport costs will be reduced which will stimulate economic development. Within this general objective, GoG has set out various sub-objectives to guide the interventions in the road sub-sector (see Section 3.1). The extent to which the sub-objectives have been reached is subject of other sections.

The role of the World Bank in the road sub-sector has been and still is considerable. Most importantly was its leading role in designing RSEP together with other donors, stakeholders and GoG. The key objectives of the RSEP are fully in line with GoG's objectives of emphasis on maintenance and rehabilitation, cost recovery, capacity building and improving management and control. In its own contribution the World

Bank has in particular centred on maintenance works, FTA and training. In its interventions the World Bank has more or less covered the whole spectrum including road safety, environmental and Non-Motorised Transport (NMT) aspects.

In terms of commitment to the road sub-sector, Japan is the second largest donor. Its aid is divided over grants to support feeder roads (and bridges on them) and concessional loans through its agency JBIC for the rehabilitation of trunk roads in so-called 'Golden Triangles'. FTA (including JBIC's technical co-operation) is centred on planning, management and contract management in GHA, thereby strengthening institutions and stimulating expenditure management. Not much attention has been paid to other sub-objectives.

Germany has centred its interventions on the rehabilitation of trunk roads. In the context of trunk road rehabilitation attention is given to road safety aspects while also the needs of NMT are addressed. The assistance to institutional strengthening and training has been limited to the Maintenance Department of GHA. In general terms, gender and environmental issues and social impacts are considered to be important, but because the German programme in Ghana concentrates on rehabilitation of existing trunk roads these aspects are not given much attention.

The interventions of the EU have concentrated on the ecologically sensitive south-west region of Ghana, covering rehabilitation and maintenance of both trunk and feeder roads. EU assistance further covered institutional support and capacity building (e.g. financing of Donor Co-ordinator), technical support and environmental considerations. Attention for other sub-objectives has been low.

The French contribution to the road sector during the evaluation period consisted in first instance of loan guarantees to two large projects in Accra. Recently it was decided to give loans for the rehabilitation of stretches of urban roads, road improvements in secondary towns and a feasibility study for the construction of 20 bridges in the northern regions. In all, the French interventions are rather isolated projects

The United Kingdom, through its agency DFID, concentrates all efforts on rural roads in the Northern region and on bridges and feeder roads in selected rural areas in Western and Central Regions. The rural road project incorporates environmental aspects as well as strengthening of the planning tools of DFR.

Denmark, through Danida, supports the road sub-sector within the framework of the RSIP. It supplied parallel financing to NFRRMP and now supports the Transport Sector Programme Support (TSPS) which is carried out through MRT (GHA, DFR) and concerns trunk road rehabilitation and feeder road maintenance and rehabilitation. Danida further gives FTA in the fields of environment and safety aspects, as well as in the facilitation of the decentralisation process.

The Netherlands does not have a specific road sector programme, but mixed credit facilities have been given for the rehabilitation of several sections of a trunk road. This funding was explicitly justified by its potential for poverty alleviation.

In the evaluation period several other donors have made smaller contributions to the development of the road sub-sector. This concerns the OPEC (contribution to NFRRMP, completed in 1999), the Spanish government (rehabilitation of bridges for

DFR), the African Development Bank (two feasibility studies, which are expected to be implemented in the coming years), the Nordic Fund and BADEA.

Concluding remarks – Policies, strategies and objectives
Given the long list of sub-objectives formulated by the GoG, most donor interventions are covering several of them. Also, all donors state that their programmes were developed in the context of the joint RSEP.

The coverage of the sub-objectives is partly related to the funding available and for several of the donors, funding of the road sub-sector is amongst the highest priorities. On the other hand, while all donors mention that poverty alleviation is the basis of their programme, this is interpreted differently in practice: some donors concentrate on trunk road rehabilitation, others on feeder or urban roads. In addition, it should be mentioned that almost none of the donors concentrates its road programme in specific regions (complementary to other projects in fields such as agriculture or water supply).

The substantial amount of FTA, though strengthening the short term capacity of MDAs, is in principle in conflict with GoG's stated desire to reduce the dependence on FTA. At the same time much of the training and capacity strengthening would not have taken place without the FTA.

Common arrangements
In the past, donor support was not well co-ordinated and this led to the situation that the GoG's institutional resources were strained by a multiplicity of priorities, strategies, terms, conditions and reporting requirements of donors. RSEP is a first collaborative undertaking by the GoG, representatives of user groups, Parliamentary sub-Committee for Infrastructure and donors active in the road sector. Unlike previous road sector projects, RSEP covers the total road sector with a commitment to co-ordinate and unify the activities of all donors. Interviews with the main donors it was confirmed that the RSEP is indeed the framework for all donor activities.

Nevertheless, DFID concludes in its Country Strategy Paper for Ghana in 1998, 'donors assisting Ghana have traditionally developed projects with distinct objectives and with their own disbursement, accounting and management arrangements. This is partly attributed to the lack of clear policies and weak institutions. Donor behaviour has undermined core government management systems by bypassing them, used up scarce time and capacity through bilateral discussions and separate procedures, and created islands of excellence against the backdrop of very limited recurrent resources rather than facilitating broad based improvements and longer term impact'.

Whether this assessment fully holds for interventions in the road sector is not completely evident, but it can be noted that the World Bank is pioneering with the concept of Comprehensive Development Framework (CDF) in Ghana. The CDF is based on the idea that (i) support to a sector needs to be based on a long term general vision prepared by the recipient country; and (ii) it makes sense for donors to come together to finance projects and programmes in support of such a vision. In line with this initiative MRT, together with the Donor Co-ordinator, prepared an issue paper comprising not only this long-term vision, but also the identification of key challenges and problems and a proposal for funding the road sub-sector programme for 2000-2002. The paper mentions that donors are still interested in specific projects and are not fully supporting the sector programme.

Before RSEP donor co-ordination was organised only an ad hoc basis. In 1997 a Roads Programme and Donor Co-ordination Unit (DCU) was set up in MRT, funded by the EU and staffed by an expatriate, a local expert and secretarial support. The DCU co-ordinates donor interventions by linking up the donors with the ministry and the three road agencies, by putting together proposals from the agencies, and by compiling information for the projection of resource needs and expenditure programmes for the road sub-sector. The DCU also provides support in the preparation of new projects. The DCU organises monthly and quarterly donor meetings and annual donor conferences.

Concluding remarks – Common arrangements
In developing RSEP as a joint effort of various parties, including the donors, a certain level of consistency is reached in the planning. Nevertheless, the DFID report and the CDF initiative show that there are still various flaws in co-ordinating actions of donors, some of which might be difficult to solve (i.e. adherence to donor preferences). As long as donors are not willing to go for complete programme financing, the present approach is the most that can be achieved in terms of co-ordination of interventions.

On the operational level the DCU activities are indeed fulfilling a need of donors and, given the limited resources, with good results. This can for instance be illustrated by the remarkably minor overlap in interventions, the large availability of data (though not systematically stored) and the intensive consultation of the DCU by donor missions.

Despite the above rather positive conclusion on donor co-ordination in programming and activities, the DFID report cited gives a bleak picture with respect to the achievement of common arrangements for implementation, monitoring, accounting and reporting. Donors continue to use different formats, methodologies, unit rates, etc, partly as a result of their own specific reporting requirements. A central accounting and management information body, such as the AMISU, could play a role in co-ordination of formats and methodologies. The dismantling of AMISU in 2001 [10] is therefore seen as a negative development.

In this field therefore little or no progress has been made, which might call either for a substantial effort towards commitment to this objective, or redefining the objective. It seems that there is a choice to be made between efficiency in execution and adherence to specific donor objectives.

10) The phase out period includes a transfer of know-how until reaching a permanent function led in each agency by a Principal Accountant reporting to the Accountant General at the Ministry of Finance.

5. Findings: Economic-financial Context

In this chapter an overview is presented of issues that are strongly related to financial flows in the road sub-sector, together forming the basis for the economic-financial context. The four issues that are covered in this chapter are:

- Financial flows, with an assessment of the extent to which objectives regarding releases and investment priorities are met.
- Road Fund performance, focusing on achievements of the GRF.
- Arrears, with focus on development of the levels of arrears and measures taken to overcome the arrears problem.
- Investment criteria-prioritisation, with analysis of criteria used and prioritisation method followed.

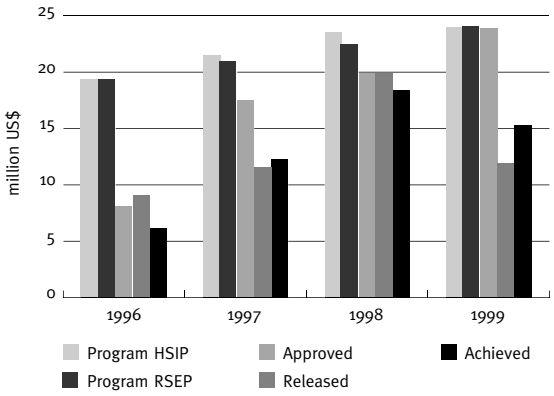
5.1 Financial flows

In Box 5.1 an overview is presented of the total expenditure in the road sub-sector in 1996-1999 on (1) routine maintenance, (2) periodic maintenance and rehabilitation and (3) reconstruction and development. Also an overview of total expenditures is included. Not included are expenditures on administration. Arrears payments are not included explicitly. The expenditures are aggregates of GHA, DFR and DUR expenditures.

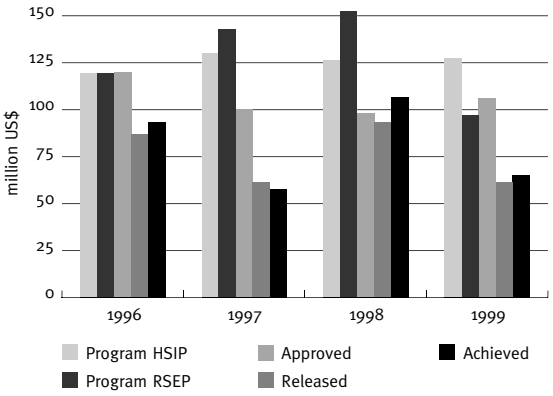
Box 5.1 presents the programmed expenditure levels, both as programmed in RSEP in 1996 and as programmed in the annual expenditure programme. Furthermore, it presents the approved, released and achieved expenditure levels. Periodic maintenance and rehabilitation are aggregated in one single expenditure category because in practice these two expenditure categories are difficult to separate.

Box 5.1 Road expenditures (1996-1999) [11)]

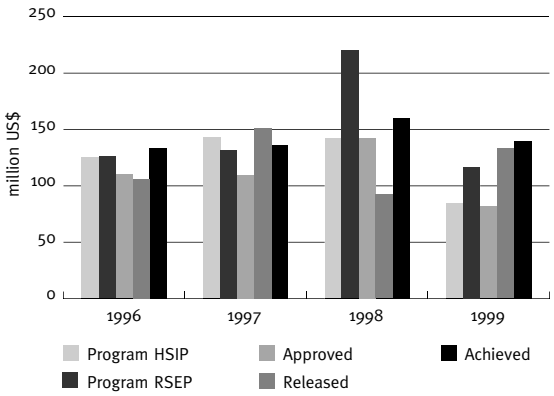
Routine maintenance



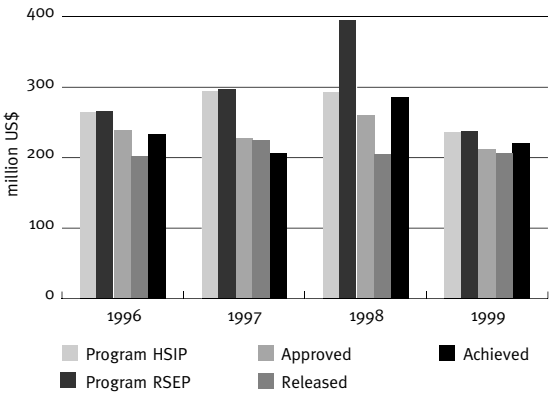
Periodic maintenance and rehabilitation



Reconstruction and development



Total



Concluding remarks – expenditures
Total expenditure is somewhat below but close to programmed levels. The policy regarding priority allocation, in the order maintenance-rehabilitation-(re)construction, is not fully met. Maintenance expenditures are behind on programmed levels, while reconstruction and development expenditures are at or exceed programmed levels. It should be noted, however, that the arrears payments have a distorting effect as these are partly related to obligations prior to the evaluation period.

Maintenance releases and expenditures increased in 1998 as a result of the functioning of the Ghana Road Fund (GRF). However, 1999 shows a fallback caused by the fact that releases to the GRF were frozen in the 4th quarter. In the first half of 2000 a strong effort has been made to disburse the unreleased funds to the GRF. By June 2000 most of the outstanding funds had been released.

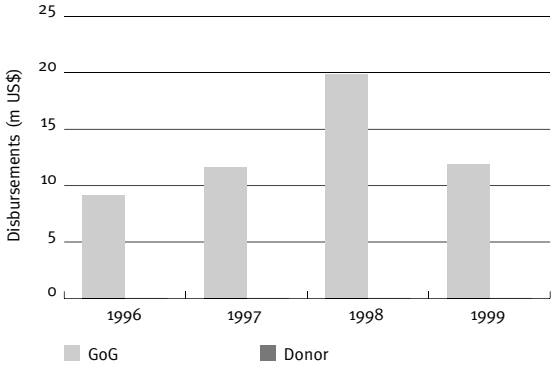
On aggregate, released levels and actual-achieved expenditures are not too far apart. The achieved expenditures may include outstanding payments to contractors from previous years. Discrepancies between releases and achieved expenditures indicate the building or settlement arrears from previous years.

11) One should be be aware of the fact that the scales of the four graphs above are different. This also applies to Box 5.2.

