

Evaluation

Ghana

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

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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.

Mr. J.L. Lamptey
Director (Policy, Planning, M&E/roads)
Ministry of Roads and Transport
Accra, Ghana

Mr. Lars Elle
Evaluation Secretariat
Ministry of Foreign Affairs
Copenhagen, Denmark

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- I. Glossary
- II. References
- III. Itinerary
- IV. Policy-donor focus
- V. Institutional focus
- VI. Technical focus
- VII. Economic-financial focus
- VIII. Contract management focus
- IX. Others focus

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
BRR	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 für 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 für Wiederaufbau
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 Technical Assistance (FTA)	Dependence on FTA still strong and perhaps increasing role of FTA.	Low-Medium
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 GRE, 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. through 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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.

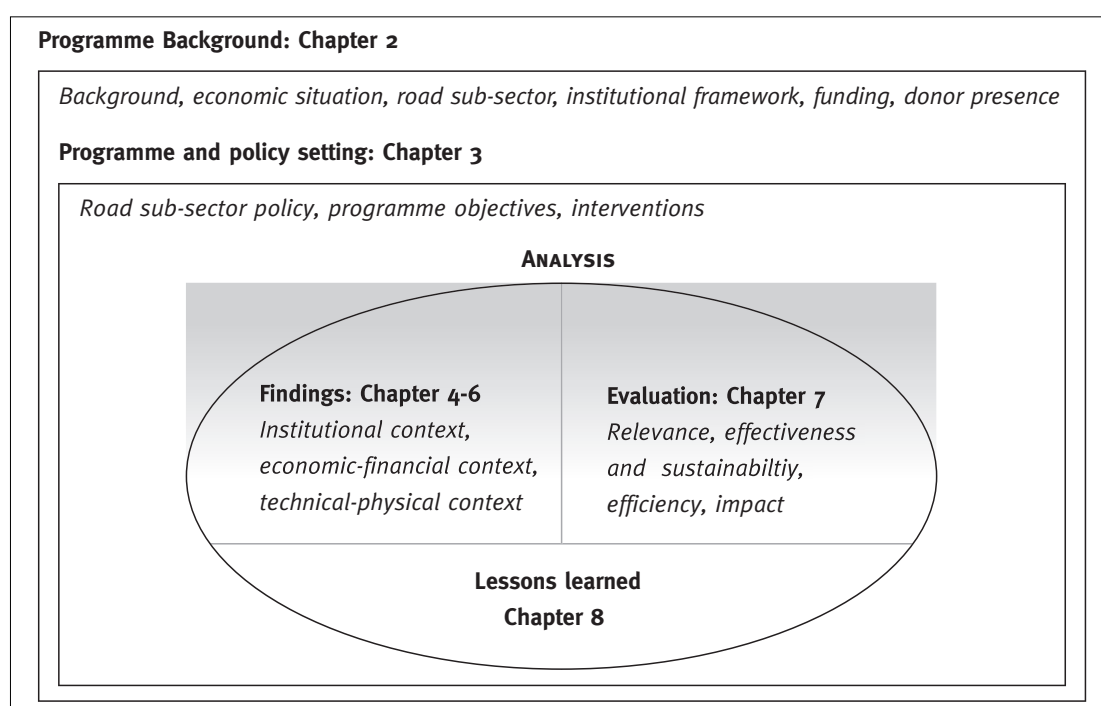
1.4 Contents of the report

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.

2. BACKGROUND

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 Intelligence 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	9,805 (42%)	For all (maintainable) feeder roads:	N.A.
Non-maintainable	13,800 (58%)	Good: 52 Fair: 44 Poor: 4	
Urban roads			
Paved	1,603 (56%)	For all urban roads: Good: 31	N.A.
Unpaved	1,282 (44%)	Fair: 28 Poor: 41	

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.

2. BACKGROUND

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 of 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	<ul style="list-style-type: none"> • Trunk Road Rehabilitation, Re-gravelling, Resealing, Resurfacing • Institutional Support
Tamale-Paga (TRP-2)	JBIC (co-finance)	¥ 8,439m	1995-1998	<ul style="list-style-type: none"> • Road Rehabilitation (185.2 km)
Bridge Development Programme (TRP-2)	BADEA (co-finance)	US\$ 8.75m	1995-1998	<ul style="list-style-type: none"> • Bridge Works (Rehabilitation 6 Nos.)
Ejura-Gyato Zongo	Dutch mixed credit	NLG 35.6m	1996-1997	<ul style="list-style-type: none"> • Rehabilitation (45km)
Tema-Akosombo	KfW	DM 50.0m	1994-1998	<ul style="list-style-type: none"> • Road Rehabilitation (75km)
Second Transport Infrastructure Programme (TRP-2)	EU	Euro 54.0m	1997-2001	<ul style="list-style-type: none"> • Road Construction (117km) • Road Maintenance • Institutional Support • Technical Assistance
Highway Sector Investment Credit (HISC)	IDA Credit GH 2858	US\$ 100.0m	1997-2001	<ul style="list-style-type: none"> • Road Rehabilitation & Maintenance • Bridge Works • Institutional Support • Technical Assistance
Highway Sector Investment Programme (HSIP)	KfW	DM 50.0m	1997-2001	<ul style="list-style-type: none"> • Road Rehabilitation & Maintenance (405km) • Institutional Support • Technical Assistance

3. PROGRAMME AND POLICY SETTING

Programme	Donor	Loan/grant	Period	Main component
Highway Sector Investment Programme (HSIP)	JBIC	¥ 2,544m	1997-2001	<ul style="list-style-type: none"> • Kumasi-Anwiankwanta (25km)
Lower Volta Bridge	KfW	DM 25.6m	1995-1998	<ul style="list-style-type: none"> • 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 (NFRMP)	IDA Japan OPEC Danida	SDR 40.5m ¢221.4m US\$5.0m DKK 117.3m	1992-1998	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	US\$ 2.40m	1991-1998	<ul style="list-style-type: none"> • Road and transport system management • Arterial road rehabilitation • Engineering studies • Development of drainage master plan • Institutional support • Kekutia Redevelopment Project
	IDA	26.24m		
	Nordic Fund	US\$ 4.40m		
	OPEC	US\$ 3.33m		
Urban Transport Project (UTP)	IDA	US\$ 73.58m	1994-1998	<ul style="list-style-type: none"> • Road rehabilitation and traffic management • Access roads to depressed areas • Transport terminals development • Non-motorised transport (pilot) • Technical assistance
	Japanese grant	US\$ 6.84m		
	OPEC	US\$ 11.14m		
Interchange Development	Coface	US\$ 22.0m	1994-2000	<ul style="list-style-type: none"> • Kanda overpass • Sankara interchange
		US\$ 22.1m		

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 Sub-sector 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 DAs⁸⁾ 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 management⁹⁾. 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 comparison, 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 on 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 2001¹⁰⁾ 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

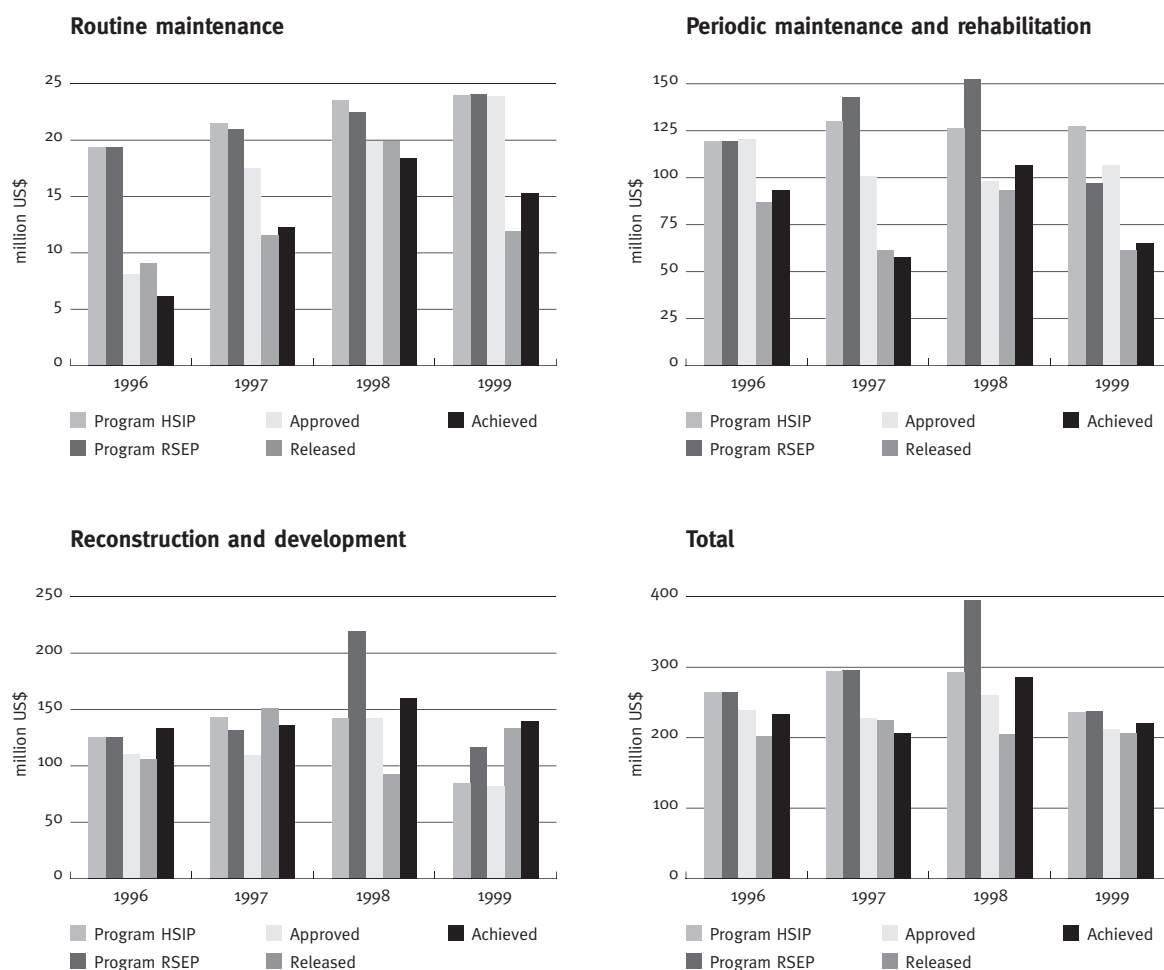
In this chapter an overview is presented of issues that are strongly related to financial flows in the road sub-sector, together forming the basis for the economic-financial context. The four issues that are covered in this chapter are:

- 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⁾*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.

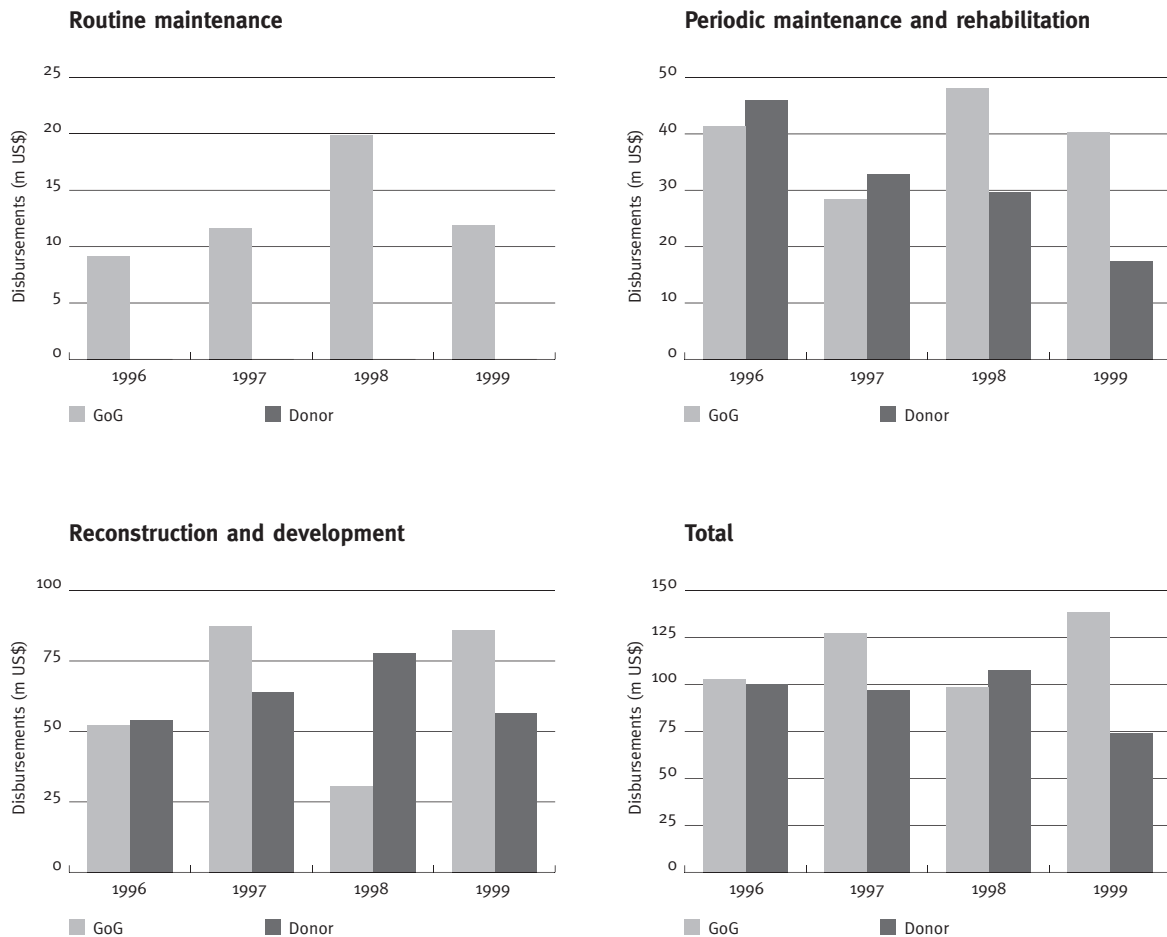
Maintenance releases and expenditures increased in 1998 as a result of the functioning of the Ghana Road Fund (GRF). However, 1999 shows a fallback caused by the fact that releases to the GRF were frozen in the 4th quarter. In the first half of 2000 a strong effort has been made to disburse the unreleased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



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

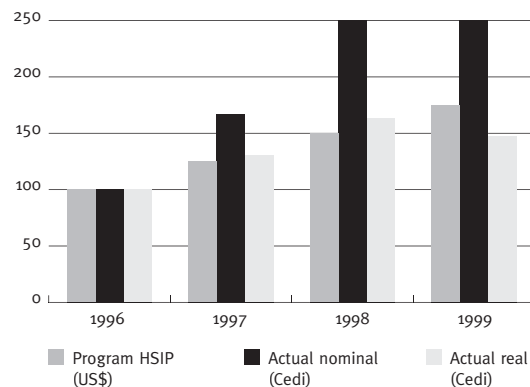
Source: GRF, 2000

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.

5. FINDINGS: ECONOMIC-FINANCIAL CONTEXT

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
<i>Sub total</i>	<i>40.7</i>	<i>76.2</i>	<i>179.6</i>	<i>156.6</i>
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 2000¹⁵⁾ 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/afri/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.

6. FINDINGS: TECHNICAL-PHYSICAL CONTEXT

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

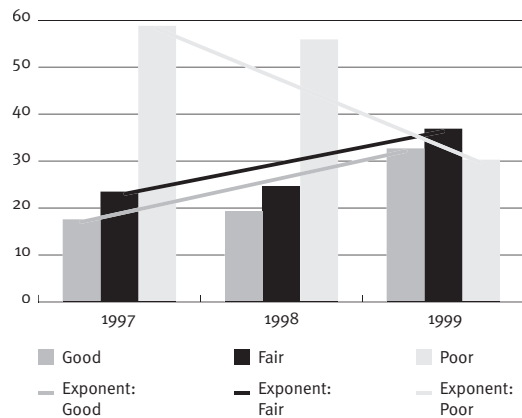
Source: MRT Review reports Annual Donor Conference (1997-1999)

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.

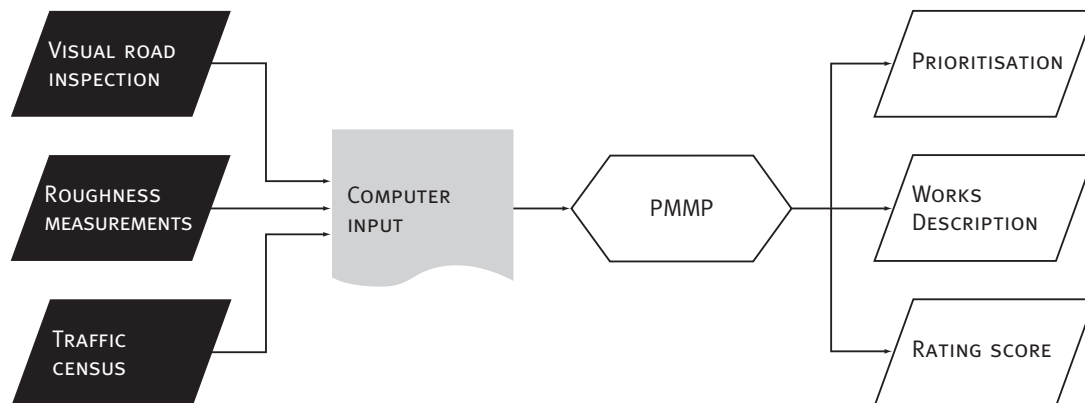
6.3 Technical procedures

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-dependes 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 trucks 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	Likelihood to achieve	Main problems encountered
<p><i>Institutional Capacity and Human Resource Management (HRM)</i></p> <p>Score: Medium</p> <p><i>Institutional structures are in place, implementation (partly) behind schedule.</i></p> <p><i>Human Resource development dependent on donors.</i></p>	<p>Comment: Objectives are not quantified and no hard targets are set. A qualitative assessment is made of the realisation of the objectives.</p> <ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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 decentralisation 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.
<ol style="list-style-type: none"> 1. Strengthen institutional capacity and HRM 2. Decentralisation DFR and DUR 3. Changes after inauguration of GHA Board 			

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.

7. EVALUATION

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likelihood to achieve	Main problems encountered
<p><i>Clearing the backlog</i></p> <p>Score: Medium</p> <p><i>Programme objectives not fully achieved but condition mix improved considerably.</i></p> <p>1. Physical achievement</p> <p>2. Road condition mix: compare with targets</p> <p>3. Funding vs. programmed expenditures</p>	<p>Comment: Quantified 70-20-10 target for 2005. Physical and financial achievement also quantified.</p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	Likelihood to achieve	Main problems encountered
<p><i>Investment priorities</i></p> <p>Score: Medium</p> <p><i>Increasing role for economic principles in project selection; priority to spending on maintenance not fully achieved.</i></p> <p>1. Sound economic principles</p> <p>2. Giving priority to maintenance</p>	<p>Comment: Priority spending is quantifiable, sound economic principles are not.</p> <ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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.)

7. EVALUATION

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likeliness to achieve	Main problems encountered
<p><i>Cost recovery</i></p> <p>Score: High</p> <p><i>GRF has successfully developed in main provider of maintenance funds.</i></p> <p>1. Road Fund performance</p> <p>2. Balance maintenance funds</p>	<p>Comment: Objective not quantified, however partly quantifiable.</p> <ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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	Likelihood to achieve	Main problems encountered
<p><i>Private sector participation and financing</i></p> <p>Score: Medium-High <i>Participation targets met except for financing.</i></p> <p>1. Participation PS targets 2. Financing PS objectives</p>	<p>Comment: Defined target for PS participation in maintenance (90%) and development works (100%). No targets for PS financing defined.</p> <ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Absence of interested private investors. • Development of appropriate legislation.
<p><i>Dependence foreign technical assistance</i></p> <p>Score: Low-Medium <i>Dependence still strong and perhaps increasing role of FTA.</i></p> <p>1. Present use of FTA 2. Incentives to retain qualified staff</p>	<p>Comment: Present use of FTA is measurable but difficult to compare with situation prior to RSEP (no figures). Right incentives only partly quantifiable.</p> <ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Inability of GoG to narrow the salary gap between the public and private sector.

7. EVALUATION

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likelihood to achieve	Main problems encountered
<p><i>Environment and safety assessment</i></p> <p>Score: Low-Medium</p> <p><i>Lack of progress to institutionalise and strengthen environment and safety aspects.</i></p> <p><i>Environmental and safety unit established.</i></p> <p>1. Awareness of environment and safety</p> <p>2. Increase capacity to evaluate E+S impact</p>	<p>Comment: No hard targets set, assessment of awareness and increase of capacity to deal with impact measurement can be done in qualitative manner.</p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	Likelihood to achieve	Main problems encountered
<p><i>Expenditure management and control</i></p> <p>Score: Low-Medium</p> <p><i>Contract management procedures have improved; arrears problem not solved.</i></p> <p>1. Improving contract management 2. Settlement of arrears 3. Budgeting, disbursement and auditing</p>	<p>Comment: Improvements in procedures can be assessed (although not quantified). The arrears problem is quantifiable.</p> <ul style="list-style-type: none"> 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. <p>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.</p>	<ul style="list-style-type: none"> 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 sub-sector programme, nevertheless, it needs to be done. 	<ul style="list-style-type: none"> 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.

7. EVALUATION

Table 7.1 Effectiveness of PLF96 objectives

Objective	Description of achievement	Likelihood to achieve	Main problems encountered
<p><i>Road transport regulations</i></p> <p>Score: Low-Medium</p> <p><i>Axle load control programme not realised; operations considered mediocre.</i></p> <p>1. Effectiveness of current legislation</p> <p>2. Actions to enforce axle-load standards</p>	<p>Comment: Axle-load control has been defined in a specific action plan including quantifiable targets.</p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Not all trucks are systematically weighed. Operation schedule is inappropriate 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.
<p><i>Non-motorised transport</i></p> <p>Score: Low-Medium</p> <p><i>NMT not a major item in programme, limited development and promotion.</i></p> <p>1. Develop and promote NMT</p>	<p>Comment: No quantifiable objectives set. Focus on qualitative assessment of achievements in NMT.</p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	Likelihood to achieve	Main problems encountered
<p><i>Donor co-ordination</i></p> <p>Score: Medium-High</p> <p><i>Co-ordination in strategic and operational level in place, but few common procedures and arrangements.</i></p> <p>1. Consistency of donor policies</p> <p>2. Present extensive co-ordination</p> <p>3. Common arrangements</p>	<p>Comment: All objectives are defined in a qualitative way, assessment of achievements has been done accordingly.</p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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 were 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⁾.

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 apparently 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 1

Terms of Reference

1. Background

The transport sector in Ghana is dominated by the roads sub-sector, which currently accounts for more than 95 % of all transport within the country.

In February 1996 the Government of Ghana (GoG) issued a policy letter stating the various measures that it would pursue to support implementation of its roads sub-sector strategy during the five-year period 1996-2000. 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.

In June 1996 GoG signed a credit agreement with the World Bank for a Highway Sector Investment Programme (HSIP) covering 1996-2000. HSIP was prepared in support of GoG's six-year medium term 1995-2000 Road Sector Expenditure Programme and the policy reforms outlined above. A number of donors in the sub-sector committed funds to the programme: JBIC, KfW, EU, the Dutch Government, BADEA, OPEC, USAID, AfDF and Danida. The programme was launched at the donors' conference in October 1996.

In early 1997 a Road Fund Board was appointed and the Fund became fully operational when the Road Fund Act was passed in September 1997. The Fund is now the main source of maintenance funding and maintenance operations are now more depending on proper plan-ning, implementation and supervision than on the availability of funds.

Another important development is the greater autonomy of Ghana Highway Authority (GHA) where a 10 member Board has been appointed including user representatives. The two other agencies managing the road system, the Department of Feeder Roads (DFR) and the Department of Urban Roads (DUR), are still ministerial departments. Their biggest challenge is the decentralisation of maintenance operations to district and municipal level.

In the area of road safety the National Road Safety Committee has been upgraded into a National Road Safety Commission vested with statutory powers to set road safety standards. The Vehicle Examination & Licensing Division has been restructured into a Driver & Vehicle Licensing Authority.

Donor co-ordination has improved considerably with a Road Programme Donor Co-ordinator in place in the Ministry since 1997. Donors' local representatives meet monthly with MRT staff in Accra and a Donors Conference is held annually, the next being planned for late November 1999.

It has been decided that time has come to evaluate the achievements of the objectives spelled out in the Policy Letter of February 1996. The evaluation will concentrate on lessons learned in the roads sub-sector after 1996 in order to provide a basis for the future course of both donor and GoG funding. However, the evaluation should also look at large interactions between roads and other sub-sectors, such as rail.

The evaluation will be carried out as a joint evaluation with GoG.

MRT will provide the Evaluation Team with an inventory and copies of all available studies and datasets pertaining to the transport sector from February 1996 to date.

2. Objectives

The main objectives of the joint evaluation are:

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

3. Scope of Work

The evaluation shall comprise, but not necessarily be limited to:

Achievement of Objectives

- Assess donor and GoG commitment to the Sub-Sector Strategy 1996-2000.
- Assess whether interventions have been consistent with the GoG sub-sector objectives.
- Assess the wider economic benefits of the various sub-sector interventions.
- Assess the impact of sub-sector interventions on poverty reduction.
- Assess the gender impact of sub-sector interventions.

Institutional Capacity and Human Resource Development

- Assess the efforts made in order to strengthen the institutional capacity of the three road agencies, the Road Fund, as well as the Ministry itself.
- Assess the on-going decentralisation of DUR and DFR and the implications for the future.
- Assess the organisational and management structure and procedures of GHA after the inauguration of the Board.

Clearing the Backlog

- Assess and analyse the physical achievements of the routine and periodic maintenance and reconstruction operations of each of the three road agencies.
- Assess the condition of the road network compared with the targets set using the annual road condition surveys as basis, supplemented with field observations.
- Analyse the actual funding, internal as well as external, compared to the annual expenditure programs.

Investment Priorities

- Assess the investment criteria used and their implications for obtaining an equitable regional distribution of road access – including the Gateway Concept.
- Assess the road standards and the new road classification.
- Analyse the extent to which the order of priority (routine and periodic maintenance, rehabilitation, reconstruction, upgrading and construction of new roads) has been followed in terms of budget allocation and actual implementation.
- Assess the methods used for prioritisation of maintenance and reconstruction works – to what extent are economic benefits used as a basis for prioritisation?

Cost Recovery

- Assess the performance of the Road Fund as the main source of funding for maintenance.
- Assess the extent to which the balance of maintenance funds has been forthcoming from external sources as well as from GoG's consolidated revenues.

Private Sector Contracting and Financing

- Assess the degree to which the targets of 100% of all major roadwork and 90% of all maintenance work being carried out by the private sector are achieved.
- Assess the quality and efficiency of contractors' work.
- Assess the corresponding reductions in road agency staff.
- Analyse the pros and cons of using labour-based construction and maintenance methods.
- Assess the progress of the on-going plans for private sector involvement in investing and subsequent operation of selected roads.

Technical Assistance

- Assess the efforts made by GoG in creating the right incentives in order to retain qualified and experienced Ghanaian staff.
- Assess the present use of technical assistance at the various levels taking into account the existing internal bottlenecks, the need for capacity building, as well as the donor's conditions.

Environmental and Safety Assessment

- Assess the efforts made to increase awareness of the environmental impact of road projects and to increase the capacity of road agencies to evaluate the environmental impact.
- Assess the efforts made to increase awareness of the safety impact of road projects and to increase the capacity of road agencies to evaluate the safety impact.

Expenditure Management and Control

- Assess the efforts made in improving contract management.
- Analyse the actions taken and the results achieved in settlement of arrears.
- Assess budgeting, disbursement and auditing procedures.

Road Transport Regulations

- Assess the effectiveness of current road traffic regulations.
- Assess the actions taken with respect to enforce axle-load standards – estimate the extent of road damages and maintenance expenditures caused by overloading.
- Assess the re-organisation and strengthening of the road safety administration based on existing data on the road safety situation.

Non-Motorised Transport

Assess the progress in developing and promoting non-motorised transport.

Monitoring

- Assess to which extent monitoring of project and sector performance has been carried out, and to what extent such monitoring has been used to allocate resources and set management priorities in the sector.

Donor Co-ordination

- Assess the consistency of donor policies/strategies/objectives with GoG sub-sector policies/strategies/objectives.
- Assess the present extent and effectiveness of donor co-ordination.
- Assess the progress of the long-term goal of adopting common arrangements for implementation, monitoring, accounting, and reporting on all donor assisted as well as GoG projects.

The Way Forward

- Based on the identified key issues, constraints, problems, strengths, weaknesses, and successes formulate 'lessons learned' in order to improve future interventions in the sub-sector.

4. Method of Work

The evaluation shall be carried out in accordance with Danida's 'Evaluation Guidelines' published in February 1999.

The Evaluation Team will carry out its work through:

- Desk Study: Review of documents, and other available written materials in selected donor country capitals and donor organisations' headquarters.

- Field Study: Review of all relevant background material in Accra, as well as visits to selected Regions and Districts. Interviews with relevant ministries, agencies, road users (transport and bus companies etc.), institutions and organisations as well as local donor representatives in Ghana.