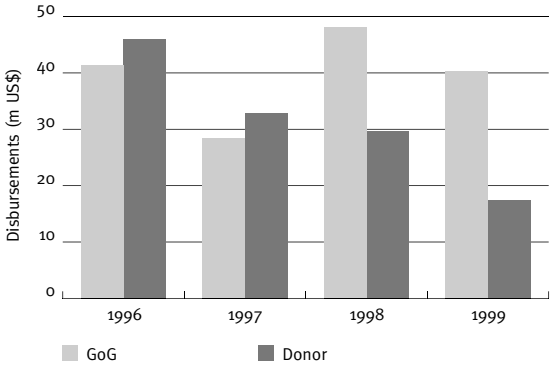
In Box 5.2 the funds released in 1996-1999 are presented. A distinction is made between the levels disbursed by the GoG and the donors.

Box 5.2 Funds released (1996-1999)

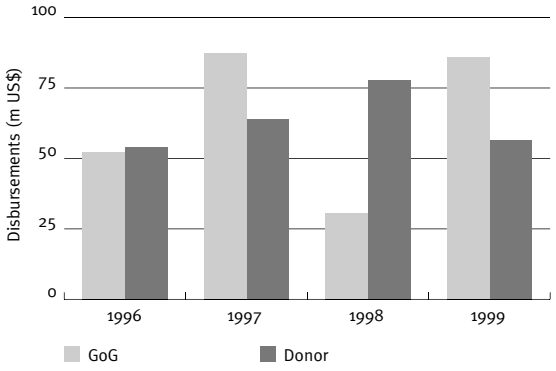
Routine maintenance



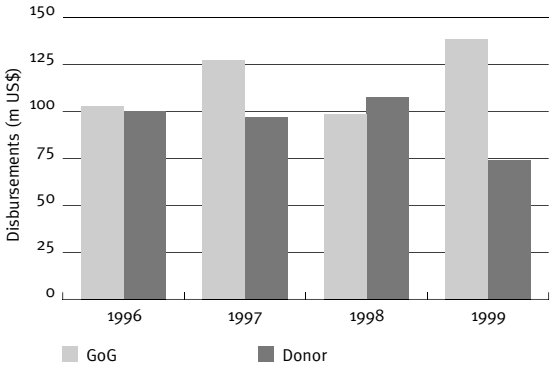
Periodic maintenance and rehabilitation



Reconstruction and development



Total



Concluding remarks – released funds
A comparison between the released funds as illustrated above and the programmed releases indicates that both GoG and donors are not reaching the programmed levels. In 1996 actual releases were a little below US$ 100 million while the programmed levels were US$ 144 million (donor) and US$ 173 million (GoG). For 1997-1999 programmed levels were US$ 182-172-123 million (donor) and 143-143-133 million US$ (GoG). For GoG 1999 releases are more or less in line with programmed levels. Releases from donor funds, however, continue to be (far) below programmed levels. This is due to a number of reasons, amongst others lengthy internal procedures and slow releases of counterpart funding.

Routine maintenance is fully funded by the GoG. Donor contribution in periodic maintenance and rehabilitation is decreasing while at the same time GoG's contribution is growing (with a temporary setback in 1999). The establishment of the GRF has been a strong contributing factor. Releases for reconstruction and development by the GoG are considered high, especially given the policy to give priority to maintenance activities. Again, the effect of arrears payment, and its distorting effect, should be taken into consideration. GoG releases in 1999 for example were largely arrears payments.

Total releases to the road sub-sector have more or less been constant through time during the evaluation period at a level of approximately US$ 200 million.

5.2 Road Fund performance

Background
In 1996 it was agreed to restructure the GRF, that had existed since 1985, so that it could operate according to sound accounting principles. The key changes were: (1) to develop a comprehensive legal framework, (2) to establish a public-private Road Fund Board to oversee management and (3) to establish a secretariat to manage day-to-day operations of the fund according to sound commercial principles. In addition it was determined that revenues paid into the GRF needed to be increased and that the first charge on the GRF would be the preservation of existing road assets.

The Road Fund Act 1997, Act 536, was enacted on 29th of August 1997 to establish a fund to finance routine and periodic maintenance and rehabilitation of public roads. The first GRF Board meeting took place in January 1997, six months prior to the GRF Act becoming effective. Board members are representatives from the private and public sector. The GRF secretariat has become operational and is functioning fully in accordance with the Road Fund Act. The secretariat currently consists of a director, an engineer, an accountant, a secretary and two drivers.

Revenues
According to the Road Fund Act the GRF will receive its funds through (1) fuel levies, (2) tolls, (3) vehicle license and inspection fees, (4) international transit fees and (5) such monies as the Minister of Finance in consultation with the Minister of Roads and Transport may determine with the approval of Parliament. In Table 5.1 an overview is presented of the revenues from the various above-mentioned sources.

Table 5.1 GRF revenues from various sources (billion Cedis)

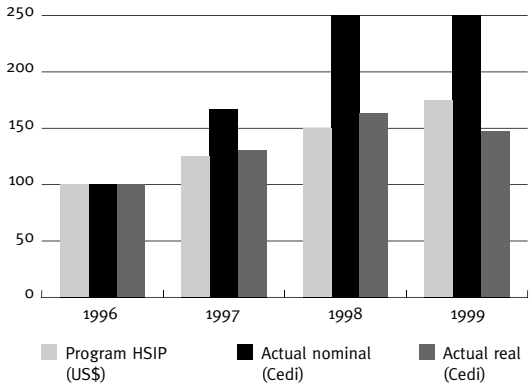
	1996	1997	1998	1999
Fuel levy	59.35	98.65	180.60	193.49
Bridge tolls	0.85	1.60	2.36	2.74
Road tolls	0.74	1.83	2.77	3.35
Ferry tolls	0.07	0.06	0.02	0.06
Vehicle registration fees	1.85	2.10	7.81	11.89
Road use fees	0.00	0.00	0.00	8.05
International transit fee	0.00	0.00	0.18	0.53
Grand total	62.86	104.24	193.74	220.11
Less exemptions	0.57	1.74	3.57	0.15
Net revenue	62.29	102.50	190.17	219.96

Source: GRF, 2000

Notes:
- Releases to the GRF were problematic in the 4th quarter of 1999. Apparently, these problems have been resolved, however, timely releases to the GRF remain a point of attention.
- Table 5.1 shows a solid increase of GRF revenues. Forecast revenues in 1999 are in nominal terms 3.5 times higher than the 1996 revenues.
- Revenues from fuel levies heavily dominate the revenues. Nevertheless, the combined other revenues are starting to make an impact as well. In 1996 fuel levies accounted for 95 percent of total GRF revenues. In 1999 this percentage went down to 88 percent.

The GoG had agreed to increase the level of fuel levies in the evaluation period at a rate of US$ 0.01 per year. In Figure 5.1 the indexed-programmed levels of fuel levies (in US$) are compared with the nominal levels (in Cedis) and the actual real levels (in Cedis).

Figure 5.1 Development of fuel levies for period 1996-1999 (index 1996=100)



Notes:
- The programmed levels are derived from the SAR of HSIP; the actual nominal levels are collected at the GRF. The actual real levels are calculated by correcting the actual nominal level with a combined goods index. The index figures are collected at GHA from monthly cost index overviews. In these overviews indices on local labour, equipment ownership and parts, fuel, including lubricants, bitumen, chippings, reinforcing steel and cement are merged into a combined goods index. For each year the March index figure is used (in absence of December figures for all years).
- The realisation of the estimated revenues for 2000 is under pressure as the programmed increase in fuel levy is expected to be postponed until next year.

Currently the GoG is reluctant to further increase fuel levies. Fuel prices have steadily gone up throughout the years, amongst others as a result of higher oil prices and the slide of the Cedi against the US$. Table 5.2 presents an overview of the development of fuel price at the pump, the fuel levies and the ratio between fuel levies and pump prices.

Table 5.2 Development of fuel prices, levies and the levy/pump price ratio [12)]

	Fuel price (Cedis)	Fuel levy (Cedis)	Ratio levy/pump price (*100)
1996 (Feb)	621.50	60.00	9.65
1997 (Feb)	778.89	100.00	12.84
1998 (Feb)	744.44	150.00	20.15
1999 (Jun)	855.56	150.00	17.53
2000 (Mar)	1,420.00	150.00	9.45

Source: Road Fund and Evaluation Team analysis

In most recent years fuel price increases have been higher than fuel levy increases. The levy/pump price ratio has consequently dropped. From a comparison with neighbouring countries it can be concluded that Ghana has modest fuel prices, both in nominal terms as in relation to GDP per capita. In conclusion, although short-term action does not seem to be advisable, there seems to be room for further increase in fuel prices, especially on the medium and long-term.

Fuel levies are collected by the Customs, Excise and Preventive Service (CEPS) and paid directly into the GRF account at the Bank of Ghana. During the 4th quarter of 1999 the GRF bank account was temporarily frozen, starting a debate on the desirable status of the account. Opening an account at a private bank was considered, but it was decided to keep the Bank of Ghana account under the strict condition that funds will be available.

Allocation

The Road Fund Act stipulated that the GRF shall make funds available for: (1) routine and periodic maintenance of road and related facilities, (2) upgrading and rehabilitation of roads, (3) road safety activities, (4) selected road safety projects and (5) such other relevant matters as may be determined by the Board. Table 5.3 presents an overview of the allocation to the road sector in 1996-1999.

Table 5.3 Allocation of GRF to road sector (billion Cedis)

	1996	1997	1998	1999
GHA	24.9	46.9	93.9	77.9
DFR	5.9	11.0	36.4	39.4
DUR	9.9	18.3	49.3	39.3
Sub total	*40.7*	*76.2*	*179.6*	*156.6*
MRT	0.0	2.7	0.4	1.3
NRSC	0.0	0.0	0.0	0.3
Total	40.7	78.9	180.0	158.2

Source: GRF, 2000

12) Months between brackets indicate the month of fuel price measurement. The price is petrol ex-pump per litre.

Notes:
- GRF allocation has steadily increased, with the year 1998 showing a huge increase, more than doubling the previous year. In 1999 expenditure fell back because 4th quarter revenues were not made available to the GRF.

Currently, GRF is able to cover some 70 percent of programmed maintenance needs. With projected GRF revenues increasing, a lively discussion has started on future spending of GRF revenues. Suggestions range from a focused attention on maintenance and rehabilitation activities to full coverage of all road sub-sector expenditures. Within the GHA it is suggested to pay salaries of GHA personnel out of GRF revenues.

Concluding remarks – Road Fund performance
GRF has shown good performance since becoming effective in 1997 and revenues for maintenance have steadily increased. Releases to the GRF were problematic during the 4th quarter of 1999, however, measures have been taken and apparently releases are back on track. Reliable releases are considered a crucial element for a proper functioning of the GRF and in a broader sense the road sub-sector. This aspect needs to be monitored carefully, especially given the financial difficulties the country is facing. Making GRF a statutory fund and introducing the direct collection of fuel revenues is considered good practice. If releases from the Bank of Ghana will again cause problems, it is recommended to transfer the funds to a commercial bank. This may also create room to negotiate a better financial return on the money in the account.

The planned levy increase in 2000 is expected to be postponed until 2001 and hence the projected revenues will be lower than anticipated. This will have its bearing on the realisation of the programmed maintenance activities of the EAs.

When further increasing the revenue basis of the GRF, it is recommended to focus on fuel levies. Fuel is by far the largest revenue generator and as argued above, there is room to further increase fuel prices. Other revenue sources are secondary to fuel levies, but nevertheless interesting enough to pay attention to, notably the road use fee, allowing for differentiation between damaging vehicles (heavy trucks) and vehicles with a lesser damaging effect (passenger cars).

The GRF staff is limited compared to international standards. The GRF engineer and accountant are thus facing difficulties in properly executing their tasks. Therefore, an addition to the GRF staff (e.g. junior engineer-junior accountant) seems justifiable.

Given the projected GRF revenue levels, it is suggested that a debate be started on the activities GRF should cover and that the conclusions should be so presented to the public that support for the GRF and potential increases in road user charges in the future become acceptable. First and foremost the levy should be increased to fully cover maintenance.

5.3 Arrears

Background
At the preparation stage of HSIP, the arrears problem was recognised as a major stumbling block towards the implementation of the road programme. There had been substantial budget overruns, which had resulted in large arrears accruing to contractors.

Budgets were exceeded by some 65 percent in 1994 and 1995 and arrears were estimated at US$ 75 million. The stated objectives of the PLF96 regarding the contract management functions are mostly related to the settlement of these arrears and prevention of such situation repeating.

Development of arrears levels in 1996-2000
In the HSIP SAR a schedule to pay outstanding arrears was included. In 1996 a substantial amount of money was paid to the contractors, however, the causes behind the arrears were not solved, enabling new arrears to emerge. A precise insight in the level of arrears on a year-to-year basis is lacking. However, the combined arrears at May 2000 are estimated at US$ 68.76 million [13]. It can be concluded that GoG has not been able to solve the arrears problem in the evaluation period. At the same time an improvement is evident in 2000 compared to the situation in 1999.

Causes of the arrears
The basic cause of the accumulated debt for major contracts has been the commitments to undertake large-scale projects without adequate budget coverage. The problem has been aggravated by delays in payment that increased the bill with interest.

These two causes (insufficient budget and delays of payment) are beyond the control of the EAs and even possibly beyond the control of MRT. Institutional re-organisation to take into account each level of duty and accountability in the implementation and results of the programme should be contemplated to effectively address these causes.

The arrears problem according to Winston & Strawn (W&S) [14], legal specialists, who were hired by the MRT to look into the problem, is presented in Box 5.3.

Box 5.3 The Winston and Strawn vision on the arrears problem

Though we have not finalised the arrears problem we can say for the moment that the heart of the arrears problem actually borders on public policy. There is a need to balance the critical need to develop Ghana's transportation infrastructure with the ability to pay for them. So long as the MRT chooses to tender projects without ensuring that adequate means are available to pay for those projects, the arrears problem will recur and the MRT's efforts to develop the road sector will be self-defeating. No improvements in management or administration by MRT, GHA or DUR will prevent further arrears unless:

1. A commitment is made by the GoG to limit the award of new road contracts for which money has been appropriated.
2. An attempt is made to limit the variance between original scope/price of project and final scope (via variation orders) and price.

Another cause behind the arrears problem is the performance by the road agencies in the field of contract management. This issue is elaborated on in more detail in Section 4.1.

13) Arrears Payment Report as at End of May 2000, MRT, July 2000. This level is considerably lower than the US$ 98.7 million at which the arrears were estimated in December 1999. GoG has made a strong effort to reduce the arrears in the first half of 2000. In addition, the devaluation of the Cedi against the US dollar has contributed to this lower level (expressed in US dollars).

14) Progress Report Winston & Strawn, January & February 2000.

Actions undertaken to solve arrears problem
Considered a dominant issue, efforts were made to properly deal with the arrears problems and a number of studies were conducted during the evaluation period. The issue picked up momentum in the second half of the evaluation period (from 1998 on), mainly because the donor community expressed their strong concern on the matter. Below a brief historic overview is presented.

In May 1998 MRT initiated action to examine the arrears problem. Legal specialists Trett Consulting was hired to study the problem. In November 1998, a comprehensive study of eight contracts by Trett led to recommended actions and specific options applicable to each contract and the prevalent legal framework. To date, the total resolution of the arrears payments remains to be done, although, according to the January/February 2000 W&S progress report, it is noted that the implementation of most of the 1998 Trett report's recommendations had been undertaken during 1999.

W&S has been appointed to provide further assistance to MRT. W&S reported that proposed dispositions leading to the financial arrangements had reached the final stage and were upon completion to be submitted to MRT.

A report on the arrears payment situation by MRT was published in January 2000 [15] and states that the MoF and the MRT have agreed on the following for the effective implementation of Cabinet's directives:

1. Payments related to seven contracts over the period 2000-2001, on the basis of the equivalent of US$ 40.00 million in 2000, and US$ 46.7 million in 2001.
2. Reduce the scope of works connected with these contracts to reach their completion by 2002 and schedule the related payments to reach full payment (about US$ 91 million) in three years (2000-2001).
3. Request donors to fund the outstanding works with other priority projects over the same three-year period.

Meanwhile additional measures have been taken to improve the capacity to adequately deal with procurement and contract management procedures. In this respect it should be mentioned that workshops for Tender Boards were organised in February 2000 on the legal aspects of the procurement process, including claims, disputes and dispute avoidance mechanisms. Also a procurement reform workshop was organised by the MoF as part of the national procurement reform process.

Concluding remarks – arrears
The arrears problem was not solved in the evaluation period. Especially in the beginning of the evaluation period, the GoG failed to eliminate the root of the arrears problem. Projects were tendered without the financial backing in place. In addition, variation orders were accepted on a regular basis. Consequently the total outstanding payments steadily increased to just under US$ 100 million in December 1999.

Improvements have been made. The root of the arrears problem is being tackled by putting in place appropriate procedures, such as those for limiting variation orders, abolition of negotiated contracts, training in procurement and contract management

15) Arrears Payment Report, Republic of Ghana, January 2000.

and developing procurement legislation. In 1999 and especially the first part of 2000, GoG actually lowered the levels of the arrears.

All things considered, the GoG still faces considerable arrears payments. In the proposal for the future road programme [16], arrears payments including interest are estimated at US$ 97 million (2000), US$ 100 million (2001) and US$ 51 million (2002). Together with the envisaged road expenditures this will put heavy pressure on the road-financing plan. Considering that settlement of the arrears has first priority consideration should be given to implementing the road programme at a less rapid pace. As a consequence the overall objective of clearing the backlog will be delayed.

The bottom line is that the relationship between budget availability and contracted amounts is the fundamental principle to apply through improved and more prudent planning management. Contracts should only be concluded when the full financing is in place.

5.4 Investment criteria prioritisation

In this section the two closely related issues of investment criteria and prioritisation are dealt with. In practice a distinction can be made between maintenance and rehabilitation on the one hand and reconstruction and development on the other hand. The basis for the distinction between the two groups of activities is summarised in Table 5.3.

Table 5.3 Investment criteria and prioritisation methods for road works

Activity	Funding	Investment criteria	Method for prioritisation
Maintenance and rehabilitation	Ghana Road Fund (GRF) and donors (especially for rehabilitation)	GRF: technical, based on road conditions, traffic levels and road categories. Donor: (socio-)economic, based on VOC savings vs. investment and maintenance costs(IRR›15).	GRF: through technical assessment maintenance needs are determined. This, together with a regional-political veto, is used to prioritise works. Donor: Take GoG suggested priority as basis, in addition apply own criteria (e.g. poverty-gender impact).
Reconstruction and development	Consolidated Fund and donors	CF: no objective investment criteria. Donor: (socio-)economic, based on VOC savings vs. investment and maintenance costs (IRR›15)	CF: political, no transparent process. Donor: Take GoG suggested priority as basis, in addition apply own criteria (e.g. poverty-gender impact).

16) Road Sub-sector Investment Programme (RSIP), Ministry of Roads and Transport, March 2000.

Investment criteria
The criteria for *maintenance works*, almost fully funded by the GoG through the GRF, are to a large extent based on technical grounds. The approach differs somewhat per organisation, but in general criteria used are road conditions, traffic levels and road categorisation. These criteria are input for a Pavement Management System, which is different for each agency. Although technical by nature there is an economic link in the sense that traffic levels and the road categories are indicators for economic development. The criteria are robust and simple and are used worldwide. Besides the purely technical component there is also a regional-political dimension involved (see section on prioritisation).

Rehabilitation works are partly financed through the GoG and partly through donors. When financed through the GoG a more or less similar routing is followed as described above. For donor funded projects normally cost-benefit analysis is applied. This is not unique for rehabilitation works but also applies to donor-funded *reconstruction and development works*.

Though based on similar principles, donors use different methods and inputs. Differences exist in the costs (unit costs for investment and maintenance), benefits (VOCs, inclusion of savings on externalities and socio-economic benefits) and the cost of capital (10-12-15 percent) used in appraisal. The World Bank criterion of a minimum IRR of 15 percent is therefore considered 'soft' as the method and inputs are not standardised.

Soft as it may be, the 15 percent criterion is still a difficult criterion to justify funding of low-traffic roads, such as feeder and trunk roads in low population density and often poor areas (e.g. the northern region). In order to address this issue, DFID is in the process of developing a new prioritisation system for road rehabilitation in which elements are included such as agriculture and marketing, informal public transport and the woman trader, and ethnicity and cycling behaviour. The system, working along two lines (1) a formal 'model' of quantifiable indicators and (2) participation of local population using 'stated preference' techniques, complies with criteria of rural poverty alleviation policies. Clearly, this is shifting away from the purely technical approach.

For GoG-funded *reconstruction and development* works there are no clear objective investment criteria in place through which national policy, such as agricultural development or import-export promotion (e.g. Gateway Policy) explicitly is translated into investment needs. A master plan that would take this aspect into consideration would be beneficial.

At the start of RSEP there was no master plan. However, during the evaluation period the EC financed a zonal study for the south-west region in which HDM was used for setting investment priorities. The World Bank will follow up on this by undertaking three zonal studies in the remainder of the country. At the same time, with the assistance of Japan a master plan for trunk roads is being developed. That master planning activities are now being undertaken is a positive development, but at the same time, the master plans are still missing a top-down approach, from national policy through investment criteria to road interventions. There are no clear economic criteria being applied in this master plan.

Donors often have their own set of criteria that are not necessarily the same as the criteria of the GoG. Poverty alleviation and gender impact are important donor policy aspects.

The principle of basing investment on sound economic principles may conflict with an equitable regional distribution of road access. A clear imbalance exists between the funds allocated to the various regions. In 1998, for example, the combined share of investments of the Upper West, Upper East and Northern Region was 11.4 percent while the share of the Greater Accra Region was 23.7 percent.

Prioritisation
The GoG has set its priorities in the order maintenance-rehabilitation-upgrading and (re)construction. As presented in Box 5.1 this policy was not fully realised during the evaluation period. Maintenance and (to some extent) rehabilitation have not reached the programmed expenditure levels (but are increasing due to the establishment of the GRF), while reconstruction and development exceeded the programmed levels (partly because of arrears payments).

At the start of the evaluation period there was no structured approach towards planning and prioritisation of *maintenance and rehabilitation works*. The start up of the GRF had the positive side effect that the road agencies were forced into providing an annual planning for and prioritisation of projects. For this purpose supporting pavement management systems have been developed, such as PMMP at GHA, MPBS at DFR and MMS at DUR (see Section 4.3), based on technical grounds. For all agencies there is also a regional-political element involved in setting investment priorities. After a list of investment projects is determined at a central level, the decentral level (regions and municipalities) is given the opportunity to make adjustments to the proposed list of projects based on regional needs.

The prioritisation process is organised on a bottom-up format and based on technical grounds combined with regional needs. A next step in streamlining the planning and prioritisation system could be to make the system more transparent. A set of *homogeneous* unit cost rates could be developed. This could be combined with the outcome of the planning system into annual maintenance and rehabilitation expenditure needs.

A prioritisation issue that is especially relevant for feeder roads is the limited VOC savings benefits on low volume roads. Many of the additional benefits can not easily be quantified and currently a discussion is taking place on a new prioritisation system for feeder roads (see previous section investment criteria).

The prioritisation process of *reconstruction and development works* is not a transparent process and is mainly politically determined.

Concluding remarks – investment criteria/prioritisation
GoG finances maintenance works through the GRF. Criteria for maintenance projects are based on technical grounds (road conditions, traffic levels, road categorisation) which are criteria commonly used worldwide. Prioritisation is based on the technical criteria as described above (in most cases processed through a maintenance system) and on a politically decentralised process determined by regional needs. Rehabilitation works financed by the GoG follow a similar pattern. For rehabilitation works financed by

donors, investment criteria used are (1) a minimum return on investment (usually IRR >15 percent), to be determined through Cost Benefit Analysis (CBA) and (2) additional criteria, such as environmental, poverty and gender impact. This applies for all donor financed projects, including reconstruction and development.

It would be beneficial if MRT were to set up a framework of standards, including (1) unit cost of construction/rehabilitation, (2) VOCs, (3) value of time, (4) opportunity cost of capital and (5) environmental, safety and additional socio-economic impact.

However, straightforward application of the economic approach could fail when used in the appraisal of feeder road projects:

- Low traffic levels might prohibit economic justification, primarily based on VOC savings. Moreover, traffic data are frequently unreliable.
- The relevance of the method of benefit estimation 'consumer surplus for existing and producer surplus for generated traffic' is increasingly questioned if applied to low density rural road projects.
- Standard economic appraisal does not take explicit account of:
  - minimum access conditions;
  - rural poverty alleviation.

Of course, CBA could be extended to a 'social' analysis, by weighing the benefits to recipient groups, but still the disadvantage of not dealing with quantifiable factors (regional impact, poverty, environment) applies.

To avoid such drawbacks the application of Multi-Criteria Analysis (MCA) could be contemplated. MCA allows for the comparison of economic data (derived from economic feasibility studies) with non-financial criteria, stemming from regional and environmental impact assessment.

MCA methods can deal with both quantifiable (money terms or other) and qualitative ('non-quantifiable plusses and minuses') variables. Alternative projects receive scores for each of the nominated criteria and by weighing their relative importance, a priority ranking emerges. In the weighing process, preferences of central and regional governments, local population, users and organisation can be taken into account. The available multi-criteria decision techniques enable comparison of both quantitative and qualitative data in a flexible manner and make maximum use of existing information. Promising experience with MCA techniques have been gained in European and emerging economies.

A straightforward application of MCA in prioritising rural road investments could be as follows. First, the initial ranking is set according to 'sound economic principles', i.e. the IRR, or maybe even better the 'profitability index' (ratio of net present value over investment proposed). Subsequently, other quantitative and qualitative criteria can be added to the MCA and (relative) weights attached to each variable. Now it can be seen how the ranking based on economic criteria alone might change when criteria such as regional and environmental impact are included in the assessment.

In this context it should be noted that the World Bank has developed a Roads Economic Decision Model [17] (RED) specifically suitable for low-volume roads. This does not demand input parameters that are unrealistic and costly to collect while it presents the results in a practical and effective manner. RED computes benefits accruing to normal, generated, and diverted traffic, as a function of a reduction in vehicle operating and time costs. It also computes safety benefits, and model users can add other benefits (or costs) to the analysis, such as those related to non-motorised traffic, social service delivery and environmental impacts. RED is easy to use and requires limited number of input data requirements consistent with the level of data likely to be available for the analysis of low-volume roads in developing countries.

17) See SSATP Note No 18, RED for Economic Evaluation of Low Volume Roads, Rodrigo S. Archondo-Callao, April 1999 (http://www.worldbank.org/afr/transport/newsletter/web18.pdf).

6. Findings: Technical-physical Context

This chapter centres on the issues with a physical-technical orientation. First the physical achievements are presented, in which actual and programmed levels are compared. Then the condition of the road network throughout the evaluation period is presented. Next, the technical procedures in the agencies determining the road programme (road classification and standards, pavement management system, etc.) are described, followed by the issue of overloading and measures taken to overcome this problem.

6.1 Physical achievement

The physical achievements in 1996-1999 for the three EAs are presented in Table 6.1.

Table 6.1 Physical achievement in period 1996-1999 (kilometres) [18)]

	GHA	DFR	DUR	Total
1996				
Routine Maintenance	6,000.0	2,000.0	510.0	8,510.0
Periodic Maintenance	471.2	3,716.0	60.0	4,247.2
Rehabilitation	35.0	-	14.0	49.0
Reconstruction and development	250.0	8.0	18.0	276.0
1997				
Routine Maintenance	5,400.0	4,550.0	600.0	10,550.0
Periodic Maintenance	333.0	478.0	25.2	836.2
Rehabilitation	95.0	1,394.0	19.4	1,508.4
Reconstruction and development	250.0	6.0	-	256.0
1998				
Routine Maintenance	8,415.0	9,500.0	-	17,915.0
Periodic Maintenance	482.0	930.0	120.6	1,532.6
Rehabilitation	53.0	693.0	20.6	766.6
Reconstruction and development	170.0	-	-	170.0
1999				
Routine Maintenance	4,897.0	11,570.0	1,600.0	18,067.0
Periodic Maintenance	1,062.4	1,945.0	61.7	3,069.1
Rehabilitation	-	250.0	14.9	264.9
Reconstruction and development	197.0	7.0	-	204.0

Source: Review Reports for Donor Conferences (1997-1999)

18) Actual achievement for the year 2000 not yet known.