5. Composition of the Evaluation Team

To be decided. (Combined expatriate and Ghanaian team).

6. Timing

The evaluation is planned to take place from February to December 2000. The field phase shall take place between April and June 2000.

7. Reporting

After one month of field work the Evaluation Team shall produce a brief (3-5 pages) inception report highlighting the team's initial findings on available information, the process to be followed, foreseeable obstacles to its work and proposed solutions, etc. The report shall be presented to and commented on by the Steering Committee.

At the end of the field study the Evaluation Team shall produce an outline draft report, which shall be presented and discussed with the Steering Committee before the departure from Ghana. The draft report shall be distributed to the partners not later than 1. August 2000 in order to get comments before early September. The final draft report shall be distributed not later than early October 2000.

Presentation and discussion of the report shall take place at the Donor Conference 2000. The final report shall be distributed before the end of year 2000.

Copenhagen, 23. November 1999

Appendix 2

Policy Letter February 1996

Mr James Wolfenson
President
World Bank
1818 H Street, N.W.
Washington DC, 20433
U.S.A.

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 least 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 they 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 periodic 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 use 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

ANNEX I-GLOSSARY

This Annex contains the first steps towards a more extensive glossary that will be prepared for this project. The following categories have been defined: infrastructure (1), transport equipment (vehicles) (2), road works (3), traffic (4), transport measurement (5) and evaluation (6).

1. Infrastructure

Road

Line of communication (travelled way) using a stabilised base other than rails or air strips open to public traffic, primarily for the use of road motor vehicles running on their own wheels.

Included are bridges, tunnels, supporting structures, junctions, crossings and interchanges. Toll roads are also included. Excluded are dedicated cycle paths.

Road network

All roads in a given area.

Motorway

Road, specially designed and built for motor traffic, which does not serve properties bordering on it, and which:

- ▲ Is provided, except at special points or temporarily, with separate carriageways for the two directions of traffic, separated from each other, either by a dividing strip not intended for traffic, or exceptionally by other means.
- ▲ Does not cross at level with any road, railway or tramway track or footpath.
- ▲ Is specially sign-posted as a motorway and is reserved for specific categories of road motor vehicles.

Entry and exit lanes of motorways are included irrespectively of the location of the sign-posts. Urban motorways are also included.

Urban road

A road within the boundaries of a built-up area, which is an area with entries and exits specially sign-posted as such.

2. Transport equipment (vehicles)

Road vehicle

A vehicle running on wheels and intended for use on roads.

National road vehicle

A road vehicle registered in the reporting country and bearing registration plates of that country, or having been separately registered (trams, trolleybuses, etc.).

Where registration of a road vehicle does not apply in a specific country, a national road vehicle is a vehicle owned or leased by a company tax resident in that country.

Foreign road vehicle

A road vehicle registered in a country other than the reporting country and bearing registration plates of that foreign country.

Passenger road vehicle

A road vehicle designed, exclusively or primarily, to carry one or more persons.

Vehicles designed for transport of both passengers and goods should be classified either among the passenger road vehicles or among the goods road vehicles, depending on their primary purpose, as determined either by their technical characteristics or by their category for tax purposes.

Types of passenger road motor vehicle

These vehicles may be classified according to the type of energy used by the motor, the main ones being:

- ▲ Gasoline (petrol).
- ▲ Diesel.
- ▲ Gas-powered.
- ▲ Electricity.
- ▲ Other.

Goods road vehicle

Road vehicle designed, exclusively or primarily, to carry goods.

Vehicles designed for transport of both passengers and goods should be classified either among the passenger road vehicles or among the goods road vehicles, depending on their primary purpose, as determined either by their technical characteristics or by their category for tax purposes.

Load capacity

Maximum weight of goods declared permissible by the competent authority of the country of registration of the vehicle.

Gross vehicle weight (Legally permissible maximum weight)

Total weight of the vehicle (or combination of vehicles) including its load when stationary and ready for the road, declared permissible by the competent authority of the country of registration.

This includes the weight of the driver and of all persons carried at the same time.

3. Road works

Gravel-unpaved

Regravelling

Placing of 100-150 mm of sub-base gravel on existing gravel road to restore the required thickness without earthworks and without construction of drainage structures.

Rehabilitation

Reinstatement of/repairs to earthworks and drainage structures and replacement of lost gravel wearing course.

Upgrading

Upgrading of gravel road to bituminous surfacing including improvement in alignment, earthworks and drainage constructions¹.

Paved

Resealing

Placing of another seal component on existing surface dressed road to seal cracks and improve skid resistance.

Rehabilitation

Scarifying an existing bituminous surfaced road, strengthening and shape correction of the pavement including minor earthworks and drainage improvement to restore structural strength and putting on a seal coat.

Asphalt overlay

Placing of asphaltic concrete on an existing bituminous surfaced or asphaltic concrete road to strengthen the pavement.

4. Traffic

Road traffic

Any movement of a road vehicle on a given network.

When a road vehicle is being carried on another vehicle, only the movement of the carrying vehicle (active mode) is considered.

Vehicle-kilometre

Unit of measurement representing the movement of a road motor vehicle over one kilometre.

The distance to be considered is the distance actually run. It includes movements of empty road motor vehicles. Units made up of a tractor and a semi-trailer or a lorry and a trailer are counted as one vehicle.

Tonne-kilometre offered

Unit of measure representing the movement of one tonne available in a road goods vehicle when performing services for which it is primarily intended over one kilometre.

The distance to be considered is the distance actually run.

¹ This description is restricted to upgrading a gravel road to a bituminous surfaced road. Of course there are many lower levels of upgrading in which an existing road is upgraded to a higher standard whilst keeping it as a gravel road.

ANNEX I-GLOSSARY

Transit of road vehicle

Any loaded or empty road motor vehicle, which enters and leaves the country at different points by whatever means of transport, provided the total journey within the country is by road and that there is no loading or unloading in the country.

Road motor vehicles loaded/unloaded at the frontier of that country onto/from another mode of transport are included.

5. Transport measurement

Road transport

Any movements of goods and/or passengers using a road vehicle on a given road network.

When a road vehicle is being carried on another vehicle, only the movement of the carrying vehicle (active mode) is considered.

National road transport

Road transport between two places (a place of loading/embarkment and a place of unloading/disembarkment) located in the same country irrespective of the country in which the vehicle is registered. It may involve transit through a second country.

International road transport

Road transport between two places (a place of loading/embarkment and a place of unloading/disembarkment) in two different countries. It may involve transit through one or more additional country or countries.

Road transit

Road transport through a country between two places (a place of loading and a place of unloading) both located in another country or in other countries provided that the total journey within the country is by road and that there is no loading and unloading in that country.

Road motor vehicles loaded/unloaded at the frontier of that country onto/from another mode of transport are included.

Road passenger-kilometre

Unit of measure representing the transport of one passenger by road over one kilometre.

The distance to be taken into consideration is the distance actually travelled by the passenger.

Weight

The weight to be taken into consideration is the gross-gross weight of goods.

This includes the total weight of the goods, all packaging, and tare-weight of the container, swap-body and pallets containing goods. When this tare-weight is excluded, the weight is gross weight.

Tonne-kilometre by road

Unit of measure of goods transport which represents the transport of one tonne by road over one kilometre.

The distance to be taken into consideration is the distance actually run.

Goods road transport link

The combination of the place of loading and the place of unloading of the goods transported by road, whichever itinerary is followed.

Places are defined by using international classification systems such as NUTS (Nomenclature of Territorial Units for Statistics - EUROSTAT).

6. Evaluation

Effectiveness

A measure of the extent to which a project or programme is successful in achieving its objectives.

Efficiency

A measure of the 'productivity' of the implementation process – how economically inputs are converted into outputs.

Evaluation

An independent examination of a programme or a component, partly to determine its results, efficiency, effectiveness, impact, relevance and sustainability, and partly to draw lessons that may be more widely applicable.

Impact

The positive and negative changes produced by a programme or a component, directly or indirectly, intended or unintended.

Ownership

Appropriation or taking responsibility for a certain endeavour. Ownership implies formal or real authority as well as effective self-authorisation to assume management responsibility.

Programme

A group of related projects or services directed towards the attainment of specific objectives.

Project

A planned undertaking designed to achieve certain specific objectives within a given budget and within a specific period of time.

Relevance

The degree to which the rationale and objective of an activity are –or remain- pertinent, significant and worthwhile, in relation to the identified priority needs and concerns.

ANNEX I-GLOSSARY

Sustainability

The ability of a national programme to deliver benefits to the target group for an extended period of time after the main assistance from a donor is at an end.

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PERSONS MET

Government of Ghana

Ministry of Roads and Transport

K. Abbey Sam	Chief Director
J. L. Lamptey	Director Planning Programming, M&E, IS&R for Roads
E.A. Kwakye	Director Planning
F.K. Hagan	Deputy Director, Transport and Safety
J. Manu	Legal Expert
A.G. Beckley	Donor Co-ordinator (EU)
J.B. Koranteng-Yorke	Assistant Donor Co-ordinator (EU)
J. Fox	Training Specialist/ODICT project (EU)
Ch. Folwell	Project Director/ODICT project (EU)
D. Ofosu-Dorte	Legal Specialist/Arrears study (World Bank)
D.W. McLaughlin	Attorney at Law/Arrears study (World Bank)
Mr. Boakye-Yiadom	MIS

Ghana Highway Authority

B.L.T. Sakibu	Chief Executive
A.K. Hammond	Deputy Chief Executive, Administration
F. Addo-Abedi	Chief Executive, Development
S.K. Nunoo	Chief Executive, Maintenance
J. K. Adjapong	Director of Planning Division
S.B.K. Bonsu	Director of Road Maintenance Division
S.M. Tetteh	Director Training and Manpower Development
C.K. Vasco	Director Road Safety and Environment Division
C. Addo	Director Personnel Division
S. Swanzy-Baffoe	Director Contracts Division
C. J. Rhabbles	Principal Engineer, Safety Unit
E. Twumasi	Principal Engineer
E. Papa Pireku	Regional Highway Director
S. Konda	Highway Planner/TC II project (JBIC)
L. Grenier	Environmental and Safety Specialist/TSPS project (Danida)
Ch. Andoh	Environmental Specialist/HSIP (World Bank)
H. Männchen	Maintenance Specialist (GTZ)
Mr. Swanzy-Baffoe	Director of Contracts
Mr. M. Ahadzi	Quantities Manager
Mr G. Popely	Consultant

Department of Feeder Roads

C.D. Antwi	Director
A. Twumasi-Boakye	Director
T. Essilfilie	Director
M. Mhensa	Director
Ch. Afetornu	Regional Quantity Surveyor
J. Klu	Principal Quantity Surveyor

Department of Urban Roads

L. A. Hesse	Acting Director
A. Kwablah	Director Planning
I.K. Mensah	Head of Maintenance
Ph. Lartey	Project manager

Ghana Road Fund

K. Amoah	Director
F.O.M. Digber	Roads engineer
Mr. Charles Mensah	Accountant

AMISU

A. E. Amoah

Director

T. Freeman Megbenu

Finance & Accounting Manager

Donors

E. Debroise

AFD

Project Officer

L. Duriez

AFD

Resident Manager

R. A. Sherman

African Development Bank

Senior civil transport engineer

L. Elle

Danida

Coordinator Joint Evaluation/

Steering Committee member

E. Bisgaard

Danida

Technical Advisor

Infrastructure

N.H. Petersen

Danida

Head of Section

T.T. Larsen

Danida

Technical Advisor

Ch. Kanstrup

Danish Embassy

Counsellor

P. Boamah

Danish Embassy

Transport Expert (Roads)

J. Carlsen

Danish Embassy

Project Co-ordinator

R. Blakelock

DFID

Engineering Adviser

G. Bashford

DFID

Assistant Programme Manager

I. Stewart

DFID

P. Balogun

DFID

Evaluation Department

R. Quaye

DFID Accra

K. Tanaka

Embassy of Japan

Technical Adviser

V. Zafropoulos

EU Delegation

First Secretary

Mr. R. De Raeve

European Union

Executive Secretary

Mr Amponsah Ababio

Institution of Engineers

Deputy Director

H. Takeuchi

JBIC

Representative

Mr. Taku Yamabe

JBIC

Ch. Nuoyel

JICA

W. Weth

KfW

Project Manager

B. Schoen

KfW

Director

J. van der Zeeuw

Neth. Embassy

F. Makken

Neth. Min. Foreign Affairs

Steering Committee Member

F. Kettenis

Neth. Min. Foreign Affairs

Steering Committee Member

S. Hallgrimmson

World Bank

Task Manager

B. Reja

World Bank

Evaluation Officer

G. K. Ingram

World Bank

Manager

G. Tschannerl

World Bank

Mr. Mbuba Mbungu

World Bank

Procurement Specialist

T. Addo-Ashong

World Bank Accra

Transport Engineer

PLANNING OF THE STUDY

Phases	Tasks	Brief description of activities
Inception	<ul style="list-style-type: none"> ▲ 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	<ul style="list-style-type: none"> ▲ 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	<ul style="list-style-type: none"> ▲ 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	<ul style="list-style-type: none"> ▲ 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	<ul style="list-style-type: none"> ▲ 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.

ANNEX IV-POLICY-DONOR FOCUS

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1 INTRODUCTION

1.1 Contents of evaluation group

Within this evaluation group the focus is on policy-donor related issues. The basis is Vision 2020 for the general government policy, the Policy Statement of February 1996 for the road sub-sector policy, and the policy documents of the various donors involved. The evaluation fields¹ that are covered in this group are the following:

<i>Evaluation fields</i>	<i>Sub-items</i>
Achievement of objectives	<ul style="list-style-type: none"> ▲ Donor and GoG commitment. ▲ Intervention-objective consistency. ▲ Wider economic impact of intervention. ▲ Impact on poverty reduction. ▲ Impact on gender.
Donor co-ordination	<ul style="list-style-type: none"> ▲ Consistency donor-GoG policies, strategies and objectives. ▲ Extent and effectiveness of donor co-ordination. ▲ Common arrangements for donor and GoG projects.

1.2 Relation to other evaluation groups

This group consists of two tasks, viz. “achievement of objectives” and “donor co-ordination”. According to the ToR the task “achievement of objectives” includes the assessment of GoG and donor commitment, consistency of objectives, and impact on the wider economy, poverty reduction and gender issues. These tasks are mainly related to the evaluation criteria relevance and impact. The tasks regarding donor co-ordination deal more with the evaluation criteria effectiveness, efficiency and sustainability.

¹ The evaluation fields correspond with the scope of work elements, as defined in the Terms of Reference.