The programmed 'scaled-down road work programme' as determined in the SAR of HSIP is compared with the actual achievement in the evaluation period. Table 6.2 presents the overview, including the ratio of actual vs. programmed levels.

Table 6.2 Actual and programmed physical achievement period 1996-2000

	GHA			DFR			DUR		
	Actual (km)	Progr. (km)	Ratio (%)	Actual (km)	Progr. (km)	Ratio (%)	Actual (km)	Progr. (km)	Ratio (%)
Routine Maintenance	6,798	11,600	59	7,412	18,800	39	944	830	114
Periodic Maintenance	3,421	7,600	45	10,667	8,490	126	504	400	126
Rehabilitation	231	360	64	2,337	4,980	47	69	-	-
Reconstruction and development	963	920	105	37	89	42	37	148	25

Source RSSIP annual reports 1997, 1998 and 1999

Notes:

- Routine maintenance is expressed in kilometres per annum; periodic maintenance, rehabilitation and reconstruction and development are expressed in total kilometres accomplished in the evaluation period. Figures for 2000 have been estimated based on 80 percent of objective achievements.
- GHA has not been able to reach the programmed levels of routine and periodic maintenance and rehabilitation. An obvious factor in not realising the programmed levels is the amount of funds released (see Section 5.1). At the same time it should be noted that reconstruction and development works have slightly exceeded the programmed levels.
- DFR performed an average annual routine maintenance of 7,412 kilometres, which is below RSEP programmed levels. However, it is fairly close to the length of the 'maintainable' network. If the performance of periodic maintenance and rehabilitation are combined, the ratio of achieved vs. programmed comes to 97 percent. In this respect the policy of giving priority to maintenance is respected. Again, a major reason for not realising the targeted levels is the limited amounts of funds made available. Another reason may be the slow implementation of the MPBS.
- DUR is on track regarding its maintenance activities, in fact programmed levels are actually being exceeded. Construction works are behind schedule. However, if rehabilitation works would be included in the comparison the ratio of achieved-programmed would surpass 70 percent. The maintenance priority policy is being respected and physical achievement is to a large extent on track.

6.2 Condition of the road network

The main objective of PLF96 is to clear the backlog on a long-term sustainable basis, making the development of the road conditions a key parameter in determining the achievements of the road sub-sector. One of the policy issues is to raise the road network to a condition mix of 70 percent good, 20 percent fair and a maximum level of 10 percent poor by the year 2005.

Since 1997 an objective assessment of the road conditions has been made on an annual basis. The assessment of the 1997 condition mix forms the basis for future assessments. In Table 6.3 an overview is presented of the road condition mix for the three EAs in 1997-1999.

Table 6.3 Road condition mix 1997-1999

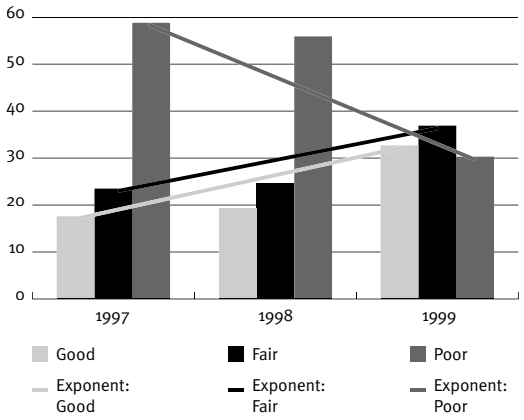
	GHA	DFR		DUR	Total
		Maintainable	Total [19]		
1997					
Length (km)	13,955	9,805	23,605	2,210	25,683
Good (%)	18	51	21	24	31
Fair (%)	23	36	15	26	29
Poor (%)	59	13	64	50	40
1998					
Length (km)	13,507	N.A.	N.A.	N.A.	N.A.
Good (%)	19				
Fair (%)	25				
Poor (%)	56				
1999					
Length (km)	13,433	12,500	24,123	2,909	28,842
Good (%)	33	52	27	31	35
Fair (%)	37	44	23	28	45
Poor (%)	30	4	50	41	20

Source: MRT Review reports Annual Donor Conference (1997-1999)

GHA prepares a report on the general condition of the trunk road network under its jurisdiction [20]. The methodology employed, which is based on the Pavement Maintenance and Management Programme (PMMP) system (see next section), has remained the same each year. In Figure 6.1 the development of the road condition mix is presented graphically, including trendlines determined through regression analysis.

19) Here 'total' represents 'maintainable' plus 'non-maintainable' road lengths.
20) With the exception of 1997 in which no report was produced.

Figure 6.1 Road condition mix GHA 1997-1999



Although the 2005 target (70-20-10) is considered quite ambitious, the GHA development over the last three years, which is exemplary for the total road sub-sector development, indicates a strong positive development. If this development continues, the targeted levels for 2005 are within reach. However, realisation depends on many factors, such as functioning of the GRF, settlement of the arrears problem, and introduction of sound contract management procedures.

In order to verify the quality of the road condition surveys, the surveys for the year 2000 in the Accra, Tamale and Kumasi area were checked. There were no problems found in the way the surveys were done. Most of the problems encountered were dealing with inaccurate section lengths. Based on the checks it can be concluded that the quality of the surveys was good and that road condition mix obtained from the surveys is trustworthy.

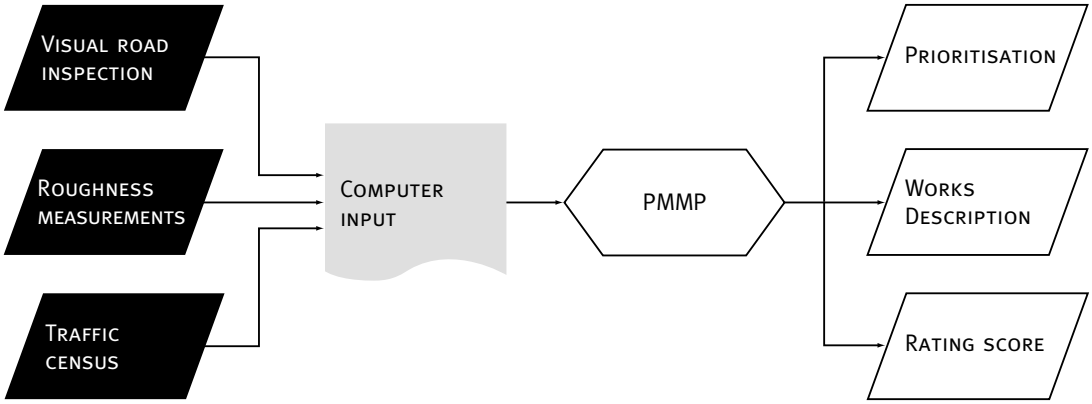
Concluding remarks – condition of the road network
Road conditions have substantially improved over the last few years. At the current rate of improvement the 70-20-10 aim in 2005 is achievable, however under stringent conditions (e.g. solving arrears problem, budget availability, donor contribution). Given the current state of the economy a more cautious target could be considered. The methodology of road condition measurement is considered sound, although some problems exist, e.g. regarding inaccurate section lengths which is being tackled with GTZ assistance.

6.3 Technical procedures

In this section a number of technical procedures in the EAs related to preparing a road programme are addressed. The focal point is the system used for maintenance management, together with required inputs and output.

Ghana Highway Authority
At GHA a PMMP has been in operation since 1998 after being tested it in 1997. The implementation process started in 1996. The basic PMMP process, in which visual road inspection, roughness measurement and traffic data are computerised, processed in the PMMP and transferred into a prioritisation of road works, works description and a rating score, is illustrated in Figure 6.2.

Figure 6.2 PMMP process at GHA



Presently, technical assistance is made available to revise the PMMP. The review of the system has resulted in the identification of some obstacles in the programme that are hindering its proper use. An overview is presented in Box 6.1 [21)].

Box 6.1 Obstacles in the proper use of the PMMP

In using the PMMP for budgeting purpose, it was realised that the system recommended maintenance options and costs that were very different from what GHA maintenance practices would recommend. Also reports could not be further processed because of the DOS base of PMMP. Moreover, other limitations and/or weaknesses make the software cumbersome to use:

- It does not allow data to be saved of floppies.
- It is unable to merge data files from each region, which means that data input must be centralised.
- It over-depends on Roughness Measurements for the evaluation of the road condition score.
- The use of roughness for gravel condition prediction must give way to a more objective procedure based on gravel thickness, distresses, etc.
- The inability to edit reports produced by PMMP means that each time an effort must be made to export the output into EXCEL or some other Windows„ software.
- The programme cannot accept text or characters as route numbers as it is the case now with the new network classification system.

Source: GTZ, 2000

Another important issue within PMMP is the determination of the gravel road condition score. The gravel road condition is determined using roughness measurement. But this introduces a bias in the assessment. A road recently graded but with a very thin layer of good quality top material may be classified as 'good' because of its low roughness index, but its condition can change rapidly after a heavy rain and the passage of a few heavy vehicles.

The required PMMP inputs, visual road inspections and roughness measurement are gathered from the road condition surveys, as described in the previous sections. Traffic counts are carried out on a monthly basis at predefined locations and are direct input to the PMMP. Generally, the traffic counts are not considered fully reliable because of

21) Quotes taken from "Experience in use of PMMP from the 1999 Road Condition Report and 2000 preliminary Maintenance Budget as well as frontiers for modification/review", GTZ, 2000.

lack of supervision and experienced personnel. According to the GHA Planning Division [22] the following problems were hindering traffic surveys: (1) inadequate number of regional traffic officers, (2) insufficient road overseers, (3) lack of automatic traffic counters and (4) continuous reliance on outdated daily adjustment factors.

Department of Feeder Roads
DFR set up and implemented the Maintenance Performance Budgeting System (MPBS) in 1994 as part of the NFRRMP. The system is currently operating in five out of the 10 regions. The MPBS is a maintenance management system determining financial requirements needed to accomplish specific work programmes based on pre-determined levels of maintenance service and performance standards.

The MPBS provides DFR management with data allowing them to make decisions regarding work programming taking into consideration (1) available financial resources and (2) the expanding network of maintainable roads.

The responsibility of DFR headquarters is to set a national framework of standards, planning values and procedures based on DFR policy. Decision-making and managing regional operations based on MPBS is a regional responsibility. This combination makes the MPBS a useful tool for decentralisation purposes.

During the evaluation period efforts were made to install the PMMP (see GHA) at DFR. This system was rejected and DFR decided to continue with the MPBS system that was already in place.

Department of Urban Roads
Currently DUR is not using a formalised maintenance management system. Consultants installed a Pavement Management System based on the PMMP (see GHA) which was found not to be adequate. DUR is looking not so much for a Pavement Management System, focusing on pavement only, but for a Maintenance Management System, taking additional maintenance aspects, such as traffic lights and sidewalks into consideration. The current practice of maintenance planning is rather pragmatic. MMDUs prepare a list of maintenance projects to which additional projects are added based on local needs.

A road condition survey was carried out in 1997 as part of the establishment of the above-mentioned PMMP and using the same documents as at GHA. In 1998 and 1999 road condition surveys were based on rapid visual inspection. In 2000 the inspection was contracted out to two teams supervised by DUR personnel.

Concluding remark – technical procedures
The introduction of the PMMP at GHA is a substantial step in the process of creating a transparent maintenance, rehabilitation and reconstruction and development strategy. The implementation process has not been without problems and currently the system is under review. Efforts are being made to further improve the system towards its full potential. Introducing the PMMP at DFR has not been a success. The system was abolished and the existing system was kept in place. The system is functioning and allows DFR headquarters to set a national framework within which regions can

22) GHA, 1998 Annual Traffic Report.

determine their own road programme. Harmonisation of a maintenance management system would also be beneficial for DUR. Although there seems to be a clear understanding of the maintenance needs, adopting a more systematic approach based on common procedures and standards would make the process more transparent and facilitate the decentralisation process.

6.4 Road classification and standards

Ghana Highway Authority
According to GHA the existing road design standards are as follows with regard to cross sections dimensions [23]:

National Roads: 7.3m pavement width + 2 x (2.0 to 2.5m width shoulders).
Interregional roads: 7.0m pavement width + 2 x (2.0 width shoulders).
Regional roads: 7.0m pavement width + 2 x (1.5 to 2.0m width shoulders).

These values for paved roads are widely used throughout the world [24] and therefore from an engineering point of view appear perfectly acceptable. Although in some specific cases, for economic reasons because of low traffic volumes, these standards may be somehow lowered to 6m-pavement width. Nevertheless, GHA officials stated that there is no new or rehabilitated road whatsoever where pavement width exceeds these standards except when a 'climbing lane' is introduced for slow moving trucks or at some major intersection approaches and only then within economic feasibility thresholds.

For gravel roads the standard is 7.0m without shoulders although the plans are for paving most of the existing gravel roads within 20 years, with paved roads going from 45% of the total length up to 80% by 2020.

Department of Feeder Roads
In the Department of Feeder Roads a road classification is being introduced as of year 2000 where feeder roads are categorised as follows:

- District roads.
- Sub-district roads.
- Community roads.

So far no length breakdown is available.

In terms of standards, the following are supposed to apply for gravel roads:

District roads: 7m wide wearing course (side slope to side slope).
Sub-district roads: 6 to 5m wearing course.
Community roads: 5m wearing course (although very seldom, one can find 3m width).

For paved roads, the standard is 7.3m wide surface dressing with 2 x 1.0m shoulders.

23) Bold and underlined dimensions are the most widely used ones for shoulders.
24) General standard is 2 lanes of 3.5m or 3.65m with shoulders varying from 1.0 to 2.5m depending on the country.

All these values are presented in a document called 'standard details for feeder roads', prepared by the MRH in March 1991.

Department of Urban Roads
DUR is using the same standards as GHA, the 'Standard details for Urban and Trunk Roads'.

Concluding remarks – classification and standards
The values for paved roads (GHA, DFR and DUR) are those used throughout the world and from an engineering point of view thus appear perfectly acceptable. For economic reasons, e.g. low traffic roads, these standards may be lowered to 6m pavement width. Nevertheless, GHA officials stated that there is no new or rehabilitated road where pavement width is larger than these standards except when a 'climbing lane' is introduced or at some major intersection approaches and only within economic feasibility thresholds. For gravel roads, the standards are linked to the road classification and are also acceptable from an engineering viewpoint.

6.5 Weighbridges-overloading

Overloading is a serious problem in Ghana, raising maintenance costs for the road network. The stated policy formulated by the MRT is to enforce the existing regulation of axle load limit (maximum for a single axle: 10 tons and the maximum for a tandem axle: 18 tons) in order to enable the re-establishment and protection of the road capital base, without spending more money than is necessary (thus without over-designing the pavement thickness).

In order to achieve this objective, a master plan for axle load control was drawn up. This plan aimed at the installation of 27 permanent weighbridges at selected locations on the trunk road network as well as procuring 21 portable weighbridges for the ten regional offices and head office in Accra.

At present, GHA has procured and installed two permanent weighbridges that are in operation at Asuoyeboah on the Kumasi-Sunyani Road and at Ofankor on the Accra-Kumasi Road. A third weighbridge has been installed on National Road no.10 from Tamale to the Burkina Faso border, a few kilometres north of Tamale. Besides these three permanent weighbridges, GHA also has five portable weighbridges in stock to monitor axle load control activities and perform on-the-spot checks. In addition, the European Union is financing the procurement and installation of two permanent weighbridges to be sited between Bogoso and Bawdia in the Western Region and on the access road to the port of Tema. The World Bank is financing the procurement and installation of six permanent weighbridges and ten portable weighbridges. GHA (locally funded) is installing a new weighbridge located at Yapei in the Northern Region; these additional weighbridges should be operational before end 2001.

After the completion of these procurement processes, GHA will still need an additional 15 permanent weighbridges and six mobile weighbridges in order to meet the objectives of the master plan. Presently, GHA is looking for funding assistance from Japan's International Co-operation Agency (JICA) in order to be able to procure the remaining weighbridges.

Current operations
Currently a crew of five (GHA personnel and police officers) mans the weighbridges. Weighbridge stations operate on Monday-Friday (05.00-18.00) and Saturday (05.00-12.00). An independent team using mobile weighbridges monitors the stations' activities.

Visits to the weighbridge stations of Accra and Kumasi resulted in the following observations:

- Based on the (limited) statistical sample, the percentage of trucks surpassing weight limits is increasing. However, the statistical sample was considered too limited to define policy measures. The trend is worrying.
- Large differences exist between the results recorded at both weighbridges. Accra showed an almost 100 percent score for overweight trucks, while Kumasi scored considerably lower.
- Accra operates a 5-day working week, while Kumasi operates a 6-day working week.

Both stations only weigh suspected offending trucks. There is a shortage of experienced manpower and more training is required, especially when handling tandem axles. There is a lack of unloading facilities, restricting corrective measures once overloading is proven.

Concluding remarks – weighbridges/overloading
The implementation of the master plan is clearly behind schedule. So far, only three weighbridges out of the planned 27 permanent weighbridges have been installed, although 12 should be operational next year.

The weighbridges are not functioning optimally. Based on February 2000 data for Kumasi and Accra and a side visit to the stations the following remarks can be made on the functioning of the weighbridges (see Box 6.2).

Box 6.2 Remarks on functioning of weighbridges

- Not all truck are systematically weighed, police officers letting some trucks pass without checking.
- The operation schedule seems to be inappropriate as many trucks wait until 18:00 (station closing time) to proceed.
- Because of the location of the weighbridge (Ofankor on the Accra-Kumasi road), fairly close to Accra, there are alternate routes that enable truckers to skip the weighing station.
- The design of the axle load survey form should be amended to enable better recording of the type of truck and its axle pattern (there is no need for light vehicle code value, as they are not weighed).

Source: Team analysis

These problems are internal to GHA. The Environment and Safety Division in charge of the axle load control should put more attention on weighbridge operations. A thorough revision of these should be undertaken not only as a way of punishing offending trucks but also in obtaining useful data on axle load distribution. This would then allow the statement as to whether there was a definite improvement in the situation or not, and whether the programme was working. With the present procedures in force (weighing only suspected offending trucks), this is not possible.

6.6 Non-motorised transport

In the PLF96 it was stated that the GoG is committed to continuing its support for NMT initiated under ongoing World Bank-financed projects. This will include development and promoting of NMT, as well as providing better facilities in urban areas for safe and effective use of NMT.

In the evaluation period not much direct evidence was found of NMT projects in rural areas, although there is an increasing awareness that improvement of rural roads should be integrated into an overall rural policy that may include a more intensive use of NMT. Current rural transport is still dominated by head loading and walking. A Rural Travel and Transport Programme (RTTP) was launched in May 1999. Results of the programme are not known to the Evaluation Team.

A study to assess the transport and mobility needs of urban poor carried out in 1992 revealed that 62 percent of households in Accra own at least one bicycle, but their use is restricted to local roads, where traffic is light. Within the Urban Transport Project (UTP) dedicated routes for NMT and walkways have been created. The provision of paths for NMT along the major mobility corridors has resulted in increased safety for both NMT users and motorists and encouraged more people to adopt it as their means of transport.

Furthermore, the construction of dedicated bicycle paths and access roads to certain low-income communities in Accra has been to the advantage of the poor. Associated benefits include [25]:

- Savings of between 200 and 1000 Cedis per trip.
- Enhanced safety of NMT users.
- Availability of dedicated routes, which can also be used by learners.

The following recommendations are mentioned in the UTP Completion Report:

- Operation of NMT facilities requires the definition of a role for law enforcement agencies.
- Advanced publicity and education campaign to prepare the public is desirable for NMT schemes.
- Involvement of stakeholders in the design of NMT facilities and monitoring of construction has reduced cost and generated support for the scheme.
- Adoption of a multi-disciplinary approach to urban projects particularly NMT promotion and development, gives better perception to the potential user, eliminates usage problems such as encroachment, and encourages ownership by the user.
- In the absence of parks, NMT paths present opportunities for learners particularly girls to use bicycles.

25) According to the Evaluation Report of Urban Transport Project.

Concluding remarks – NMT
NMT has not been a major factor within the RSEP programme. The main activities have concentrated on urban NMT activities, notably the construction of bicycle and pedestrian paths in Accra. In order to encourage the use of NMT facilities, it is important to start a publicity and education campaign.

Regarding NMT use in rural areas it would be beneficial to create a rural transport policy incorporating the rural road and rural NMT components.

7. Evaluation

7.1 Relevance

Government and society of Ghana
As mentioned, Ghana has adopted a growth strategy to achieve status of a middle income country by the year 2020, giving attention to both rural and urban development, human development and the creation of an enabling environment. In political terms Ghana has adopted a strategy of decentralisation of decision making to the Districts.

The interventions in the road sector in the evaluation period have been highly relevant in this context. The investments in the road network, its maintenance and the associated strengthening of institutions and organisations have all been supportive of the growth strategy and at the same time catered for the needs of society for lower transport costs and improved accessibility.

The attention for rural development has been shown in the rural and feeder roads interventions. Moreover, the strategy of outsourcing maintenance and construction works has induced the development of a private sector, with associated employment and income generation in both rural and urban areas.

Donor priorities
Donors are generally interested in the reduction of vehicle operating costs by creating an environment that assures maintenance and by investing in major reconstruction and development works. In addition, donors have to a varying degree set priorities in terms of attention to rural areas (poverty alleviation), environmental impact, safety, non-motorised transport, institutional capacity etc. In spite of the varying emphasis by individual donors, the interventions were in line with Ghanaian society needs and GoG's stated policies.

7.2 Effectiveness

The effectiveness of the road sub-sector programme is related to the extent to which the principal objective of clearing the backlog on a long-term sustainable basis has been realised as formulated in PLF96. In Table 7.1 the PLF96 objectives are presented together with an assessment to what extent the objectives have so far been met, the likelihood of their achievement in the longer term and the main problems encountered.

Table 7.1 Effectiveness of PLF96 objectives

Objective [26]	Description of achievement	Likeliness to achieve	Main problems encountered
Institutional Capacity and Human Resource Management (HRM) Score: Medium *Institutional structures are in place, implementation (partly) behind schedule.* *Human Resource development dependent on donors.* 1. Strengthen institutional capacity and HRM 2. Decentral-isation DFR and DUR 3. Changes after inauguration of GHA Board	Comment: Objectives are not quantified and no hard targets are set. A qualitative assessment is made of the realisation of the objectives. • Reorganising MRH in MRT has brought the organisation structure in line with elsewhere in the world, focusing on integration of infrastructure, traffic and transportation within a mode. • At GHA a new Board has been established. Changes in management structure and procedures are difficult to assess, as the Board was not established until late 1999. Management is co-ordinated through collective and individual meetings of the Directorate. • Staff numbers have been brought down, although not to the programmed levels. Lack of retrenchment funds hampers adjustment of GHA staff make-up. At the same time, the agencies have a shortage of higher qualified, professional staff, but current government policy does not allow recruitment of new staff. • MRT as well as the agencies are facing difficulties in retaining qualified personnel. The private sector is a better paying alternative. Training (international) is one of the incentives of working for the public sector. • For decentralisation a cautious approach has been followed in which DFR and DUR tasks are gradually shifted to the local authorities. In both organisations pilot projects are used to build up expertise in the decentralisation process.	• Strengthening the institutional capacity and HRM development is an ongoing process. Results depend to a large extent on external political decisions (decentralisation, budget allocation, retrenchment funds, etc.), willingness of people to change and technical assistance provided by donors. • Decentralisation can be achieved, however, the optimal level of decentralisation should be carefully decided, as it is a delicate balance between potential economies of scope and diseconomies of scale. A key success factor is the extent to which a shift of budget and personnel between ministries can be orchestrated.	• Lack of funding has been a principal problem for institutional strengthening and HRM development. Clear examples are the inability to pay retrenchment, the limited training budgets from national sources available and the salary gap between public and private sector. • The decentral-isation process is frustrated by lack of qualified personnel to work in the districts, lack of logistics support and housing in the regions. People are not always eager to move to a District. So far no major problems are known as a result of dual responsibility of the MMDUs (to DUR headquarters and MMDA), however there is a potential conflict.

26) The objectives in Table 7.1 (e.g. Institutional Capacity and HRM) refer to the objectives as defined in PLF96. A full overview of these objectives is presented in Section 3.1 of this report.

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likeliness to achieve	Main problems encountered
Clearing the backlog Score: Medium *Programme objectives not fully achieved but condition mix improved considerably.* 1. Physical achievement 2. Road condition mix: compare with targets 3. Funding vs. programmed expenditures	Comment: Quantified 70-20-10 target for 2005. Physical and financial achievement also quantified. • GHA has not been able to meet the programmed physical achievement for maintenance (59 % routine and 45 % periodic) and rehabilitation (64 %). At the same time the development works were overachieved (104 %). • Comparing DFR achievement with original routine maintenance targets (39 %) indicates poor performance. However, DFR has redefined its network into a maintainable and nonmaintainable section. Close to 100 % of the maintainable network is covered. Combining periodic maintenance and rehabilitation results in a 97 % coverage. • DUR shows good coverage of maintenance (114 % routine and 126 % periodic). Reconstruction and development works are behind on schedule, however, if rehabilitation works were to be included the coverage ratio would surpass 70 %. • Remarkable progress has been made comparing the 1997 and 1999 road condition figures. The 70-20-10 mix is achievable, however under very stringent conditions. • Total expenditure is somewhat below but close to programmed (downsized RSEP) levels. Maintenance expenditures are below programmed levels, while reconstruction and development expenditures are at or even exceeding programmed levels. • GoG and donors are both not reaching the programmed levels of released funds. On aggregate US$ 200 million is released per year. GoG has secured (part of the) funding through the establishment of the GRF. Releases from the Consolidated Fund are limited. Donor releases are far behind on programmed levels.	• The physical achievement is partly a reflection of the realised expenditures. Maintenance and rehabilitation are programmed levels, while development works are (generally) exceeding these levels. • 70-20-10 in 2005 is considered quite ambitious. Achieving this road condition mix is considered possible if the GRF will become a (more) reliable source of funds for maintenance and rehabilitation, if the GRF revenue basis will continue to grow and if additional funding can be secured for reconstruction and development works. However, financial constraints (limited Consolidated Fund money available, arrears problem that needs to be solved) should be taken into consideration.	• Insufficient and unreliable flow of financial resources. • Donor releases behind on schedule. • Not fully complying with the policy of giving priority to maintenance over rehabilitation, reconstruction and development works.

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likeliness to achieve	Main problems encountered
Investment priorities Score: Medium *Increasing role for economic principles in project selection; priority to spending on maintenance not fully achieved.* 1. Sound economic principles 2. Giving priority to maintenance	Comment: Priority spending is quantifiable, sound economic principles are not. • Economic principles are applied to part of the investment decisions. All donor funded investments require economic assessment. Expenditures in maintenance works are technically (road condition, traffic, type of road) and politically (adjustments based on local needs) determined. Investment procedures for projects solely financed through the Consolidated Fund are less transparent and to a large extent based on political grounds. However, limited number of projects have been financed through the Consolidated Fund lately. • Equal regional distribution has not been realised. • The policy to give highest priority to routine and periodic maintenance, followed by rehabilitation, reconstruction and new development is not fully met, as illustrated above (clearing the backlog).	• The introduction of maintenance management systems has facilitated the introduction of national harmonised standards (potentially based on economic principles). Further use of these systems may rationalise investments. • Current discussion on investing in low volume roads could lead to a more equal regional distribution. • The success of the GRF may further provide a financial basis for maintenance.	• Low volume (feeder) roads do not show high economic rate of return. • Lack of transparency in the selection of projects financed through the Consolidated Fund. • Different ways of assessing economic feasibility by donors. Approach is similar (cost benefit analysis based on VOC savings), however, inputs strongly differ (VOC values, cost of capital, inclusion of socio-economic benefits and accident costs, etc.)