2 OBJECTIVES OF EVALUATION GROUP

The two elements of this evaluation group, viz. “achievements of objectives” and “policy coordination” are separately dealt with in the Policy Letter of February 1996 and in the Terms of Reference of this evaluation. In the following, extracts are given of the relevant text taken from the Policy Statement of February 1996 and the scope of work as defined in the Terms of Reference. The two combined can be regarded as the starting point for this evaluation.

2.1 Achievement of objectives

Policy letter

The Government’s principal objective is to clear the large backlog of maintenance on a long-term sustainable 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 principals, 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 axle-weight regulations, enhancing road safety, and improving traffic management; (x) giving priority to development of non-motorised transport and improving facilities for their use; (xi) strengthening donor co-ordination, and simplifying and improving procurement, monitoring and reporting procedures for donor supported and Government of Ghana programmes.

Terms of Reference

- ▲ Assess donor and Government of Ghana commitment to the Sub-Sector Strategy 1996-2000.
- ▲ Assess whether interventions have been consistent with the Government of Ghana sub-sector objectives.
- ▲ Assess the wider economic benefits of the various sub-sector interventions.
- ▲ Assess the impact of sub-sector interventions on poverty reduction.
- ▲ Assess the gender impact of sub-sector interventions.

2.2 Donor co-ordination

Policy letter

The Government recognises the value of having a co-ordinated road sector programme supported by all donors. To that end the 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 programme, and projected plans for subsequent years. In the long-term, the Government intends to adopt common arrangements for implementation, monitoring, accounting, and reporting on all donor-assisted as well as Government of Ghana projects.

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Terms of Reference

- ▲ Assess the consistency of donor policies, strategies and objectives with the Government of Ghana sub-sector policies, strategies and objectives.
- ▲ Assess the present extent and effectiveness of donor co-ordination.
- ▲ Assess the progress of the long-term goal of common arrangements for implementation, monitoring, accounting, and reporting on all donor assisted as well as Government of Ghana projects.

3 OVERVIEW OF PERIOD 1996-2000

3.1 GoG: policy and summary of commitment to road sub-sector

Vision 2020

Since 1995 the economic and social development policy has been guided by Vision 2020, which seeks to move Ghana into a middle income country status by the year 2020. Vision 2020 consists of five basic themes:

- ▲ Human development: the basic aims are to reduce poverty, increase average income and to reduce disparities in incomes and opportunities. This includes, inter alia, increased access to education and health services.
- ▲ Economic development: in order to transform to a middle income country, the economy has to grow at a long-term, average growth of 8 percent per year. This will require strong productivity growth in all sectors and in particular in agriculture. Vision 2020 also foresees the share of industry increasing strongly (growing at an average annual rate of 12 percent per annum, compared to 4 percent for agriculture).
- ▲ Rural development: the majority of the poor live in rural areas and a judicious allocation of public investment in favour of rural areas is foreseen in order to provide adequate economic and social infrastructure.
- ▲ Urban development: towns and cities are service centres for the rural hinterland and the policy will be geared towards fulfilling that role.
- ▲ Enabling environment: the objective is to create a favourable environment contributing to accelerated social and economic development (e.g. by reforms of public administration and legal framework).

Vision 2020 gives a general development outline. Specific planning of rural/regional development and poverty alleviation needs a co-ordinated planning by the involved parties (e.g. Ministry of Agriculture, Ministry of Local Government, Ministry of Transport, etc.). Vision 2020 mentions for example that investments should be focused on Zones for Accelerated Rural Development (Afram plains and Northern regions) and on deprived areas (three northernmost regions). The actual plans to achieve these specific objectives should be made by the involved ministries and agencies. So far this planning process has not been formalised.

Road sector policy

In the past decades the road network had deteriorated significantly, despite the priority given to the economic infrastructure. In this respect it can be mentioned that in Public Investment Programmes 1994-1996, 30 percent of the total development budget expenditures were allocated to roads, of which a significant part was donor-financed. In order to facilitate general economic growth as well as human development (access to health and education), and rural development (feeder roads, connections of cities with rural hinterland), Vision 2020 considers a good road network to be an important component of the general economic and social government policy.

In February 1996 the GoG issued a Policy Letter, stating the various measures that it would pursue to support the implementation of the roads sub-sector strategy during the five-year period 1996-2000. 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:

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- ▲ 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.
- ▲ Regaining sector-wide discipline in expenditure management and control.
- ▲ Streamlining transport regulations, enforcing 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.

The Highway Sector Investment Programme (HSIP) was designed in order to achieve these objectives.

Commitment of the government to the road sector

The estimated cost of implementing the Highway Sector Investment Programme 1996-2000 was US\$ 1.48 billion, of which 50 percent would be financed from domestic sources and 50 percent would come from the donor community.

To underscore the importance accorded to the maintenance aspect of the programme, financing from the Road Fund was expected to increase gradually from 14 percent of the total requirements in 1996 to nearly 41 percent in year 2000, while the contribution from the government's Consolidated Fund was projected to decline from 41 percent in 1996 to about 25 percent in year 2000.

In the following, some trends in current funding are discussed with the aim of analysing the commitment of government and donors (details on funding are discussed in Annex VIII, financial-economic focus). Firstly, there have been serious deviations between the amounts earmarked for the programme, funding allocations (the budget), and actual releases. For example, total resources committed to the 1998 component of the road programme amounted to US\$ 426 million, but the budget allocation for the programme was only US\$ 298 million (70 percent of the commitments), and the actual releases were even less at US\$ 205 million.

Secondly, releases from the Consolidated Fund have proved inadequate and erratic. The total disbursements from the Consolidated Fund for the road programme in 1998 was only US\$ 18 million or 29 percent of the amount budgeted. They also reflected a sharp decline of over US\$ 70 million from the 1997 releases.

The irregular flow of funds from the Consolidated Fund has led to payments arrears to road contractors, which amounted to US\$ 124 million at October 1999. The release of counter funding from the Consolidated Fund to complement some donor projects has also been sluggish and this has led to delays in releases of donor funding.

Thirdly, the commitment of the government to the maintenance of the road network is on track. This is reflected in the development of the Road Fund, which has by and large reached its collection targets set during the preparation of the HSIP.

3.2 Donors: policy and summary of commitment to roads sub-sector

During the last decades many donors have supported the road sector. For example, in the period 1988-1994 14 multi-lateral and bilateral donor organisations committed a total of US\$ 800 million, or an average of US\$ 115 million per year.

In the evaluation period 1996-2000 by and large the same donors have been involved as during the past decades, the major ones being: World Bank, European Union, Japan (JICA, OECF/JBIC), Denmark (Danida), Germany (KfW and GTZ), United Kingdom (DFID), France and the Netherlands. At the start of HSIP a total of US\$ 541 million was secured from donors, or US\$ 108 million per year. This is almost the same as during the preceding years. External resources are in the form of grants, concessional loans, and non-concessional credits accruing from bilateral and multilateral donors. Funding through Export Credit Guarantee (ECG) arrangements have also been available.

In table 1 below an overview is given of the shares of the main donors in the total commitments. From this table it can first of all be concluded that the four most important donors (World Bank, Japan, Germany and European Union) together account for 80 percent (1984-1996) and 86 percent (1996-2000) of the commitments.

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Table 1 Donor commitments (loans and grants) to the road sub-sector (percentages)

Donor	Commitment 1984-1996	Commitment 1996-2000
World Bank (IDA)	42	37
Germany (KfW)	7	12
USA (USAID)	4	2
Denmark (Danida)	3	1
African Development Bank	3	0
Japan (JICA and JBIC)	20	30
European Union (incl. Stabex)	11	7
United Kingdom (DFID)	1	3
France (export guarantee)	0	4
Netherlands	5	1
Others (Norad, CIDA, OPEC, IFAD, BADEA, etc.)	2	1
Total	100	100

Source: Derived from World Bank, Staff Appraisal Report HSIP, 1996

Note: Commitments 1996-200 concern the secured funding at the time HSIP was prepared (end of 1995/beginning 1996). At a later stage other donors also joined the programme or reduced /increased their commitments. Some of the commitments were never disbursed.

Problems have been encountered with the disbursements of funds, or rather with the often cumbersome process of project preparation. Moreover, the lack of releases from the Consolidated Fund for counter funding has delayed the disbursements and implementation of certain donor supported projects. In this respect it can be mentioned that in the period 1984-1996 only 70 percent of the commitments was actually disbursed. For the period 1996-2000 the picture is not much better: e.g. in 1998 only 40 percent of the commitments were released.

The overview of the secured funding for HSIP in 1996 and actual funding are summarised in table 2 below. Information on the actual disbursements per donor is not available for each of the years within the evaluation period, therefore a comparison of the secured funding per country (1996) with the actual disbursement per country can not be made. Instead, a more qualitative assessment will be made. The main reasons for this are:

- ▲ Unforeseen donors at the time of preparation HSIP: for example, Denmark started a new programme as a follow-up on earlier involvement in the road sector, the United Kingdom started a feeder road programme, and several new donors (United Kingdom, Japan and Spain) contributed to the Small Bridges programme of DFR.
- ▲ Delays in project preparation and decision making, which in turn led to delays in implementation: in varying degrees this is the case for all donor projects, but especially for the ones financed by Japan and Germany.

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Table 2 Planned and actual donor financing of road sub-sector, 1996-2000 (US\$ million)

Donor	Programme	Planned Period	Planned financing					Total	Actual funding 1996-2000
			1996	1997	1998	1999	2000		
SECTOR-WIDE	HSIP	1996-2000	10	20	20	25	25	100	Progressing with some delays Started in 1999 Start foreseen in 2000, reduced to US\$ 25 mln. Followed after NFRMP, 1999-2003, US\$ 28.5 mln. Mistake in HSIP, Trip II is US\$ 54 mln. Progressing well Followed after Trip II, 1999-2004, US\$ 53 mln.
WB/IDA	HSIP/Kum-Anw/Accra-	1996-2000	5	10	10	10	30	104	
Japan/JBIC	Y.	1996-2000	10	15	21	28	5	40	
Germ./KfW	HSIP/Asanti-Brong Ahafo	HSIP not planned							
DK/Danida	TSPS	1996-2000	8	10	11			30	
EU	Trip II	HSIP not planned							
EU	Trip III								
GHA only									
WB/IDA	Transport Reh. Project II	1991-1996	13	5				18	Completed 12/97
Germ./KfW	Tema-Akosombo	1996-1999	3	5	9			17	Completed 05/99
Germ./KfW	Lower Volta Bridge	1992-1996	8					8	Completed 08/97
Japan/OECF	Tamala-Paga	1995-1996	20	20	20			60	Completed 09/98
Netherlands	Ejura-Gyato Zongo	1995-1997	3	3				6	Completed in 1999
Netherl./UK	Gyato Zongo-Yeji	HSIP not planned							Started 03/1999, 1999-2002, US\$ 43 mln.
Badea	Bridge rehabilitation	1995-1997	3	3				6	?
DFR only									
WB/IDA	NFRMP	1992-1998	7	10	8			25	Completed 06/98
OPEC	NFRMP	1992-1998	2	3				5	Completed in 1999
DK/Danida	NFRMP	1992-1998	4	4				8	Completed
USA/USAID	NFRMP	1992-1998	5	5	3			13	Completed
France/ADF	Cocoa roads	1988-1996	2					2	No info
EU	Stabex 1	1996-1997	8	2				10	Completed end 1997
EU	Stabex 2	HSIP not planned							Design ready 1998, start delayed until 2000
UK/DFID	Bridges for feeder roads	HSIP not planned							1997-2000, US\$ 13 mln
UK/DFID	Support to feeder roads	HSIP not planned							1999-2003, US\$ 41 mln
Japan/JICA	Small bridges, phase I	HSIP not planned							1995-1999, US\$ 15 mln., completed in 1999
Spain	Bridges	HSIP not planned							1995-2000, US\$ 3 mln
DUR ONLY									
WB/IDA	Urban II	1991-1996	5	2				7	Completed end 1999
WB/IDA	Urban Transport Project	1993-1998	13	20	15			48	Completed end 1999
UK/DFID	Nsawam Road	1996-1999	5	5	5			15	Did not materialise because of problems with export guar.
Fr./COFACE	Kanda Interchange	1996-1998	10	10				20	Completed in 1998
Fr./COFACE	Sankara Interchange	HSIP not planned							Unclear why not included in HSIP, US\$ 22 mln.
Total			144	152	122	63	60	541	

Source: World bank Staff Appraisal Report HSIP, 1996

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In what follows, the experiences of some of the major donors are catalogued, focusing on (i) general policy in Ghana, (ii) policy in the road sector, and (iii) main characteristics of the road projects.

World Bank

General policy in Ghana

Since 1983 the World Bank has loaned in total US\$ 3.5 billion to Ghana, mainly in the form of concessional loans (IDA). This makes Ghana the largest recipient of World Bank support in Africa.

The main focus of the World Bank has been support for economic policy reform through structural adjustment loans (provision of foreign currency to finance essential imports and to assist the government budget). These loans account for about one third of the total World Bank assistance. The remainder of the funding is spread over seven sectors. The division of the ongoing funding over these seven sectors is as follows:

Table 3 World Bank support for ongoing programmes

Sector	Share in total funding in %
▲ Rural development	10
▲ Education	10
▲ Energy	25
▲ Health	5
▲ Infrastructure	25
▲ Private sector	15
▲ Public sector	10
▲ Total	100

Source: Ghana and the World Bank, November 1999

Recently the Comprehensive Development Framework (CDF) - see also next section - was initiated in Ghana (on a pilot basis). In this approach the responsibility for the formulation of projects is given to the recipient and greater co-ordination with other donors is promoted. One of the consequences of this approach is a stronger responsibility for the World Bank office in Accra for implementation and monitoring.

Policy in the road sector

The World Bank's involvement in the development of the transport sector has been comprehensive and is geared towards assistance for the rehabilitation of roads, ports and railways. Since 1983 the World Bank has loaned over US\$ 600 million to the transport sector. This is about 20 percent of the total World Bank support to Ghana, making roads the most supported sector, together with energy.

The World Bank considers that the present state of the transport infrastructure (including roads) is an important constraint for economic growth and that the poor need additional infrastructure to enable them to participate in economic and social activities. The main focus is, therefore, on investments that yield high economic returns, including those that promote and facilitate exports, as well as on developments in the road sector that contribute to poverty reduction, particularly in rural areas.

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The World Bank has played a leading role in the road sector, partly because it was (and still is) the main donor, and partly because the bank traditionally supports broad programmes, including funding of road maintenance/rehabilitation, technical assistance and conditions for policy reform. This, in combination with the fact that the World Bank can draw on more experience than any other donor, means that in practice the World Bank sets the trend for other donors.