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likeliness to achieve	Main problems encountered
Cost recovery Score: High *GRF has successfully developed in main provider of maintenance funds.* 1. Road Fund performance 2. Balance maintenance funds	Comment: Objective not quantified, however partly quantifiable. • GRF has shown good performance since becoming effective in 1997, maintenance revenues have steadily increased. The development of fuel levies is in line with programmed increases. In addition, other revenues have strongly increased as well. Forecast revenues for 2000 are five times higher than 1996 levels in Cedis, however, it should be noted that due to a strongly devalued Cedi, the fuel levy target of 0.10 US$/litre is far away. The GRF now accounts for some 70% of total maintenance needs and GRF is expected to cover all maintenance needs in the long run. Donors contribute marginally to maintenance activities while the Consolidated Fund does not contribute at all. • GRF has faced difficulties in the 4th quarter of 1999 when the bank account at Bank of Ghana was temporarily frozen, negatively impacting the maintenance (funding) procedure. • The programmed fuel levy increase for 2000 will most likely be postponed until 2001.	• The current success of GRF may create a future threat, especially as the GRF revenues are increasing and the economic situation in the country is worsening. In addition pressure may build up to allocate resources to activities other than maintenance.	• The 1999 4th quarter difficulties in releasing funds. • Staffing difficulties, GRF operating with staff of only four (director, engineer, accountant and secretary).

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likeliness to achieve	Main problems encountered
Private sector participation and financing Score: Medium-High *Participation targets met except for financing.* 1. Participation PS targets 2. Financing PS objectives	Comment: Defined target for PS participation in maintenance (90%) and development works (100%). No targets for PS financing defined. • Targets for private sector participation have been realised (90% of maintenance and 100% of development works). A positive factor is the training of the private sector in order to create a strong sector. • There is scope for further privatisation of activities, such as surveying, road and bridge design, traffic surveys, site supervision and toll collection. • The corresponding reduction in staff involved in force account employed at the agencies has not been realised. • Private sector is not (yet) involved in financing of the road sub-sector.	• Further privatisation can be realised, however, needs to fit in with the road sub-sector policy. • It remains uncertain whether private sector investments can be expected. Although efforts are made by the GoG it is doubtful whether the road sub-sector provides sufficient interesting investment opportunities.	• Absence of interested private investors. • Development of appropriate legislation.
Dependence foreign technical assistance Score: Low-Medium *Dependence still strong and perhaps increasing role of FTA.* 1. Present use of FTA 2. Incentives to retain qualified staff	Comment: Present use of FTA is measurable but difficult to compare with situation prior to RSEP (no figures). Right incentives only partly quantifiable. • Dependence on FTA has not decreased and might even be increasing. Underlying factors are shortage of skilled staff, departure of skilled staff in combination with the inability to compete with the private sector (in terms of wages) and the need to train available staff. In addition, 'new' donor interest fields (e.g. environment and safety) create a demand for FTA. • GoG is facing difficulties of retaining qualified and experienced staff. The private sector is offering better wages. In the evaluation period GoG has not been able to change this situation.	• As long as experienced staff continue to leave the organisation, 'new' issues continue to be introduced, requiring specific knowledge and donors have conditions in place on FTA, GoG will remain dependent on FTA.	• Inability of GoG to narrow the salary gap between the public and private sector.

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likeliness to achieve	Main problems encountered
Environment and safety assessment Score: Low-Medium *Lack of progress to institutionalise and strengthen environment and safety aspects. Environmental and safety unit established.* 1. Awareness of environment and safety 2. Increase capacity to evaluate E+S impact	Comment: No hard targets set, assessment of awareness and increase of capacity to deal with impact measurement can be done in qualitative manner. • On aggregate the environmental objectives have not been met. The Environmental Unit was set up in 1996 and has supervised EIAs in donor funded projects and has prepared some EIAs for GoG financed projects. However, partly due to external factors it is understaffed (because of government restrictions to recruit new staff), guidelines have not yet been approved and the capacity building and training activities so far have been completely dependent on donor financing. • GoG is aware of the road safety problem, though actions are not considered very effective and there is no high sense of urgency. The National Road Safety Committee has been put on a legal basis and has received a small budget from the Road Fund, but is not yet operating effectively. The Road Safety Unit in GHA is understaffed (due to government restrictions on new staff hiring), has insufficient budget and no long-term action plan.	• In order to fully realise the environmental objectives a stronger commitment of GoG is required (e.g. recruitment of staff, funding of recurrent costs, approval of guidelines, solving question on maintenance). • The same applies to the issue of road safety, e.g. for recruitment of staff, funding of recurrent costs.	• Understaffing and lack of recurrent budget of the Environmental Unit. • Inability to approve the environmental guidelines. • Absence of a NRSC Board, budget and long term action plan. • Understaffing in agencies for road safety. • Lack of funding for other organisations involved in road safety (BRRI, DVLA).

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likeliness to achieve	Main problems encountered
Expenditure management and control Score: Low-Medium *Contract management procedures have improved; arrears problem not solved.* 1. Improving contract management 2. Settlement of arrears 3. Budgeting, disbursement and auditing	Comment: Improvements in procedures can be assessed (although not quantified). The arrears problem is quantifiable. • Improvements in the field of contract management have taken place, however the following aspects remain of concern: (1) the now abolished practice of awarding contracts without competitive bidding, (2) the time consuming payment procedure and (3) lack of clarity in contract responsibility. • Unit prices are relatively high in Ghana, which can be partly explained by contractors including premiums for payment delays in their cost estimate. • The arrears have not been settled. Arrears level changed from US$ 75 million in 1996 to an estimated US$ 69 million by May 2000. GoG has made a strong effort to scale-down ongoing contracts and has limited work to three contracts. In combination with improved contract management, training in procurement and developing legislation, GoG is making an effort to avoid future arrears. Nevertheless, GoG still faces the need to pay for existing arrears.	• Whether contract management procedures can be further improved in the future depends on many factors, such as the willingness to change to a system in which clear (contract) responsibilities and authority are defined, allowing for swift procedures. Developments, such as decentralisation, may frustrate this process as more people are likely to be involved in decision-making. • There is an understanding that the arrears need to be settled. Given the limited available funds of GoG it will hurt the road subsector programme, nevertheless, it needs to be done.	• Awarding contracts without competitive bidding, time consuming payment procedure and lack of clearness in contract responsibility. • Contracts have been awarded without full financing in place. • Variation orders have been approved frequently.

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likeliness to achieve	Main problems encountered
Road transport regulations Score: Low-Medium *Axle load control programme not realised; operations considered mediocre.* 1. Effectiveness of current legislation 2. Actions to enforce axle-load standards	Comment: Axle-load control has been defined in a specific action plan including quantifiable targets. • The implementation of the master plan is far behind on schedule. So far, only three weighbridges out of the planned 27 permanent weighbridges have been installed. In addition, only five out of the planned 21 portable weighbridges are being introduced. However, by the end of 2001 the situation should improve with 12 permanent weighbridges and 15 portable weighbridges. • The weighbridges that are installed are not functioning optimally. Underlying reasons include lack of qualified personnel and mediocre operations (e.g. opening hours, not all trucks being checked). • Lack of unloading facilities.	• A number of donors (EU, IDA, possibly JICA) have agreed on installing the remainder of the weighbridges. This certainly is a step in the right direction. To make the axle-load control successful, additional training is required and operations need to be improved. The current situation is far from perfect, however, given the importance of the issue, actions are deemed necessary.	• Not all trucks are systematically weighed. • Operation schedule is in-appropriate as many trucks wait until 6pm (station closing time) to proceed. • Because of the location of the weighbridge trucks can avoid the weighing station. • The design of the axle load survey form needs to be improved.
Non-motorised transport Score: Low-Medium *NMT not a major item in programme, limited development and promotion.* 1. Develop and promote NMT	Comment: No quantifiable objectives set. Focus on qualitative assessment of achievements in NMT. • NMT has not been a major element within RSEP. NMT elements (bicycle and pedestrian paths) are included in UTP, notably in Accra. Regarding rural development an integrated approach incorporating infrastructure, NMT and other aspects would be beneficial.	• Integrating NMT in rural development policy has been (and still is) discussed. Whether NMT will indeed be developed depends on the political support and the support of the general public. The latter could be influenced through publicity and education campaigns	• Lack of priority on executing NMT projects. • Lack of publicity on the advantages of NMT.

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likeliness to achieve	Main problems encountered
Donor co-ordination Score: Medium-High *Co-ordination in strategic and operational level in place, but few common procedures and arrangements.* 1. Consistency of donor policies 2. Present extensive co-ordination 3. Common arrangements	Comment: All objectives are defined in a qualitative way, assessment of achievements has been done accordingly. • The majority of the donor interventions can be brought in direct relation with the broadly defined GoG road sub-sector policy. • RSEP has been a framework for integrated GoG and donor actions, a positive development towards co-ordination of activities. Donor co-ordination is also realised through joint meetings and the appointment of a dedicated co-ordination unit. • Donors continue to use their own specific disbursement, accounting and management arrangements, bypassing GoG management systems and using up scarce local time and capacity.	• Ghana is considered an example case in the development of a Comprehensive Development Framework. At the same time a perfect CDF situation with full GoG ownership is not yet in place. A step by step approach is recommended. • Donors are expected to adhere to their own procedures by HQ. Each donor has developed complicated, often bureaucratic rules and regulations regarding their development assistance and it seems to be very difficult for them to adopt common procedures. A pragmatic balance needs to be found between donor procedures and workable conditions.	• Differences in donors' formats, methodologies, unit rates, accounting, monitoring and management procedures.

The effectiveness of achievement of the road sub-sector objectives, as shown in Table 7.1, is directly related to the overall effectiveness of the road sub-sector programme. The principal objective of clearing the backlog on a long-term sustainable basis can be read as 'repairing the roads and keeping them in good shape'. This objective has to a great extent been realised by the programme. Some programme elements considered very important to realising the principle objective are being met, at the same time other objectives, some of them less crucial to realising the principle objective, are only being partly met. As a result, the overall score for the programme is higher than the sum of the individual scores.

The physical achievements have resulted in a solid improvement in the road condition mix. Besides, mechanisms have been put in place to sustain the positive development. Examples are the successful restructuring of the GRF, the development of the private sector, the introduction of maintenance management systems, improvements in contract management, the belief that commitments made by GoG need to be limited to projects for which funding is secured and the improved co-ordination between GoG and the donor community. At the same time some of the programme elements have not been realised, endangering the principle objective. Examples are the failure of developing an axle-load control programme and the delay in releases of funds by GoG and donors.

7.3 Efficiency

In the previous section the focus was on whether the road programme objectives were being achieved. This section assesses how the objectives were achieved and by doing so puts emphasis on the process. Two main clusters are differentiated; financial and organisational efficiency.

Financial efficiency
The road sub-sector would benefit from a system in which a sufficient and reliable flow of resources is made available. The creation of the GRF has certainly been a contributing factor in this process. First of all the agencies were forced to provide an adequate (financial) programme on an annual basis, using in most cases supporting management systems. Then more funds for maintenance became available. At the same time, the funds have not yet represented a reliable flow of resources. Releases of funds have taken place on an ad hoc basis, mainly because the GRF bank account was temporarily 'frozen'.

Delays in payments have resulted in contractors stopping work impeding the progress of the road programme. Another potential delaying factor in paying contractors are the many parties involved in payment authorisation. An overall delaying factor in the road programme is the slow releases by GoG through the Consolidated Fund and notably by the donors. Delays in payments are most obvious in the arrears problem and have resulted in higher unit rates as contractors add premiums for payment delays. Furthermore, interest charges negatively affect the input/output ratio. Although the road programme has suffered from above-mentioned differences, it is noted that improvements have been made, e.g. in improving contract management and bringing the arrears problem to a halt.

From a life-cycle perspective it is considered efficient to follow the policy of priority spending on maintenance. The policy of focusing on a maintainable network (and gradually increasing the size of this network) can be seen as maximising output at minimal input and is therefore considered good practice.

An equitable regional distribution may potentially be difficult to justify if investments where purely based on 'sound economic principles'. So far, a mechanism to incorporate both aims is lacking, hindering an efficient implementation of the road programme.

Organisational efficiency
The downsizing process is ongoing and has resulted in leaner organisations. Yet the process is behind on schedule and especially GHA is employing a large number of junior staff. The inability to proceed with the retrenchment programme is considered inefficient. Agencies are unable to match the private sector salaries, causing staff outflow. Development of institutional capacity and human resources is jeopardised by the inability to retain staff.

Against international standards, GRF has operated efficiently with a limited staff. Expansion of staff could be considered. Outsourcing of development and maintenance work is considered good practice. However, this needs to be done in congruence with reducing number of staff involved in force account (only partly realised) and putting sound market principles in place, such as competitive bidding (improvements made, not yet optimal).

Assessing the efficiency of the training programmes is difficult without input and output figures available. On a more general level it is considered a crucial element of human resources development. Training private contractors is considered an example of best practice in developing a private sector. In-house training programmes, e.g. training young engineers at DUR for a job in the MMDUs is considered an efficient approach. International training programmes are considered relatively expensive, although the fact is realised that these programmes are an incentive to remain a GoG employee.

The decentralisation process is underway. A cautious approach is being followed. Within the road sub-sector this is considered potentially inefficient depending on the level of decentralisation. Diseconomies of scale clearly emerge if decentralisation is pursued to an administrative level as low as the current DAs.

Relatively limited efforts are being made on improving environment and safety, consequently resulting in limited results. While structures are put in place, understaffing is common practice and funding insufficient. Potential gains are possible at relatively minor cost.

The axle load control programme is failing. The current procedures with non 24-hour operation and easy possibilities to avoid the weighbridges is hardly effective. Given the damage to the road network this is considered a serious inefficiency.

The co-ordination between GoG and donors is considered an efficient process in which through regular meetings and a DCU that operates at limited resources, progress in co-ordination between activities is being achieved. Introducing common procedures for implementation, monitoring, accounting and reporting would further improve efficiency. However, it is questionable to what extent donors are willing to harmonise their specific procedures.

7.4 Sustainability

The issue of sustainability can be reviewed with either a short run or a longer run perspective. The short run view is more appropriate in the case of a project, while a programme as a whole merits a more long-term view. Because there is no doubt that if donor interventions were to be halted immediately, the road sector would be hard hit. Whereas maintenance activities can continue on basis of GRF financing and EAs programming and management capacities, financing new development would become difficult. Also attention for human resources development, safety, environmental and non-motorised transport aspects are largely dependent on donor actions.

Such a conclusion, however, does not so much disqualify the past interventions, but rather indicates the long-term nature of building capacity for road network management. Moreover, it gives too little credit to the achievements in the evaluation period. During this period the reform of MRT, the successful introduction of GRF, the reduction in EA staff and building up of private sector road maintenance and construction capacity, among others, will definitely have a lasting effect on the quality of the road network of Ghana. Even more so because there is a firm general commitment of the GoG to improving the road network, although for some

aspects more commitment is required (e.g. training, environment and safety issues, enforcement of axle load regulations).

Financial sustainability
The issue of financial sustainability has received considerable attention in the road sector interventions in the evaluation period, in particular in the design and implementation of the GRF. GRF is in principle an autonomous body and a main source of financing for routine and periodic maintenance. Its independent status has been undermined, though, by the recent blocking of its funds by the Bank of Ghana (late 1999). Such a situation seriously endangers the sustainability of road maintenance.

Despite this critical remark, the establishment of GRF is regarded as a considerable achievement. At the same time it is to be concluded that the revenues from the GRF are presently not sufficient to cover the total need of road maintenance, but the foreseen future actions will close the gap. In this respect it should be noted that the programmed increase in the fuel levy for 2000 is expected to be postponed until 2001 which will have a negative influence on the maintenance programme.

Road reconstruction and development works are highly dependent on donor financing. Arrears are a danger to financial sustainability of road reconstruction and development.

Institutional sustainability
Also in terms of institutional capacity a problem of sustainability has been signalled. The large dependence on foreign (technical) assistance for training and financing of positions (e.g. accountants, donor co-ordination unit, AMISU) means that in its present state the road sector is not able to generate sufficient funds to continue such activities. It is not expected that in the short to medium term the road sub-sector will be capable of reducing its dependence on FTA.

Technological sustainability
A positive aspect is the training and development of private enterprises for road maintenance and construction. This means that there is an endogenous capacity to carry out the necessary works independent of the granting of foreign assistance or financing. The choice of labour-based methods in (routine) maintenance is also a positive feature ensuring that such activities will be feasible and economically supportive in the future.

Environmental sustainability
The incorporation of environmental aspects in project design and selection presently depends on donor assistance significantly. A substantial effort from the GoG to strengthen this aspect and make it independent of donor assistance is clearly needed, while at the same time fully incorporating environmental objectives in all road (maintenance) projects.

7.5 Impact

Impact assessment
In evaluation terms, impact indicates the effects seen across a wider perspective than achieving the immediate objectives only, the concept of impact is a far broader one, as it includes both positive and negative consequences, whether these are foreseen and

expected, or not.. In principle it includes economic, social, political, technical, and environmental effects on a local, regional, or national level. In this evaluation, as required in the ToR, the study on impact has been concentrated on the effects of the road programme on wider economic benefits, poverty alleviation and gender aspects.

The problem with assessing impact is that the relationship between road activities and poverty alleviation is not a direct one. The relationship is in general indirect through variables such as (i) reduced vehicle operating costs, (ii) improved agricultural product marketing, (iii) increase in social mobility and (iv) access to water, hospitals and schools. Assessing the impact on gender aspects, is even more difficult. Poverty alleviation will in principle also benefit women, however, family structures and other factors play a role in gender impact. Because gender aspects need a much more in-depth study, not possible within this evaluation, the impact on gender aspects have been combined together with impacts on poverty alleviation and rural development.

This section does not only give an assessment of the impact but also deals with the attention given to impact during the programme process: policy prioritisation and selection of projects to be carried out.

Policies of GoG and donors and impact
The aim of GoG, described in the policy document Vision 2020, is to become a middle-income country by 2020 (see also Chapter 3). It is clear that to reach this objective the widespread poverty in Ghana needs to be addressed. A considerable part of the population still lives below the poverty line.

The SAR for the HSIP mentions that although the programme does not include specific targeted interventions to reduce poverty, it will nevertheless have a significant impact on poverty alleviation, in particular for the rural poor, improve access to health and education, and create employment in the private sector. Not all contributing donors mention poverty alleviation or rural development as an explicit objective of the road programme, however, most donors acknowledge the relationship between road improvement and poverty alleviation [27].

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Project selection process and impact
GoG funded maintenance projects are selected on the basis of technical criteria, but also on regional-political criteria. The selection criteria for reconstruction and development works are less clear and there is no mechanism in place, which includes poverty and regional aspects.

The projects financed by donors, both rehabilitation and reconstruction and development works, are in general selected on the basis of a cost-benefit analysis. This criterion is a minimum internal rate of return (IRR) of 15 percent. Due to the calculation method used, this criterion can often not be met especially by projects involving low-traffic roads such as feeder and trunk roads in more thinly populated and often poor areas. DFID is most outspoken in financing only road projects in the poorer areas and selects projects on the basis of their relevance for poverty alleviation (see Section 4.2).

27) The Evaluation Team has been unable to incorporate the results of a study on socio-economic impact in Ghana that apperantly has been produced. The report was not available.

The use of the IRR as key criterion can be explained by the fact that most donor contributions consist of (mainly concessional) loans, which ultimately have to be paid back to the lender. This is probably most relevant for the donor banks involved. The donor agencies in general pay more attention to poverty and regional aspects.

Wider economic benefits
In several appraisal documents and feasibility studies, the VOC is used as an indicator for measurement of wider economic benefits. Reduced VOC is supposed to contribute to the social and economic development of Ghana. However, a systematic assessment of the overall savings achieved in VOC, as a result of an improvement in the road condition mix during the evaluation period, is not available.

Within the framework of the NFRRMP a series of 'socio-economic impact monitoring and evaluation studies' on the impact of feeder road improvements have been carried out. The results are summarised by the World Bank (1999) as follows:

- transport services are significantly more frequent and cheaper in the corridors where feeder roads have been rehabilitated;
- farmers on improved corridors reduced their use of intermediaries to sell their harvest and received better prices for their crops;
- shopkeepers on improved corridors say their costs and sales have improved since the road was rehabilitated;
- summoning an emergency vehicle to take an ill person to a health facility is easier and cheaper where the roads were improved.

Poverty alleviation and gender aspects
Available socio-economic studies indicate that feeder road improvements have a positive impact on rural poverty, which is an important objective of Vision 2020 and hence supports assistance to feeder road improvements [28]. Road improvement in itself is, however, not sufficient to maximise socio-economic impact. Complementary factors include agricultural credit, finance for transport investments, improved farm technology, processing and storage facilities, as well as the long-term systematic maintenance of feeder roads (and not irregular maintenance). This underlines the fact that policies for rural/regional development and poverty alleviation need a co-ordinated planning by all key involved parties (e.g. Ministry of Agriculture, Ministry of Local Government, MRT, etc.). So far this planning process has not been formalised and road planning and prioritisation take these aspects insufficiently into consideration.

However, the available studies do not allow differentiation between regions with different poverty profiles and this thus highlights the need for a more systematic approach to data collection and impact evaluation. For example, Vision 2020 states that investments should focus on deprived areas such as the northern regions and the Afram plains, but the impact studies do not give an answer to the question whether feeder road improvements in these areas have a greater impact on poverty alleviation than feeder road improvements in other parts of the country.

The results of the available studies in Ghana compare quite positively to the general conclusions drawn from a wide range of evaluation studies carried out in the Sub-

28) Impact on poverty and gender is not restricted to feeder roads but can relate to trunk roads as well.

Saharan Africa area during the eighties and early nineties. These studies suggest that many ex-ante feasibility studies of feeder road improvements were too optimistic in terms of additional farm output generated by road rehabilitation. This further underlines the need for more data collection and impact studies.

The impact of transport infrastructure on women can be profound. Women play a crucial role in transport activities; e.g. the share of female participation in domestic transport activities is estimated at 70 percent [29]. Reducing the transport burden on women would create more time and energy to be spent on other activities.

Main conclusions on impact

Poverty alleviation is an important objective of the GoG and is naturally supported by the donors. However, the project selection process by donors is mainly based on cost-benefit aspects and less on poverty alleviation and regional development aspects. This could imply a bias to select projects in the more densely populated, and often richer, areas. Unfortunately, no studies are available which differentiate among regions with different poverty profiles. Therefore, no answer can be given whether feeder road improvements in different regions have different impacts on poverty alleviation and rural development.

Available impact studies generally indicated that feeder road improvements have a positive impact on rural poverty. The impact, however, is indirect and many other factors play a role. Road improvement in itself is not sufficient to maximise socio-economic impact and should be supported by other measures such as agricultural credits, availability and finance of vehicles, as well as the long-term maintenance of the roads. Therefore, a more integrated and co-ordinated rural development programme could increase the impact on rural poverty alleviation.

29) According to C. Malmberg Calvo, Case Study on the Role of Women in Rural Transport: Access of Women to Domestic Facilities, 1994.

8. Lessons Learned

This evaluation can be characterised as innovative and groundbreaking in some respects. The GoG and all donors active in the Ghanaian road sub-sector have joined forces and called for a joint evaluation of their 1996-2000 performance. This is a clear break from individual, often project-based evaluations and reflects a tendency towards a more co-ordinated approach. The co-ordination can also be seen in other fields, such as the Donor Co-ordination Unit, the annual Donor Conferences and the preparation of the new Road Sector Development Programme (RSDP).

One of the lessons learned is that the completion of the evaluation provides an opportunity to prepare for the monitoring and evaluation of the progress and performance of RSDP. To facilitate this process, RSDP objectives should be set as clearly as possible, where possible with clear and measurable targets. By doing so a set of performance indicators can be developed allowing for monitoring and evaluation of the programme. The performance indicators can also be used in baseline studies serving as reference points for future performance.

As monitoring and evaluation are considered to become increasingly important in time, the GoG could, in co-ordination with the donors, consider initiating the development of a self-monitoring system. This would facilitate the policy-making procedure and would prepare the GoG for future evaluations.

Below an overview is presented of some lessons learned per objective as specified in the PLF96.

Institutional Capacity and Human Resource Development

The GoG should proceed with the reorganisation of the road sub-sector institutions. The agencies should be further brought down in size and focus on core activities. A retrenchment programme for staff previously involved in force account needs to be put in place to allow organisations to downsize. Although it is realised that raising salaries is not directly within the scope of MRT, but is dependent on governmental guidelines, efforts should be made to bring salaries more in line with salaries paid in the private sector, in order to avoid outflow of qualified staff.

The need for training remains high, especially given the current demand for qualified staff. Donor assistance will remain important in this respect. A gradual transfer of training capacity and funding from the donor community to the GoG should be realised on the long run. Overseas training is far more expensive compared to domestic training programmes. A large share of the donor funds available for training is spent on overseas training. Domestic training programmes should be improved and given priority over overseas training.

The cautious approach followed in the decentralisation process within the road sub-sector is considered good practice. A sector-wide debate on the optimal level of decentralisation is recommended, keeping in mind potential diseconomies of scale.

Clearing the Backlog
The road sub-sector programme is considered quite ambitious and has only been partly realised. In developing a new programme it is recommended taking into account (1) the developing needs of the road sub-sector, (2) the funding capacity of GoG and donors and (3) the absorption capacity of MRT, the agencies and other organisations involved in the sector. The fact that GoG is still faced with arrears payments and has limited funding capacity other than the GRF, implies that the ambition of realising a 70-20-10 condition mix in 2005 may be overoptimistic and that the ambition level needs to be consequently moderated. The policy of giving priority to maintenance should be respected.

Investment Priorities
As investments in the road sub-sector are based on different criteria, MRT could play a facilitating role in developing a common approach, e.g. through defining a framework of standards, including (1) unit cost of construction/rehabilitation, (2) VOCs, (3) value of time, (4) opportunity cost of capital and (5) environmental, safety and additional socio-economic impact.

Balancing equitable regional distribution, including investments in low-volume traffic roads and investments based on 'sound economic principles' needs to be further focused on. Both issues could possibly be combined through a multi-criteria approach.

Road standards should be harmonised. Given road conditions and traffic, the combination of these standards with typical unit prices for maintenance provides a method for determining annual budgets in a systematic way.

Cost Recovery
The GRF should continue to provide a financial basis for maintenance and rehabilitation works. Efforts should be made to further safeguard timely releases of funds. If future releases remain problematic a transfer of the funds to an account at a commercial bank should be considered.

Furthermore, revenues should be increased according to schedule with emphasis on raising fuel levies. With the increasing financial basis of the GRF a debate should be initiated on future allocation of GRF funds. The (future) benefits of the GRF should be communicated to the public to create support for the fund and for the principle of road user charging.

Private Sector Contracting and Financing
The private sector has come a long way and currently a large share of the road works is done by the private sector. The GoG should continue to facilitate the development of the private sector in order to create a mature private sector that is able to compete on a domestic and international level.

Private sector financing is still marginal. If GoG wants to pursue in this field it is necessary to develop an enabling environment, e.g. through developing capacity to deal with procurement and the necessary legislation.

Foreign Technical Assistance
Instead of a reduction in the amount of FTA, a consolidation or even an increase in FTA can be noticed during the course of the evaluation period. Reasons are the shortage

of skilled engineering and accounting staff, the need for further training of employees and the departure of engineers to the private sector. Also relatively new aspects such as safety and environment, as well as issues such as poverty alleviation and gender issues, increases the need for FTA.