In the past the World Bank has financed separate programmes for highways, feeder roads and urban roads, together with assistance for complementary institutional and policy reforms. These programmes were often executed with co-financing or parallel financing of other donors. In the period preceding the evaluation period 1996-2000 this concerned the following programmes: Transport Rehabilitation Programme II (GHA, planned for 1991-1996), National Feeder Road Rehabilitation and Maintenance Programme (DFR, planned for 1992-1998), Urban Transport II (DUR, 1993-1998). In addition, the programme Urban II (planned for 1991-1996) also had a road component for DUR. The four programmes were completed in the period 1996-2000, all with delays between 0.5 and 4.0 years.

In 1995 it was realised that the approach followed to date had not been fully in line with the integrated character of the road network and therefore choice fell on a sector-wide programme, jointly prepared with all stakeholders and donors, and supported by all donors active in the sector. This resulted in the Highway Sector Investment Programme (HSIP) 1996-2000. As will be discussed in the next section on donor co-ordination, this approach is basically sound and a step in the right direction, although in practice the integrated approach has not been fully realised.

The Staff Appraisal Report for HSIP was submitted in April 1996. The World Bank agreed to contribute US\$ 100 million, in addition to the remaining funding of ongoing World Bank programmes (US\$ 98 million). It was foreseen that US\$ 339 million would be financed by other donors, also consisting partly of ongoing programmes. The objectives of HSIP are in line with the objectives of the Government of Ghana and the World Bank:

- ▲ Reducing Vehicle Operating Costs through maintenance and rehabilitation of roads. This would in turn increase agricultural production, stimulate exports and increase mobility, especially in rural areas.
- ▲ Ensuring the sustainability of improvements through cost recovery measures (Road Fund).
- ▲ Building and effectively utilising local capacity in public and private institutions associated with road service delivery.
- ▲ Improving financial management and control.

In addition, mention is made of the fact that although the programme does not include specific targeted interventions to reduce poverty, it will have a significant impact on poverty alleviation (in particular for the rural poor), it will improve access to health and education, and create employment in the private sector.

The World Bank contribution to HSIP is a mixture of financial support for periodic maintenance and rehabilitation of roads, and for technical assistance and training. World Bank programmes in general, and HSIP in particular, have no preference for support of specific regions and they do not directly relate to other specific World Bank programmes.

Japan

General policy in Ghana

In terms of commitment to the road sub-sector, Japan is the second largest donor. Priority of Japan's overall support is geared towards assisting in the following areas:

- ▲ Agricultural development.
- ▲ Improvement of basic human needs.
- ▲ Rehabilitation and upgrading infrastructure.
- ▲ Human resource development.
- ▲ Supporting structural adjustment.

Support to the road sector

Support to the road sector ranks within the priority areas. The support is in two parts: (i) grant aid and technical co-operation through the Japan International Co-operation Agency (JICA); and (ii) loan assistance through the development bank International Bank for International Co-operation (JBIC).

The objectives for JICA are notably different from the ones for JBIC:

- ▲ JICA: to improve the condition of feeder roads linking farming areas, in order to increase the participation of the farming community in the economy and to reduce the level of poverty.
- ▲ JBIC: to rehabilitate and improve main arterial roads that are essential to promoting Ghana's export competitiveness necessary for realising the objectives of the 'Gateway Programme'. In this context JBIC has also assisted in the ports and railway development. All these initiatives are geared towards ensuring better links between sub-regions and major cities in order to help reduce poverty in rural areas and to reduce vehicle operating costs in those areas where traffic volume is large.

The JICA and JBIC assistance is not earmarked for specific regions and the support in the road sector is not directly complementary to other projects supported by Japan.

Grant aid through JICA

The general policy underlying this type of assistance is to support the efforts of the government in the provision of road infrastructure, which would open up rural farming areas, particularly those linked by the feeder roads network. A major constraint to efficient transportation in rural communities is the myriad of small streams that isolate one community from the other. DFR instituted the Small Streams Bridges Rehabilitation Scheme to address this problem and Japan, through JICA, assisted to promote this initiative. In the period 1995-1999 Phase I of this programme has been executed (21 steel bridges and nine medium-sized bridges at a cost of \$11 million, as to the overview prepared by DFR).

In selecting these projects the criteria used were based on results from a survey of the bridges, with consideration for the level of economic development and level of deprivation of the area.

In the area of Technical Assistance, there has been technology transfer by members of Japan Overseas Co-operation Volunteers to GHA and DFR staff in automobile maintenance. This assistance was in total 24 man-months.

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Loan assistance through JBIC

JBIC has provided continued support for the development of the road sector since 1987. It has provided concessional loans to rehabilitate (i) most of the road network that constitutes the “Golden Triangle” and (ii) the vital road sections of the arterial trunk roads between Yamoransa and Paga. As of February 2000 JBIC has concluded five loan agreements towards road projects in Ghana, amounting in total to Yen 42.0 billion (at the present exchange rate about US\$ 400 million).

According to the World Bank Staff Appraisal Report for HSIP, JBIC would in the period 1996-2000 finance trunk road rehabilitation projects and technical assistance for a total value of US\$ 104 million. This was based upon a mission carried in 1995 (Special Assistance for Project Formulation, SAPROF), which identified the rehabilitation of the Accra-Yamoransa road, as well as Technical Assistance to GHA. The loan agreement for this road was only signed in March 1998 and the works are expected to be completed in 2000. The loan for the Achimota-Aninam road was signed in April 1999 and work has yet to start. All in all, this is a strong deviation of the planning of HSIP.

The Technical Assistance is executed in two phases (TC Phase I : September 1996 - October 1998; TC Phase II: ongoing), both with the following components: (i) Management and Systems Expert who assists GHA to rationalise its organisation and management systems; (ii) Highway Planning Expert who is involved in the preparation of a Trunk Road Master Plan; and (iii) Contract Management Expert who provides assistance to GHA to strengthen its capacity in contract management especially at the regional level.

Tokyo Head Office is the main supervising body. The London Office also covers overall projects in Ghana.

United Kingdom

General policy in Ghana

The Department for International Development (DFID) is the agency of the British government charged with the promotion of development and poverty reduction in developing countries. The bulk of DFID's assistance is concentrated on the poorest countries in Asia and sub-Saharan Africa. In Ghana the overall DFID objective is to support the development goals as formulated in Vision 2020. DFID provides support to the central budget and public service reforms, and to the following sectors: health, education, rural infrastructure, water and natural resources. Because Ghana's overall policies are considered to be sound and because the prospects for increased partnership are considered to be good, DFID plans to increase its support to the country, from £36 million (US\$ 50 million) in 1998/1999 to £43 million (US\$ 60 million) in 2001/2002.

Policy in the road sector

Of the total budget for 1998/1999 – 2001/2001, about 20 percent, or £ 34 million, is allocated to the road sector, making it with health the most supported sector. The support in the road sector is concentrated in two feeder road projects, which have been selected because of their relevance in poverty reduction:

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- ▲ Bridges for Feeder Roads Project: DFID is implementing the construction of bridges in selected rural areas in Western and Central Regions. The purpose of the project is to improve the livelihood and well-being of about 350,000 people in the selected areas by allowing them access to markets for input supplies and agricultural produce, and to attend schools, clinics and hospitals. The cost of the project is £8.5 million (US\$ 12 million). Implementation started in October 1997 with a projected completion date of September 2000.
- ▲ Rural Roads Project: DFID has a partnership with DFR to assist with rural roads development in the Northern Region, northern part of Volta Region and in parts of Brong Ahafo. The purpose of the project is to improve access to services and markets in the rural parts of the region by helping develop a maintainable rural road network within the framework of the 1999-2003 road sub-sector strategic plan of MRT. The project started in May 1999 and is expected to be completed by March 2003. The total cost of the project is £28 million (US\$ 39 million), made up of £23.8 million for financial assistance and £4.2 million (US\$ 6 million) for technical assistance.

In the recent feeder road programme, DFID has a clear regional preference and this programme is also complementary to other DFID programmes in these areas.

Denmark

Policy in the road sector

Danida has a general transport policy, as formulated in the document "Transport Infrastructure" (August 1999). This document spells out in clear and concise terms the main issues of the road sector in developing countries (much less attention is given to other transport modes) and it formulates the general policy to be followed by Danida. Apart from the direct issues in the road sector the document pays attention to cross-cutting themes (environment, gender). The document emphasises as well that long-term assistance is needed for this kind of sector programme.

In line with this general policy, the primary objective underlying Danida support to the transport sector in Ghana is to secure a sustainable, basic infrastructure, which can provide agriculture with necessary support in the form of access to markets for agricultural produce and which can supply production resources, thereby promoting economic growth and development in rural areas. Roads contribute also indirectly to combating poverty by easier access to social services and by job opportunities in the labour-intensive method of road construction.

Wider aims include poverty alleviation as well as improvements in environment and safety conditions. Gender issues and effective participation by civil society are also accorded substantial attention.

In the period 1992-1998 Danida supplied parallel financing to the rural roads programme led by the World Bank (National Feeder Road Rehabilitation and Maintenance Programme, NFFTMP) and to renovating ferries and ferry berths on Lake Volta. As a follow-up on this programme the Transport Sector Programme Support (TSPPS) was initiated in 1999. This project is budgeted at DKK 412 (US\$ 53 million at the present rate of exchange) and will be implemented over the period 1999-2003.

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The TSPS will include support to land and water transport, support to personnel development and central and decentral institution building, as well as support to the development and production of means of transport by small producers. Land transport will be supported by continuing with a second phase of the feeder-roads programme NFFTMP. Priority will be given to the application of labour-intensive methods, as well as to further expanding the road maintenance planning and budgeting system, which was developed under the first phase of the feeder-roads programme.

While the feeder-roads component is the core of the Danish programme, support will also be granted to re-establishing and rehabilitating the highway network of GHA.

In line with the advance of the decentralisation process, districts will be given increased responsibility for expanding and maintaining the feeder-road network and lake transport in particular. The capacity of the Ministry of Transport and its regional offices to provide the necessary technical back-up for the districts will therefore be improved. As more responsibility is delegated to the districts, their capacity will also have to be strengthened, and it will be necessary to continue training local contractors.

In order to support increased agricultural production, under the transport sector programme, Denmark will seek to improve and ease transport between feeder roads and the individual producer. Today, this transport is more or less limited to what can be carried on the head. Opportunities to develop cheap, appropriate means of transport (carts, bicycle trailers etc.) to be used by the majority of producers (peasant farmers) and establish production facilities will be investigated, partly through NGOs and partly in the private sector.

A Joint Annual Sector Review was completed in June of this year reviewing overall sector policies and looking into specific issues, such as local government reform and fiscal decentralisation, and examining progress in the TSPS.

Germany

General policy in Ghana

The German government supports Ghana's development through GTZ (technical assistance) and through the "Kreditanstalt für Wiederaufbau" (KfW, financial co-operation). KfW is a development bank and it has been active in Ghana since 1962, with the objective:

- ▲ To reduce poverty: the focal sectors are water supply and basic education, and the support is in the form of grants.
- ▲ To promote the private sector: the focal sectors are transport, town development and privatisation, and the support is in the form of concessional loans (at 0.75 percent annual interest with 40 year maturity and ten year grace period).

The total cumulative portfolio since 1962 amounts to DM 1.2 billion (US\$ 575 million at the present exchange rate). Grants account for 35 percent of the portfolio and concessional loans account for the remaining 65 percent.

Policy in the road sector

The general road policy of the German Bilateral Economic Co-operation is laid down in the sector concept "Roads in development co-operation". In line with this general concept, the overall goal of the road programmes supported by KfW is to contribute to an improvement in the road network in Ghana. In the view of KfW the road sector is a

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key in the promotion of the private sector, which plays and will play a crucial role in the economy. Additionally, the reduction in transport costs, as well as the improvement in mobility of persons and goods that these projects provide, is an important element of the poverty reduction strategy articulated in Vision 2020. These objectives are also in line with the policy of the German Bilateral Economic Co-operation as laid down by the German Ministry of Economic Co-operation and Development.

Within the road sector KfW opted for support to the trunk road network managed by GHA, because in the view of KfW these roads have higher economic benefits and better prospects for sustainability.

An average of 23 percent of all grants and loans committed to Ghana since 1962 have been related to the transport sector and 41 percent of the present portfolio of DM 536 million (US\$ 256 million) is allocated to the transport sector. Some 80 percent of the sector is for the road sub-sector and 20 percent to the Volta Lake Transport Systems. This underscores the importance accorded the road sector in KfW's portfolio.

Since 1992, the following three road projects/programmes have been completed or are still on-going:

- ▲ *Rehabilitation of Lower Volta Bridge*: loan of DM 23.6 million (US\$ 11 million); construction works started in June 1992 and completed in August 1997; minor additional works were also completed in August 1997.
- ▲ *Rehabilitation of Tema-Akosombo Road*: this is a 78 km truck road supported by a loan of DM 32.0 million. The project was executed between January 1997 and May 1999.
- ▲ *Sector Adjustment Programme Loan*: a loan of DM 50 million (US\$ 24 million) has been allocated to the maintenance and rehabilitation of roads in the Ashanti and Brong Ahafo Regions. Up to 400 km of trunk roads will be rehabilitated (out of a pre-selected 700 km). This project is included in HSIP and was originally to be executed in the period 1996-2000. However, the concerned feasibility study has only recently been completed and is presently being discussed with GHA. The construction works will start in the fourth quarter of 2000, about four years later than scheduled. KfW remarked on the delays related to the policy to put ownership of KfW-financed projects with the implementing agency GHA and that GHA has not been sufficiently active in this respect. These remarks could not be checked with GHA, but it was clear KfW could also have shown a more pro-active approach.

In addition to these three projects, KfW will finance rehabilitation of the road Tema - Sogakope. This road is not included in the HSIP programme. Construction works are planned to start at the end of 2001.

KfW projects do not have a fundamental regional preference. From KfW's perspective the needs and justification of projects conform with mutually agreed economic and social criteria. With respect to the Lower Volta Bridge and the Tema-Sogakope projects, consideration was given to past contributions to the national road network in the southern part of Ghana. The Sector Adjustment Programme focuses on road rehabilitation in different regions (Brong Ahafo and Ashanti) in order to avoid any regional preference in the KfW overall programme.

Projects are in principle selected on the basis of multiple criteria analysis. An important element of this analysis is the cost-benefit analysis (CBA), which takes into account cost elements that can be quantified relatively easily. Additionally, the projects impact on the

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environment, poverty situation, social and gender situations are investigated as well. These aspects are normally difficult to quantify in terms of costs and benefits, and so do not form part of the CBA. However, where it is felt that a project can have significant impact on any of the aforementioned non-quantifiable aspects, detailed investigations are undertaken and included in the project's monitoring plan. Because KfW's financing operations in Ghana have so far supported mainly maintenance and rehabilitation projects, the determination of gender, environmental and social impact assessments have been rather limited, and in practice multi-criteria analyses have not been carried out. However, attention is given to road safety aspects of the programme while also addressing the needs of non-motorised transport.