FTA should clearly provide an added value. Some of the FTA activities can be done through local experts. For this purpose it could be considered to establish a database of local experts. In all instances but especially in the 'new' fields emphasis should be on transfer of knowledge. Therefore it is required to appoint counterpart staff that can take over tasks and responsibilities once FTA terminates. It should be considered to monitor and evaluate the process of FTA related knowledge transfer.

Environmental and Safety Assessment
Environment and safety should receive greater priority from GoG. Especially in road safety, limited investment could well result in considerable gains. Environmental impact assessment needs to be applied for all projects and environmental aspects should be monitored during implementation.

Expenditure Management and Control
Disbursement procedures to contractors should be streamlined, amongst others through shortening payment approval procedures. At the same time, donor releases should follow programmed levels.

In order to get more grip on disbursements, all donors could provide MRT periodic status reports on grants/loans expenditures. At the same time quarterly reviews of implementation status by MRT, EAs and donors will facilitate procurement and disbursement.

With the phasing out of AMISU an option could be that each agency has staff trained to handle procurement procedures and guidelines of the various donors. The responsible persons can then be fully dedicated to the management of projects and programmes as has been successfully done at the Department of Urban Roads.

Road Transport Regulations
The axle load control programme should receive more priority. Putting great effort in improving road conditions is ineffective if at the same time damage caused through overloading is not tackled properly.

Non-Motorised Transport
If NMT promotion is on the agenda, strong efforts should be made in presenting the advantages of NMT to the general public. Also baseline studies should be considered in order to measure the impact of NMT, as is done within the Urban Transport Project.

Donor Co-ordination
Co-operation between GoG and donors should be further pursued. Depending on donor willingness, procedures for implementation, monitoring, accounting and reporting should be harmonised. GoG planning and programming capacity needs to be further developed to move into a situation in which GoG can take programme ownership according to the Comprehensive Development Framework principles.

Appendix

Policy Letter February 1996

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RE: Ghana's Highway Sector Policies and Objectives

This letter summarises the various policy measures which the Government will pursue to support implementation of its road sector strategy for 1995-2000. The letter deals first with the Government's medium-term economic and social development policies, second, with the background to the road sector; third with the Government's objectives for the road sector; and finally, with the various road sector policy issues, which the Government intends to tackle during the period up to 2000.

Medium-Term Economic and Social Development Policies

These policies have been designed to support the Government's long-term vision which hopes to see Ghana transformed into a middle-income country by 2020. The medium-term programme supporting this vision, and covering the five years 1996-2000, aims to consolidate the gains so far secured over the past decade and to lay strong foundations for economic growth and development in the subsequent two decades. During the past decade, investment in economic infrastructure – energy, transport and communications – has dominated the Public Investment Programme (PIP). However, because of the excessive rot of the 1960s and 1970s, much still remains to be done. The current condition of infrastructure facilities and services still remain poor.

One of the cornerstones of the medium term strategy is to promote more rapid rural development. Among other things, this will require provision of better transport services in rural areas, together with provision of well maintained roads and tracks. Sustainable economic growth at the national level will depend on creating an enabling environment which encourages private sector initiative, improves transport and communications facilities, and reduces Ghana's dependence on external aid, whilst maximising the effectiveness of the aid which is currently contributing to the country's development objectives.

In the above context, transport and communications – including roads – will continue to receive a high allocation of development expenditures, although the proportion will be slightly lower than in previous years.

Background to the Road Sector

Road is the dominant form of inland transport, carrying about 94 percent of freight and 97 of passenger traffic. The balance of the traffic is mainly handled by the railways. The private sector dominates the road transport industry and carries an estimated 85-90 percent of goods and passenger traffic, while the three state-owned parastatal companies carry the remaining 10-15 percent.

However, in spite of its importance, the road sector is plagued by a serious lack of funds for maintenance, road sector institutions which suffer from important weakness, and a large backlog of rehabilitation work. In spite of previous efforts to catch up, 31 percent of trunk roads are still classified as being in poor condition (i.e. require rehabilitation or reconstruction), while 60 percent of rural roads are still in poor condition. Much work needs to be done to bring this down to the target level of less than 10 percent in poor condition set for 2005.

Objectives for the Road Sector

The Government's principal objective is to clear the large backlog of maintenance on a sustainable long-term basis. To that end, it has adopted the following objectives for the road sector: (I) strengthening the organisational structure and institutional capacity of the various road agencies; (ii) clearing the backlog of rehabilitation and periodic maintenance work; (iii) basing road sector investment decisions on sound economic principles, and giving highest priority to routine and periodic maintenance; (iv) improving cost recovery to ensure that maintenance can be funded on a sustainable basis; (v) promoting greater private sector involvement in both execution of works and financing of transport infrastructure; (vi) reducing dependence on foreign technical assistance and increasing training and performance of local staff; (vii) improving capacity to evaluate the environmental impact of road schemes and design mitigation measures, (viii) regaining sector-wide discipline in expenditure management and control, (ix) streamlining transport regulations, enforcing of axleweight regulations, enhancing road safety, and improving traffic management; (x) giving priority to development of non-motorised transport and improving facilities for their use and (xi) strengthening donor co-ordination, and simplifying and improving procurement, monitoring and reporting procedures for donor supported and Government of Ghana programs.

Proposed Policy Actions

Institutional Capacity and Human Resource Development. In line with its objectives for the road sector, Government will (I) strengthen the institutional capacity of the three road agencies through staff training (both locally and abroad); (ii) develop the local construction and consulting industry, also through training (in both technical and business management subjects) and (iii) strengthen the three road agencies by strengthening financial discipline, increasing transparency and managerial accountability, and making Ghana Highway Authority (GHA) more autonomous. As part of this policy, Government will reorganise the Ministry of Roads and Highways (MRH), GHA, Department of Feeder Roads (DFR) and Department of Urban Roads (DUR) to enhance their efficiency and effectiveness. In the case of DFR and DUR, this

would be carried out in line with the Government's stated policy of decentralisation. In the process, Government will also restructure the Road Fund and strengthen arrangements for disbursement and auditing. Government will also reinstate the autonomy and Board of the Ghana Highway Authority – and take other steps to ensure financial discipline – to emphasise the role of the Authority as a commercial, customer-oriented agency. These reforms will be written into a Roads & Highways Act, based on the current Ghana Highway Authority Decree, and other relevant legislation.

Clearing the Backlog. Since the road sector provides broadbased support to the economic development of Ghana – which emphasises accelerated growth of agriculture, tourism, trade and industry – the Government's plan is to clear the backlog of maintenance and, by introducing sustainable maintenance policies, to stabilise the condition of the road network. The target for overall road conditions by 2005 is to have at lest 70 percent of the network in good condition, some 20 percent in fair condition and no more than 10 percent in poor condition. In that connection, Government has developed a medium term expenditure programme for 1995-2000 amounting to US$ 2.3 billion. This is an ambitious programme and would require an enormous increase in the level of donor financing compared to current levels. However, under the proposed Highway Sector Investment Project, Government has adopted a downsized programme amounting to US$ 1. 56 billion in light , of the resources likely to be available (both locally and from external donors), and bearing in mind the medium term implementation capacity of the various road sector institutions. Of this amount, approximately US$ 600 million (or 39 percent) would be for routine and periodic maintenance, US $220 million (or 14 percent) for rehabilitation (including bridges), US$ 640 million (or 41 percent) for reconstruction and development and US$ 97 million (or 6 percent) for administration. Government will contribute US$890 million equivalent from its own resources including the Road Fund and the balance, US$ 670 million, is expected to be financed from external sources.

Investment Priorities. To maximise net benefits to society, Government will base investment decisions on sound economic principles, while at the same time giving due weight to an equitable regional distribution of road access. To protect the substantial investment already made in road infrastructure, highest priority will be given to routine and periodic maintenance, followed by rehabilitation, reconstruction, upgrading and construction of new roads (mostly providing missing links in the existing network).

Cost Recovery. The Government's economic recovery programme emphasises the need to return to a system of market prices and to aim for full cost recovery for all economic services. In the road sector, the past pattern has been to finance maintenance and rehabilitation from general revenues. Since 1985, some of the revenues, were paid into a Road Fund. To meet the high financial requirements of the road stabilisation program, Government will gradually increase road user charges to ensure that all routine and periodic maintenance costs can be financed from the Road Fund. In particular, Government will progressively increase the fuel levy and introduce a new heavy vehicle license fee to ensure that heavy vehicles pay in full for the damage thy do to the road pavement. In urban areas, Government is already examining the possibility of introducing parking charges to help finance urban road schemes. For routine and period maintenance, the Road Fund will need to mobilise at least US$ 45 million in 1996, US$ 71 Million in 1997, US$ 99 million, in 1998, US$ 116 million in 1999 and US$ 126 million in 2000. This will be achieved by rationalising and increasing the Road Fund levy on fuel annually to achieve these stated targets. We expect this outlay of Road

Fund will lead to an increase from the present level of 22 percent to 83 percent in 2000. To achieve the 1996 target, it is estimated that the Road Fund fuel levy will have to increase from the present average level of Cedis 16 (US Cents 1.5) per litre to Cedis 60 (US Cents 4.0) per litre. This increase could be achieved without necessarily increasing the pump price of fuel but resorting to an internal redistribution of the components of the pump price adjustment period (to full cost recovery), the balance of funds required for maintenance will come from external financing and from the Government's consolidated revenues.

Private Sector Contracting. To ensure cost-effective and efficient implementation of its programs in the road sector, Government intends to have an increasing share of civil works carried out by the private sector (domestic and international contractors). In this regard, Government will, by 1999, undertake all major roadwork and 90 percent of all road maintenance works through private sector contractors, rather than through force account. Government will accordingly reduce road agency staff in line with their reduced work load.

Private Sector Financing. Government recognises that the shortage of public revenues limits its ability to meet the road sector's requirements. In this regard, it intends to bring the private sector to invest in, and operate, selected roads under concession agreements. The proposed Roads & Highways Act will provide the enabling legislation to permit Government to do this.

Dependency on Foreign Technical Assistance. Ghana has increasingly depended on foreign technical assistance to carry out its accelerated development programs. The gradual transfer of work to Ghanaian nationals anticipated under these programs, together with associated transfer of technology, has not been satisfactory. Government's policy is therefore to enhance the sustainability of its development projects by internalising as much of the preparation, implementation, operation and management of its development projects by minimising long term foreign technical assistance and creating the right incentives to retain qualified and experienced local personnel.

Environmental Assessment. The Government is mindful of the need to take the potential environmental impacts of road projects into account, and to use this information to redesign in consultation with the Ministry of Environment. First, Government will carefully monitor design and implementation of selected road projects which might have significant environmental impacts. Second, based on this hands-on experience and available documentation on the environmental impacts of road considerations to be taken into account in design and courses based on the guideline. All concerned staff in the road agencies will be exposed to the training courses, and consultants will also be invited to participate.

Control of Expenditure. A number of issues continue to persist in the area of financial management and contract administration. There is a substantial imbalance between approved budgets and the value of work done in the road sector. New projects are initiated each year, even though a large number of projects in the portfolio remain uncompleted. Outstanding payments to contractors from the previous year take up a high proportion of the annual approved budget. Finally, issuance of variation orders and price escalation due to delayed completion times result in substantial cost increases compared to original contract sums. To deal with these issues, Government will reach agreement with contractors on the settlement of arrears that have accrued up to

December 1995. In the medium term the following additional actions will be taken: (I) clean up the existing portfolio by giving high priority, after maintenance, to allocation of resources to projects that are nearly complete and where necessary and feasible, suspending or terminating enviable contract; (ii) minimise award of new contracts as long as there are outstanding payments to contractors on ongoing projects and unless adequate design and engineering details have been prepared in advance and adequate provision of funds made for the duration of the contract; (iii) limit the cumulative value of variation orders issued on any contract to 25 percent of the original contract sum; (iv) enhance the capability of the road agencies in planning, programming and budgeting for mullet-year contracting; and (v) develop and install appropriate accounting and management information systems for monitoring the performance of each contract.

Road Transport Regulations. The Government is in favour of encouraging private sector initiative, reorganising public sector organisations to make them more efficient and effective, and privatising parastatals which do not need to remain in public hands. This policy will continue to be applied to the transport sector, where passenger and freight transport has been deregulated, and the private sector encouraged to provide an increasing share of capacity. There are two areas where further improvements are planned: axle-weight controls and road safety. First, Government intends, within two years, to expand weight controls on all major roads by installing weigh bridges at key road locations, ports, production centres, key border crossing, and cocoa, wood and log collection centres. The Government also intends to explore the feasibility of having weigh bridges operated under contract by a private company. Second, the institutional arrangements for dealing with road safety will be strengthened. Government will review the function and composition of the National Roads safety Committee, put the Committee on a firm legislative basis by including it in the proposed Road & Highways Act, and will provide modest funds to the Committee through the restructured Road Fund.

Non-Motorised Transport. The Government is committed to continuing its support for non-motorised transport initiated under on-going Bank-financed projects. This will include developing and promoting non-motorised transport, as well as providing better facilities in urban areas for safe and effective us of non-motorised transport.

Donor Co-ordination. Government recognises the value of having a co-ordinated road sector programme supported by all donors. To that end, Government will organise a road sector donors conference each. Year to streamline dialogue with donors and report on progress on implementation of, the road sector program, and projected plans for subsequent years. In the long term, Government intends to adopt common arrangements for implementing, monitoring, accounting, and reporting on all donor assisted and Government of Ghana projects.

Yours sincerely,

Kwame Peprah
Minister of Finance


BURKINA FASO
Lawra
Navrongo
UPPER EAST
UPPER WEST
Wa
NORTHERN
Dahoya
Yendi
Damnnga
Tamale
Bole
TOGO
COTE D'IVOIRE
Salaga
Kintampo
BRONG-AHAFO
Lake Volta
ASHANTI
Sunyani
Kumasi
Ho
GREATER ACCRA
EASTERN
Oda
Enchi
WESTERN
Tema
CENTRAL
Accra
Tarkwa
Winneba
Sekondi
Cape Coast
Axim
Takoradi