A fully-funded consultant will assist GHA during the whole project cycle in all KfW-supported road projects. This concerns typically project-related activities such as planning, supervision, and final acceptance of the construction works.

GTZ has given technical assistance to the road sector. In first instance this was directly related to the KfW programme in the Ashanti and Brong Ahafo Regions. At a later stage it was decided to concentrate on assistance to the Maintenance Department of GHA (amongst others to assist with the road condition survey and Pavement Management System).

No specific arrangements for implementation, monitoring, accounting and reporting that conform with "other donor practices" exist. KfW has no office in Accra and programmes are under the responsibility of the main office in Frankfurt. Efforts are made to co-ordinate and harmonise KfW's road sector policy and implementation concepts during project field missions by staff from headquarters twice a year.

European Union

General policy in Ghana

The overall objective of the support of the European Union to Ghana is to reduce poverty through the introduction of a broad-based and self-sustaining growth process, with the following priorities:

- ▲ Consolidation of democracy.
- ▲ Campaign against poverty.
- ▲ Sustainable economic and social development, with emphasis on development of human resources, in particular on questions of gender and environmental protection.
- ▲ Integration in the world economy through the promotion of the private sector and development of trade.

In view of these priorities the European Union concentrates its assistance on transport infrastructure (40 percent) and rural development (35-40 percent). The balance is allocated to private sector development, health and education, and programmes to promote good governance.

The support programmes of the European Union for transport and rural development are complementary to each other and they are concentrated in the south-west of Ghana.

Policy in the road sector

Transport infrastructure has been a principal focus of European Union support in previous National Indicative Programmes (NIP) and it is the most important sector in

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the present NIP (8th EDF). In the past a part of EU funding in the transport sector has been also used for the development of the ports of Tema and Takoradi, but presently all assistance within the transport sector is concentrated on the road sub-sector.

The main areas for EU intervention are (i) rehabilitation and maintenance works; (ii) technical support in economic analysis, design and tender document preparation, and works supervision; and (iii) institutional support and capacity building. In addition to major trunk road works, agricultural feeder roads are also considered for EU support. In all cases environmental impact assessments are mandatory, particularly in the ecologically sensitive tropical rain forest regions of the south-west.

The Transport Infrastructure Project II (TRIP II) is a partial reactivation of a previous transport infrastructure project (TRIP I), which was approved in 1987, but which could not be implemented due to legal disputes between the Government and a European contractor. Following the resolution of these problems in 1994, the Financing Agreement for TRIP II was signed in August 1996. Euro 54 million (about US\$ 56 million at the exchange rate of April 2000) has been allocated and it is scheduled for completion in 2000. TRIP II has been financed in the overall context of Government policies, forming an integral part of the country's road network and, in particular, the south-north access in Western Region. The largest element is the construction and enlargement of 117 km of trunk road between Awaso and Gambia No. 2. Other elements are the Road Programme and Donors Co-ordination Unit, design for the follow-up project TRIP III, provision of axle load control equipment and a capacity building and training programme.

The follow-up Transport Infrastructure Programme III (TRIP III) focuses on the rehabilitation of 246 km of trunk roads in the South West of Ghana and the financing agreement has been signed in August 1999. Total funding is Euro 56 million (US\$ 58 million at the exchange rate of April 2000). A major condition for implementation of the project is the Government's policy approach to the arrears problems.

In addition to the TRIP II and III (financed in the context of the National Indicative Programmes) a project is financed from STABEX funds. In total Euro 14 million (US\$ 15 million) has been allocated for the improvement of feeder roads, of which Euro 6 million (US\$ 6 million) was assigned and implemented during the first phase. This included 700 km of feeder roads in six regions with the following distribution: Western Region 320 km, Ashanti 90 km, Eastern Region 40 km, Volta 112 km, Brong Ahafo 85 km, Central Region 53 km. Most of the works were completed by the end of 1997.

The design of the second phase of the STABEX programme, for a new set of 700 km, was prepared during 1998. However, the disbursement of the balance of Euro 8 million has been postponed until the conditions of the Framework of Mutual Obligations are fulfilled. One important condition was that the maintenance programme for feeder roads would be financed from the national budget for not less than Euro 4.5 million (US\$ 4.5 million), which was not the case in 1997 and 1998. It was also observed that a much closer monitoring system for the implementation of the 2nd phase was required in order to avoid the shortcomings experienced during the first phase (delays and lack of adequate supervision, which led to low quality of works).

The European Union has decentralised its operations and the road programme supervised by a technical expert stationed at the EU Delegation in Accra.

France

General policy in Ghana

French aid to Ghana is channelled through the “Agence Francaise de Developpement” (AFD). AFD started operations in Ghana in 1985, marking its maiden representation in an anglophone country. AFD is a development bank and it provides governments and companies with financing in the form of grants and loans for infrastructural facilities and productive pro-job investment projects. Proparco, a subsidiary of AFD, finances investment projects of private sector companies in the form of equities and commercial loans, either directly to the beneficiaries or through credit lines in foreign currency provided to local commercial banks.

AFD operations include rural development, infrastructural and urban development, agribusiness, energy, hydraulics, transport, telecommunications and mining.

Since the first quarter of 1998, AFD has received authorisation to offer concessionary loans to Ghana in lieu of grants. Total cumulative commitments by AFD at the end 1999 amounted Euro 305 million (US\$ 317 million, at the exchange rate of April 2000). The level of commitments accelerated from 1997 to 1999 after a reduction of 61 percent in 1996. In 1999 alone five new projects benefited from loans totalling Euro 52 million (US\$ 54 million); this is more than a threefold increase over the 1998 commitments.

Policy in the road sector

During the evaluation period 1996-2000 French commitments to the road sector were limited to COFACE guarantees for commercial loans given by a French bank for the construction of the Kanda and Sankara Interchanges in Accra (total investments of about US\$ 40 million). This was based on an agreement made in 1994, prior to the evaluation period.

Recently AFD decided to support the road sector in Ghana and from the 1998/1999 budget Euro 20 million (US\$ 21 million) is allocated to the World Bank led Urban Transport Project. With a share of 48 percent in the 1998/1999 budget the road sector receives a major part of the support. The French contribution to this project involves the rehabilitation of 20 km of selected roads in Tema and Sekondi-Takoradi. The project aims at easing traffic congestion in the two cities, and to contribute to urban economic development and the social welfare of the urban population of the affected cities. The selection of consultants for detailed design and supervision of works is currently underway. The loan agreement was signed on 9 February 2000.

In the context of the World Bank led project Urban V (capacity building and infrastructure, under Ministry of Local Government) ADF intends to finance road improvement in about 25 secondary towns, for a total value of US\$ 6 million. These 25 towns have been requested to prepare proposals.

In addition, ADF is financing a feasibility study for the construction of 20 bridges in Ghana's northern regions. The list of the proposed bridges was drawn by DFR and it is consistent with the 1998-2000 sectoral strategic plan of MRT. The expectation is that the construction of the bridges will improve access to the surrounding villages and consequently stimulate agriculture. Funding of this project will be a grant.

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In principle, ADF will have in the road projects neither an explicit regional preference nor a relation with complementary projects supported by ADF. The ADF programme is supervised by an expert stationed at the ADF local office in Accra. This expert is, however, also involved intensively in other sectors.

The Netherlands

The road projects supported by the Netherlands do not belong to the regular assistance programme, but are financed in the context of the programme "Development Relevant Export Transaction" programme, which grants a maximum of 40 percent of the costs, while the remainder of the funding has to be found elsewhere. This programme has the dual purpose of:

- ▲ Funding projects which are relevant for the recipient countries. The development relevance has to be justified by using the yardsticks of economic, financial and institutional viability, as well as positive impacts on employment, gender questions and environment.
- ▲ Supporting Dutch companies in the export of goods and services. This often has the side effect of insufficient (or no) competition in the tendering process and as such is contrary to the general policy in Ghana.

In this way four road segments of the road between Kumasi and Yeji have been reconstructed by the same Dutch company and without tendering. The different stages of the process of appraisal, financing and implementation in these projects are illustrative for many of the donor-financed projects (and not exclusively for Dutch assistance) and for that purpose the process is described in greater detail for two of the four road segments:

- ▲ Kumasi - Mampong: 45 km and completed in 1993.
- ▲ Mampong - Ejura: 39 km and completed in 1994.
- ▲ Ejura - Gyato Zongo: 45 km.
 - The request for financing under the ORET programme was received by the Dutch government in March 1994. The costs were in first instance estimated at DFL 63 million (US\$ 27 million at the exchange rate of April 2000). The first change was to increase the works from 45 km to 60 km. Later this was reduced again to the original 45 km, but now at a reduced cost of DFL 45 million (US\$ 20 million). The reduction of the price was realised after a mission visited Ghana to verify the cost breakdown and found the offer to be too expensive.
 - The grant agreement was signed in February 1995. The total procedure lasted almost one year, because the scope of work changed and because the normal procedure takes such a time.
 - The contract with the Dutch company was signed in June 1995.
 - The remainder of the required funds was partly loaned from a commercial bank in the Netherlands (covered by an export guarantee of the Netherlands Export Credit Agency) and partly provided by the Consolidated Fund of the GoG. The contract with the Dutch bank was signed in February 1996, but only became effective in April 1996 because not all conditions were fulfilled (amongst others related to problems with the government contribution).
 - The work on this road segment was completed in mid-1997.
- ▲ Gyato Zongo – Yeji: 86 km. Also this process took a rather long time:
 - The first application for financing under the ORET programme was received by the Dutch government in December 1995, for a project estimated to cost DFL100 million (US\$ 43 million).

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- In the reviewed application the price was reduced to DFL 93 million (US\$ 40 million), for unclear reasons.
- Insufficient information was provided to the Dutch government to justify the funding and this led to a delay in the approval procedure. The grant agreement was eventually signed in December 1997.
- The remainder of the required funds was partly loaned from a commercial bank in the Netherlands (covered by an export guarantee of the Netherlands Export Credit Agency), partly from a British commercial bank (covered by an export guarantee from the British export guarantee agency ECGD) and partly provided by the Consolidated Fund of the GoG. As mentioned above, one of the aims of the Dutch programme is to support Dutch exporters and as such the project was not tendered. This is not in line with the policy of the United Kingdom and this led to an additional delay.
- The contract with the Dutch company was signed in August 1998.
- Works started in March 1999 and are expected to be completed in May 2002.

African Development Bank

Policy in the road sector

The main focus of projects supported by the African Development Bank (ADB) in the road sector is on rehabilitation and improvement of the network, particularly in rural areas, in order to improve the agricultural sector through the rehabilitation and the expansion of rural feeder roads and the development of road links from crop production areas to market centres and transport facilities to the export markets.

In the 1970s and 1980s the ADB participated in two road projects and one railway project. The project Accra-Abidjan Highway was successfully implemented, but the project Anyinam-Kumasi experienced problems with the contractor and it was suspended in 1989 at 40 percent completion.

In 1992 the bank financed the study for the road Achimota-Anyinam and in 1993 the Two Roads Study. Implementation of the studies was delayed, but have been recently completed. Except for this preparatory work, during the review period 1996-2000 the ADB has not been involved in other support to the road sector. It is expected that at the end of 2000/beginning of 2001 the ADB will finance a part of the rehabilitation of Anyinam-Kumasi and of Achimota-Anyinam.

3.3 Donor co-ordination

Programme co-ordination

In the past, donor support has not been well co-ordinated and this has led to the situation that the government's institutional resources were strained by a multiplicity of terms, conditions and reporting requirements of donors. HSIP is a first collaborative undertaking by the government, representatives of road user groups, the Parliamentary sub-Committee for Infrastructure, and Ghana's development partners (donors) active in the road sector. Unlike previous road sector projects, HSIP covers the total road sector with a commitment to co-ordinate and unify the activities of all donors.

In this context it has to be noted that in the past also some donor co-ordination was done, but this was on a small scale, and within one road agency. For example, the "National Feeder Road Rehabilitation and Maintenance Programme" (DFR, 1992-1998) was a World Bank led programme with co-financing of OPEC and parallel financing of Danida and USAID².

As mentioned in the Staff Appraisal Report of the HSIP, this sector approach offers distinct advantages. However, not all of these advantages have been realised during the appraisal and implementation of HSIP:

- ▲ Staff Appraisal Report: the sector approach recognises that the road networks of the various agencies are interdependent. There is no point in, for example, improving the feeder roads in an area without a complementary plan to improve the trunk roads to which these feeder roads are connected.
Comment: while this is basically right, in the formulation of HSIP such a comprehensive approach was not followed and, as will be argued in the various annexes, such an integrated approach has also not been followed in subsequent years.
- ▲ Staff Appraisal Report: HSIP supports a comprehensive programme that is jointly formulated by all key stakeholders in the sector. The deepened involvement of user groups and donors has raised the focus on sustainability with greater emphasis being placed on maintenance.
Comment: formulation and appraisal of HSIP was a result of many years of consultation and discussion of the World Bank with the donors and user groups, but it was not yet a jointly formulated programme.
- ▲ Staff Appraisal Report: HSIP is supported by all donors active in the sector. This joint effort produced a more realistic programme³ and facilitated the adoption of key policy reforms and institutional changes intended to make the road infrastructure services more sustainable and responsive to the needs of users.
Comment: during interviews of the Evaluation Mission with the main donors it was confirmed that the HSIP is the framework of all donor activities.

² Although this programme was indeed smaller and within one road agency, not all donor co-ordination was equally effective. E.g. the co-operation with USAID was less intensive as desired.

³ The GOG's original proposed budget for the 1996-2000 HSIP of US\$1.90 billion was scaled down to US\$1.48 billion following a joint assessment which took into consideration the overall needs of the economy and a more realistic projection of likely revenues.

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- ▲ Staff Appraisal Report: the strategy promotes the standardisation of implementation procedures. This initiative is intended to ease the pressure on the government's limited institutional resources, which had been overstretched in the past by the varying demands of individual donors.

Comment: Annex IX (contract management) argues that standardisation of implementation procedures has been pursued only to a limited extent.

The National Economic Forum held 1997 adopted the broad-based budgeting concept for reporting and assessing the operations of central government. In this framework projects financed by donor funds would be closely monitored to ensure full accounting of government's contribution to capital formation in the country. It is, therefore, regrettable that the Controller and Accountant General's (CAG) report for 1998 indicated that "donor fund disbursements do not pass through the Treasury system because donors have established disbursements procedures with the Ministries, Departments, and Agencies (MDAs) of government".

In its Country Strategy Paper for Ghana in 1998, DFID also stated that, "irrespective of the sector, donors assisting Ghana have traditionally developed projects with distinct objectives, and with their own disbursement, accounting and management arrangements. This is in part due to a lack of clear policies and weak institutions. The results have been disappointing and a lack of local ownership. 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."

These shortcomings in the donor-supported programmes have led to further development of the sector-wide approach. The introduction of the Medium-Term Expenditure Framework by the Government of Ghana, and the Comprehensive Development Framework (CDF), and the shift of several other donors from project assistance to programme/sector assistance, are in that spirit. The CDF is a new World Bank initiative, based on the idea that (i) support to a certain sector needs to be based on a long-term general vision, prepared and owned by the recipient country and sector; and (ii) it makes sense for donors to come together to finance projects and programmes in support of such a vision. Ghana has been selected by the World Bank as a pilot country for this initiative because it is relatively advanced in developing a policy framework. The follow-up programme on HSIP is currently being appraised and a first attempt is being made with this approach.

The Ministry of Roads and Transport and donor co-ordinator together prepared an "issue paper for the roads and transport sector under the CDF". This paper comprises of (i) a general vision for the development of the roads and transport sector, (ii) the identification of some key challenges and problems, and (iii) a proposal for funding the road sub-sector programme for 2000-2002. The general vision and medium-term objectives in the road sector are similar to the ones forming the basis of HSIP. Regarding the key challenges and problems the ministry mentions two issues which are related to donor co-ordination: (i) donors are still interested in specific projects and are not fully supporting the sector programme; and (ii) standardisation of donor condition for all active donors will have to be initiated to be a focal point for support of the sector.

At the time of writing of this report, discussions on the follow-up programme on HSIP were still ongoing. The first impression is that the appraisal is a slow process, which is not a surprise given that the CDF approach is still in the pilot phase. With regard to the objectives of the CDF the impressions are that:

- ▲ The proposals from the ministry and agencies (which have not been reviewed by the Evaluation Mission) were insufficiently worked out and justified to be used directly as a basis for the follow-up programme.
- ▲ Stronger ownership by the recipients, implies a less direct involvement in implementation by the World Bank (and other donors). This needs in turn a different set of working relations, of which the details are not yet worked out. The World Bank as well as other donors are in principle convinced of the need for a more sector-oriented approach and ownership by the recipients, but at the same time there is a certain hesitance that, in spite of the progress made, the required condition of “good governance” is not yet in place.
- ▲ As was the case of the appraisal of HSIP, the appraisal of the follow-up programme is also done in close consultation with other donors, but not jointly with the other donors. Synchronisation of appraisal of all donors is difficult because procedures and budget/project cycles of the donors are different. For example, Danida appraised its new programme in 1998, when the preceding Danida programme was almost completed. In this way a gap between the two programmes was avoided, but it was mid-way between the appraisal of HSIP and the follow-up programme of HSIP. Another example is DFID, which initially did not support the road sector. At a later stage it was decided that the road sector would be one of the key sectors of assistance and in 1998 a programme was appraised. This was also mid-way between the appraisal of HSIP and the follow-up programme of HSIP. Whatever the causes, the lack of synchronisation leads to a less than optimal co-ordination, and also to the situation that each of the donors has their own appraisal missions which put a heavy burden on the limited capacity of the ministry and agencies.

Donor Co-ordination Unit

Before HSIP donor co-ordination was done on an ad hoc basis. As one of the donors stated “when the World Bank Task Manager was in the country, ad hoc meetings with other donors were organised”. In the context of HSIP a Roads Programme and Donor Co-ordination Unit (DCU), funded by the European Union, has been functioning from 1997 onwards. The unit is located at the Ministry of Roads and Transport and is staffed by an expatriate, a local expert and secretarial support.

The DCU co-ordinates donor interventions in the road sector by linking up the donors with the ministry and the three road agencies, by putting together all proposals from the agencies, and by compiling information for the projection of resources and expenditure programmes for the road sub-sector. The DCU also provides support in the preparation of new projects.

After the approval of the budget for the ministry, the DCU monitors activities of the agencies by reviewing monthly and quarterly reports, going on site visits and participating in site meetings. The DCU also provides consolidated quarterly reports using the reports of the road agencies as inputs, and prepares annual review reports which serve as working document for the annual donors’ conference. Finally, it facilitates activities of donor missions from abroad.

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The DCU is in charge of organising three kinds of co-ordination meetings. Firstly, monthly meetings are held. These are attended by the representatives of the ministry and the in-country representatives of donors. These meetings are hosted by the donors on a rotational basis. However, not all donors have in-country representations and as such attendance is not optimal. This concerns, amongst others, two of the main donors: KfW has no representative in Ghana (but is unofficially represented by the team leader of the GTZ project with GHA); JBIC is represented normally by the Japanese embassy, which is less efficient because the JBIC projects are under the responsibility of the Bank's Tokyo head office. The same restrictions apply to OPEC, the African Development Bank and BADEA. The Evaluation Mission attended the meeting in February 2000 and September 2000. During these meetings the donors briefly elaborated with the ministry and with each other on the progress and problems in their projects. It was noted that not all donor reports (feasibility studies, etc.) are automatically distributed to the other donors. One of the results of this monthly meeting was that the donors were updated in this respect.

Secondly, quarterly meetings are organised. These are held at the Ministry and attended by the road agencies (headed by the chief executives), Ministry (headed by the chief director and sometimes by the minister), in-country representatives of donors, and some head office representatives of donors. At this meeting the three road agencies present the progress on the donor supported projects and a discussion is held on the particular problems in these projects as well as on the general problems in the road sector. The Evaluation Mission attended the quarterly meeting of April 2000. This was well attended, but also in this case in-country representation of donors was similar to the monthly meetings and only head office representatives of the World Bank, Danida, DFID and AFD were present⁴.

Thirdly, annual conferences are held. The first one was organised in November 1994 and subsequently each November in the period 1996 until today. Usually the annual conferences are hosted by one of the regions. These annual meetings are used to streamline the dialogue process with donors, to report on performance and achievements vis-à-vis programme targets, to review projected plans for subsequent years, and to seek additional funding. During these meetings a complete review of the performance of the road agencies and comprehensive assessment of their rolling budgets are presented.

In addition to the above mentioned, in the field of donor co-ordination the following can be noted:

- ▲ Given the size of the road sector programme, overlap of activities is remarkably low. Nevertheless, a certain degree of overlap exists (or might emerge) in DFR between the Danida and DFID projects, in GHA between the World Bank and Danida projects in the field of safety, and in GHA between the Japanese Master Plan and the World Bank zonal studies.
- ▲ Compared with other countries, a large amount information is available on the road sector (agency annual reports, donor review reports, feasibility studies, etc.). This facilitates the stakeholders and donors in their activities. At the same time it is noted that the documentation is not catalogued and stored systematically.
- ▲ The DCU is consulted by all donor appraisal, review and evaluation missions. As will be discussed in more detail in Annex VII (economic-financial focus, section on

⁴ It should be noted that those head office representatives were partly present for the evaluation.

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investment criteria) the donors use different formats, methodologies, unit rates, etc. This is partly related to the specific reporting requirements of the donors.

4 EVALUATION

4.1 Relevance

Government and donor policy

Since 1995 the economic and social development policy is guided by Vision 2020, which seeks to move Ghana into middle income country status by the year 2020. Vision 2020 consists of five basic themes, viz. human development (reduction poverty, increased access to education and health services); economic development; rural development (the majority of the poor live in rural areas); urban development (service centres for the rural hinterland) and an enabling environment. In order to facilitate general economic growth, as well as human development and rural development, Vision 2020 considers a good road network to be an important part of the general economic and social government policy. In the past decades the road network had deteriorated significantly. The principle objective in the road sector, as formulated in the Policy Letter of February 1996, is “to clear the maintenance backlog” and this is in line with the overall government policy of Vision 2020.

While the rehabilitation of an entire road network is by nature a long-term process, the achievements in the road sector during the years preceding the evaluation period were nevertheless disappointing. This was mainly attributed to poor sustainability: financially (insufficient funding for maintenance) and institutionally (road agencies reform, legal framework). In the Policy Letter of February 1996, the government rightly added the element of long term-sustainability (institutional, legal, financial and technical) to the physical objective of clearing the backlog.

The growth targets in Vision 2020 are set at a very high and ambitious level (eight percent general economic growth, on a sustained basis). In the opinion of the Evaluation Mission this makes the quantitative targets of Vision 2020 less useful for the objectives of the road sector. It can also be argued that using the economic growth projections of Vision 2020 for traffic forecast purposes would lead to an overdimensioned road network.

The main donors active in the road sector (the World Bank, Japan, Germany, Denmark, United Kingdom, France and the Netherlands), all refer to Vision 2020 as the general framework for development, and specifically to economic growth and poverty reduction. In the view of the donors the main reason to support the road sub-sector is indeed its impact on economic growth and poverty reduction. However, this general consensus on the main policy is differently worked out in projects: the choice of the type of project (trunk roads, feeder roads, or urban roads, as well as regional distribution) is usually the result of a negotiation process, taken into consideration donors’ preferences and proposals from the government:

- ▲ World Bank: assists with improving a mixture of trunk roads, feeder roads and urban roads.
- ▲ Japan (JBIC): finances rehabilitation of trunk roads, because these are essential to promote Ghana’s export competitiveness.
- ▲ United Kingdom: focuses on feeder roads, because these have a more direct link with poverty reduction.
- ▲ Germany (KfW): finances rehabilitation of trunk roads, because these roads have higher economic benefits and better prospects for sustainability.

- ▲ Denmark: most assistance is given to feeder roads, because of a more direct link with poverty reduction, but also assistance is given to trunk roads.
- ▲ European Union: assists with improving trunk roads in a specific region.
- ▲ France: in the past mainly large urban road projects (interchanges).
- ▲ Netherlands: finances a trunk road in a deprived area, with a view of accelerating rural development.

4.2 Effectiveness and sustainability

Commitment of Government of Ghana and donors

The Government of Ghana committed itself to financially support the road sub-sector in two ways, viz. through the Road Fund and through the Consolidated Fund. As mentioned in Vision 2020, the contribution of the government would be less than in the past, but still infrastructure in general, and roads in particular, was planned to be the main recipient of funding. The actual result is mixed: financing through the Road Fund (paid for by road users directly) has been achieved by and large, but financing through the Consolidated Fund (paid from the central government budget) was far short of the commitment. More details on the actual funding from national sources and on sustainability aspects can be found in Annex VIII.

The total secured funding of the donor community at the start of HSIP was by and large at the same level as in the preceding period. Actual disbursements have been less than foreseen, partly in relation to delays in preparation and implementation (especially in starting up of projects funded by Japan and Germany), partly as a result of problems with counterpart funding. This was partly compensated by financing of some other donors, which had not (yet) committed themselves to the road sector at the start of HSIP.

Programme co-ordination

HSIP is a first collaborative undertaking by the government and donors active in the road sector. Unlike previous road sector projects, the HSIP comprehensively covers the total road sector with a commitment to co-ordinate and unify the activities of all donors⁵.

HSIP is supported by all donors active in the sector. This joint effort produced a more realistic programme and facilitated the adoption of key policy reforms and institutional changes intended to be make the delivery of road infrastructure services more sustainable and responsive to the needs of users. The main donors have confirmed that HSIP is the framework of all donor activities.

After HSIP was prepared in 1995/1996, the MRT and the DCU started to prepare each year a rolling plan for the total road sector, together with a projection of the required funding and potential sources of finances.

Regarding the comments of the government that donors are still interested in specific projects and standardisation of donor conditions is needed, the Evaluation Mission is of the opinion that in Ghana already quite some progress has been made to come to a

⁵ One has to recognise the ambiguity which prevailed at preparation of the HSIP. There are in fact two HSIPs: The GoG programme and the World Bank-financed part thereof. World Bank's financing only touched MRT and GHA, not DFR and DUR. During implementation this led to a distancing of these agencies from decisions taken at HSIP level.

comprehensive and joint approach (the HSIP programme and conditions are supported by all donors, there is a constant exchange of information and views, facilitated by regular meetings between donors and the road sector), but further improvement is still possible.

Donor Co-ordination Unit

The establishment of the DCU in 1996 is a step in the direction of better donor co-ordination and the Evaluation Mission has the impression that it has been institutionalised significantly: the ministry, agencies and donors recognise the usefulness of the DCU activities, especially the monthly, quarterly and annual meetings, but also activities in the field of planning and assistance to missions, etc. In addition, the responsible official in the ministry (Director of Planning) and the local expert have a long experience in this field and are well qualified.

The exchange of information has been improved through the monthly, quarterly and annual meetings, although the effectiveness of the monthly and quarterly meetings is somewhat reduced because not all donors have in-country representatives and not all representatives of donors' headquarters are able to participate. These meetings are effectively used for formal and informal exchange of information (i) amongst the donors and (ii) between the donors and the ministry. It should be noted that representatives of those donors not participating in the monthly and quarterly meetings also visit Ghana (although not on a regular basis) and it is regretted that it appears to be difficult to plan these visits in conjunction with these donor meetings, thus undermining their objectives, as well as requiring the Ghanaian officials to be available at other times.

The DCU is also involved in appraisal and selection of donor projects and given the sized of the total road programme there are remarkably few overlaps. Nevertheless, a few overlaps exists, or might arise, and the DCU could play a more pro-active role in this respect. Also the agencies themselves could, of course, be more attentive.

The Evaluation Mission is impressed by the vast amount and high quality of information available on the road sector (agency annual reports, donor review reports, feasibility studies, etc.). At the same time it is noted that donor reports are not always systematically distributed amongst the donors and that documentation is not catalogued and stored systematically.

In the short and medium-term donor support to the road sub-sector will remain necessary and as such the need for donor co-ordination will also continue. In this respect it can be noted that the workload of the staff of the ministry involved in donor co-ordination is at this moment already too high and an internal budget for continuation of the donor co-ordination is not available. This reduces the sustainability of donor co-ordination after the completion of the EU-funded project

4.3 Efficiency

Programme co-ordination in the road sub-sector is based on the common framework of HSIP, but the donors still run their own programmes. E.g. all donors have their own appraisal, review and evaluation procedures and missions, leading to a high cost of the donor side and a high burden to the staff of the ministry and road agencies. In this respect HSIP is still not efficient.

Donor co-ordination is facilitated by the DCU in the Ministry of Roads and Transport. This DCU is functioning in an efficient way, with monthly, quarterly and annual meetings, good annual review reports, and day-to-day assistance to the donors in the field of appraisal, review and implementation. The donor co-ordination compares favourably with donor co-ordination in other countries and it uses a right mixture of expatriate and local expertise.

4.4 Impact

Savings in Vehicle Operating Costs

As mentioned in all appraisal documents and feasibility studies, the main impact of the road sub-sector interventions is a reduction of the Vehicle Operating Costs (VOCs), which in turn are expected to contribute to the overall objectives of the road sector interventions, viz. social and economic development of Ghana. However, a systematic assessment of the overall savings in VOCs, caused by an improvement in the road condition mix, is not prepared by the ministry/donors and because of insufficient data the Evaluation Mission could not make its own calculations.

An alternative assessment is to analyse the results of economic feasibility studies carried out in virtually all donor supported projects. In these feasibility studies the savings in VOCs are compared with the costs of the projects. In the following a selection of these feasibility studies, and their results in terms of Economic Rate of Return (ERR), is summarised:

- ▲ HSIP: the cost-weighted ERR of the overall programme is 35 percent. Looking at the broad categories of the interventions it is calculated that rehabilitation and periodic maintenance has significantly higher ERRs than reconstruction projects.
- ▲ Japan (SASP): two trunk roads with ERR of respectively 24 and 18 percent.
- ▲ Germany: several variants of the Tema – Akosombo road, all with an ERR of higher than 30 percent.
- ▲ European Union (Wilbur Smith): pre-feasibility study for trunk roads in south-west of Ghana, investigating a range of projects, and yielding ERRs between 15 and 289 percent.
- ▲ NFRMP: feasibility of a large number of feeder roads, with an ERR between 10 and 75 percent.
- ▲ Netherlands: four sections of the road between Kumasi and Yeji, of which the last two sections have an ERR of respectively higher than 20 percent and 4.5 percent.

From this overview it can be concluded that, with a few exceptions, the road projects and programmes considered have a robust ERR and thus that in economic terms the projects are viable. This implies that they are expected to reduce transport costs considerably.

Most donors systematically prepare ex-post evaluations of its projects (and assesses thus whether the anticipated savings in VOCs have been achieved). Ex-post evaluations for the projects executed in the period 1996-2000 have not been prepared yet, but the ex-post evaluation of the preceding Transport Rehabilitation Project II (World Bank) concluded that:

- (i) The overall ERR of the road component was much lower than calculated at appraisal (ex-post: 18 percent, versus ex-ante: 30 percent).

- (ii) In spite of a considerable higher than projected traffic level, and thus higher than expected savings in VOCs, the costs of the projects had increased even more, with the overall result that the ex-post ERR was lower than the ex-ante ERR.

Although it is not possible to give an overall impact assessment of the total road improvement programme, the overall conclusion from these feasibility studies is that the road improvement projects have a positive impact on VOCs.

Poverty reduction and gender issues

The ToR of the Evaluation Mission require due assessment of the wider objectives: "...impact of the sub-sector interventions on poverty reduction" and "...gender impact of sub-sector interventions." These issues are considered particularly relevant when dealing with impacts of rural transport import.

Within the framework of the National Feeder Road Rehabilitation and Maintenance Programme (NFRMP), some "Socio-Economic Impact Monitoring and Evaluation Studies" on the impacts of feeder road improvements have been carried out. Results have been summarised by the World Bank (1999) as follows:

- ▲ Transport services are significantly more frequent and cheaper in the corridors where the feeder roads were rehabilitated than in areas where no improvements were made.
- ▲ Farmers in improved corridors have reduced their use of intermediaries to sell their harvest and are getting better prices for their crops.
- ▲ Shopkeepers in 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 are improved.

The Evaluation Mission made some additional efforts to estimate the impact of feeder road improvement in Ghana during the past decade through (i) a literature survey and (ii) its own research (see for details Appendix A). The results of the literature survey, confirmed by its own research, supported the following general conclusions:

- ▲ The expected impacts of NFRMP proved significant in many places.
- ▲ The area cultivated with traditional crops has increased.
- ▲ The average yield or land productivity has increased.
- ▲ Marketable surpluses of crops have increased.
- ▲ Diversification of crops has increased.
- ▲ The access of rural communities to health services has improved.
- ▲ The need for farmers to sell their produce to intermediaries has decreased.

The available socio-economic studies generally 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. Road improvement in itself is, however, not sufficient to maximise socio-economic impact. Complementary factors are, amongst others, agricultural credit, finance for transport investments, improved farm technology, processing and storage facilities, as well as the long-term maintenance of feeder roads (and not irregular maintenance). This underlines that specific policies for rural/regional development and poverty alleviation need a co-ordinated planning of the involved parties (e.g. Ministry of Agriculture, Ministry of Local Government, Ministry of Roads and Transport, etc.). So far this planning process has not been formalised, and as argued in Annex VIII, road planning and prioritisation take these aspects insufficiently into consideration.

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In addition, the available studies do not allow differentiation among regions with different poverty profiles. 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 on the question whether feeder road improvements in these areas will have a larger impact on poverty alleviation than feeder road improvements in other parts of the country.

The results of the available studies in Ghana compare positively to the general conclusions drawn from a wide range of evaluation studies carried out in the Sub-Saharan Africa area during the eighties and early nineties. These studies suggest that many ex-ante feasibility studies of feeder road improvements proved much too optimistic in estimations of additional farm output generated by road rehabilitation. For example, the survey by Riverson and Carapetis (1991) shows that benefits from feeder road improvement primarily accrue to passengers and boost household consumption and welfare, rather than farm output.

Another excellent state-of-the-art report on rural transport is the “Approach Paper”: *The Provision of Rural Transport services*, Ellis and Hine (SSATP Working Paper # 37, April 1998), yielding similar conclusions: “the rationale behind rural road building and improvements has been that better quality infrastructure will induce higher traffic flows, improved access and incentives to increase agriculture production through lower VOCs. Unfortunately the evidence suggests that despite large investment in rural road building the subsequent increases in traffic and economic activity have not always materialised. The relationships between improved infrastructure and the provision of vehicle services have not been fully understood resulting in over-emphasis on infrastructure and under-emphasis on the vehicle services themselves”.

5 LESSONS LEARNED

Programme co-ordination

There is a clear tendency amongst donors to offer more programme and sector assistance. Although not yet perfect, HSIP was a step forwards in programme co-ordination: it involved all three road agencies (albeit not yet in a fully integrated way), was supported by all donors active in the sector (although not yet jointly identified and appraised) and aimed to design common procedures and programmes (not realised).

This development is gaining importance, as is clearly demonstrated in the pilot project of the Comprehensive Development Framework, which explicitly aims at more ownership and better donor co-ordination. This discussion on project versus programme/sector assistance in fact touches upon the issue of whether the conditions are in place. From this evaluation it is concluded that in the road sub-sector in Ghana considerable progress has been made, but that not all developments have yet led to a sustainable situation. In the next annexes it will, for example, be argued that the financing of the road sub-sector interventions has been improved significantly, but also that the arrears problem is a left over from the sector and that the Road Fund has yet to prove its political independence and effectiveness over a longer period. Also, the prioritisation systems used in the road agencies are being developed/implemented but are not yet working optimally.

This discussion also touches upon the issue raised by the Ministry that the donors are still interested in their own priorities, and not in the priorities set by the Ministry. After HSIP was prepared in 1995/1996, the Ministry of Transport and the DCU started to prepare each year a rolling plan for the total road sector, together with a projection of the required funding and potential sources of finances. This is an important step in the direction of increased ownership by the Ministry and agencies, but further strengthening of the planning capacity and prioritisation systems of the ministry and road agencies is needed (see also Annex VIII): better plans prepared by the ministry and road agencies put them in a better position vis-à-vis the various donors.

One of the issues mentioned by the World Bank in this respect is the need for a comprehensive set of indicators which should make it possible to give more responsibility to the stakeholders, while at the same time the donor(s) would be fully informed on progress made. There is a vast amount of information and data collected, but it needs further systematisation and refinement to be used for this purpose.

The multiple of appraisal procedures and missions put a heavy burden on the capacity of the ministry and agencies. Synchronisation of these procedures and joint appraisal missions are first steps in the direction of common arrangements and it is recommended that the DCU will actively promote this. In this respect the "joint evaluation of the road sub-sector programme 1996-2000" can serve as a first example.

Donor Co-ordination Unit

The DCU plays a useful role for the donors in the appraisal and review of their projects and for the co-ordination of their activities. Nevertheless, a few lessons learnt are:

- ▲ The DCU is usually consulted by donors during the appraisal of projects, but a more intensive participation in these appraisals would improve the quality as well as reduce the need for technical assistance. In this respect it would be useful to develop a

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common approach/format and data base, which could become obligatory for all donors (including for example standard VOCs, costs of capital, etc.).

- ▲ A more pro-active involvement of the DCU would also help to avoid the few (potential) overlaps of donor activities.
- ▲ It would be helpful to stakeholders and donors to systematically catalogue and store the vast amount of relevant reports and documents. One of the possibilities could be to set up a website on the road sector, containing all information and reports (agencies, donors), with different access codes (making confidential information available only to selected users).

This would presumably need more staff of the DCU (and hence higher costs), but in the long-run will be cost-effective.

Impact studies

Ex-post evaluations, especially of the more controversial projects, are not carried out in a systematic way by the Ministry and road agencies, and as such there is insufficient information on whether the anticipated traffic levels have been achieved, the projected transport costs savings have been realised and the planned costs levels have been realistic.

More systematic evaluations of the road projects would give more insight in the impact of road projects on the general economic and social development objectives, as well as improving the quality of future feasibility studies, detail designs and budgets (see also Annex 9, Contract Management). In order to prevent each agency (and donor) developing its own format, it is recommended that the DCU, in close co-operation with the road agencies, prepares a single format for these evaluations, preferably based on the methodology, unit costs, etc. also recommended to be made by the DCU for streamlining the appraisal studies (see above).

Socio-economic and gender impact studies are a necessary tool for assessing the impact of road improvement on poverty alleviation especially in the rural areas, which is one of the main objectives of Vision 2020, and they should be set up on a more systematic basis. In this context can be mentioned the preparation of poverty profiles (with household surveys), research over a longer period after completion of the project, and the comparison of impact in regions with different poverty profiles.

Appendix A Impact on poverty reduction and gender

A. Road improvement and poverty reduction

Introduction

It is generally recognised that improved access and lower transport costs can have a positive impact on rural poverty. This applies to both trunk roads and feeder roads, but there is a more direct link between rural poverty and feeder roads and hence, the emphasis of the impact studies has been on rural roads programmes. Several studies have been carried out to assess the socio-economic impact of the rehabilitated roads on the rural communities (Ghanexim, 1993 and 1998; United Consultancy Ltd, 1998; Rural Transport Services and Gender in Ghana, 1999, etc.). The impact studies used the “before and after” approach. Before the implementation of the feeder road rehabilitation programme, baseline studies were conducted on the selected roads in order to provide a basis for comparing the socio-economic and other changes that would occur as a result of road improvement. The objective of this report is to synthesise the findings of the impact studies. The qualitative and quantitative information which the impact studies provided was supplemented with a rapid appraisal survey of selected feeder roads and communities in Cape Coast, Bekwai and Sunyani road areas undertaken by the Evaluation Mission in the period 15-20 May 2000. A check list of questions prepared for the rapid appraisal survey is attached at the end of the report.

Ghana’s vision of development and poverty reduction

Ghana’s vision and goal of development since 1996 is to become a middle income country by the year 2020 (Ghana Vision 2020). Using income as a measure, the average income per capita is expected to increase from US\$ 390 in the mid-1990s to about US\$ 4,000 in 2020. Vision 2020 should lead to a drastic reduction in poverty in the country.

Poverty in Ghana is deep and widespread, and has dimensions such as geography, demography and economic activity of the economically active population. From the standpoint of geography, poverty is more prevalent in the rural than urban areas, making it a rural phenomenon: according to the report “Poverty trends in Ghana (1999)” the incidence of rural poverty (the population below the estimated poverty line for the country) dropped from 62.4 percent in 1991/92 to 51.6 percent in 1998/99, but this was still much higher than in urban areas (27.5 percent in 1991/92 and 22.8 percent in 1998/99). The rural poverty is manifested in low incomes, malnutrition, ill-health, illiteracy and insecurity; a feeling of powerlessness and isolation among the rural population and lack of opportunities to improve these and other factors. In view of this, the Policy Letter of February 1996 explicitly mentions the aim of rural development, which is to be achieved by the creation of an enabling environment, in particular by the provision of social infrastructure and integrating the rural sector effectively into the mainstream of the national economy.

Road improvement and impact assessment variables

Already, before 1992, the Highway Sector Investment Programme (HSIP) has been initiated partly to restore and maintain the feeder roads in the country. The National Feeder Roads Rehabilitation and Maintenance Programme (NFRRMP) was implemented over the period 1992- 2000 in two phases (1992-1996 and 1996-present) and supported by the World Bank, Denmark, United Kingdom, Japan and USA). The main objective

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was to remove the physical constraints in feeder road infrastructure with the view to stimulating agricultural production (the main economic activity in the rural areas) and enhancing the opportunities for effective and efficient evacuation of farm produce. The expected outcomes include increased agricultural production and productivity, increased incomes of producers and improved welfare of the proportionally higher rural population in the country.

The variables considered in the socio-economic impact assessments can be grouped into four as follows:

(i) Variables related to farm production

- ▲ Land area cultivated.
- ▲ Land productivity.
- ▲ Volume of output.
- ▲ Extension service.
- ▲ Availability and use of improved inputs.
- ▲ Input prices.
- ▲ Household farm output and focus of production.
- ▲ Changes in crops cultivated.
- ▲ Youth in agriculture.

(ii) Variables related to farm produce marketing

- ▲ Volume of marketable surplus.
- ▲ Place of sale of farm produce.
- ▲ Availability of buyers.
- ▲ Losses in marketing.
- ▲ Bargaining position of producers.
- ▲ Availability of market information.
- ▲ Producer prices.
- ▲ Inward flow of food during off-season.

(iii) Variables related to rural transport

- ▲ Availability of transport.
- ▲ Changes in vehicles on road.
- ▲ Condition and variety of vehicles.
- ▲ Travel time.
- ▲ Waiting time.
- ▲ Transport charges.

(iv) Variables related to household consumption and welfare

- ▲ Availability of household manufactured consumables.
- ▲ Access to health services.
- ▲ Availability of social marketing services.
- ▲ Social visits and integration.
- ▲ Migration (in- and out-flows).
- ▲ Entertainment opportunities.
- ▲ Mail and newspaper delivery.
- ▲ Activities of non-governmental organisations.

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All the variables can be linked in various ways with the net effect of reducing poverty and enhancing welfare of rural households. The extent that some variables express themselves in terms of impact is a function of other variables and also of time. Hypothetically, the longer the period after the improvement of a feeder road, assuming that it is maintained in good condition, the more the impact shows. However, the time lag may be shorter for some variables than others.

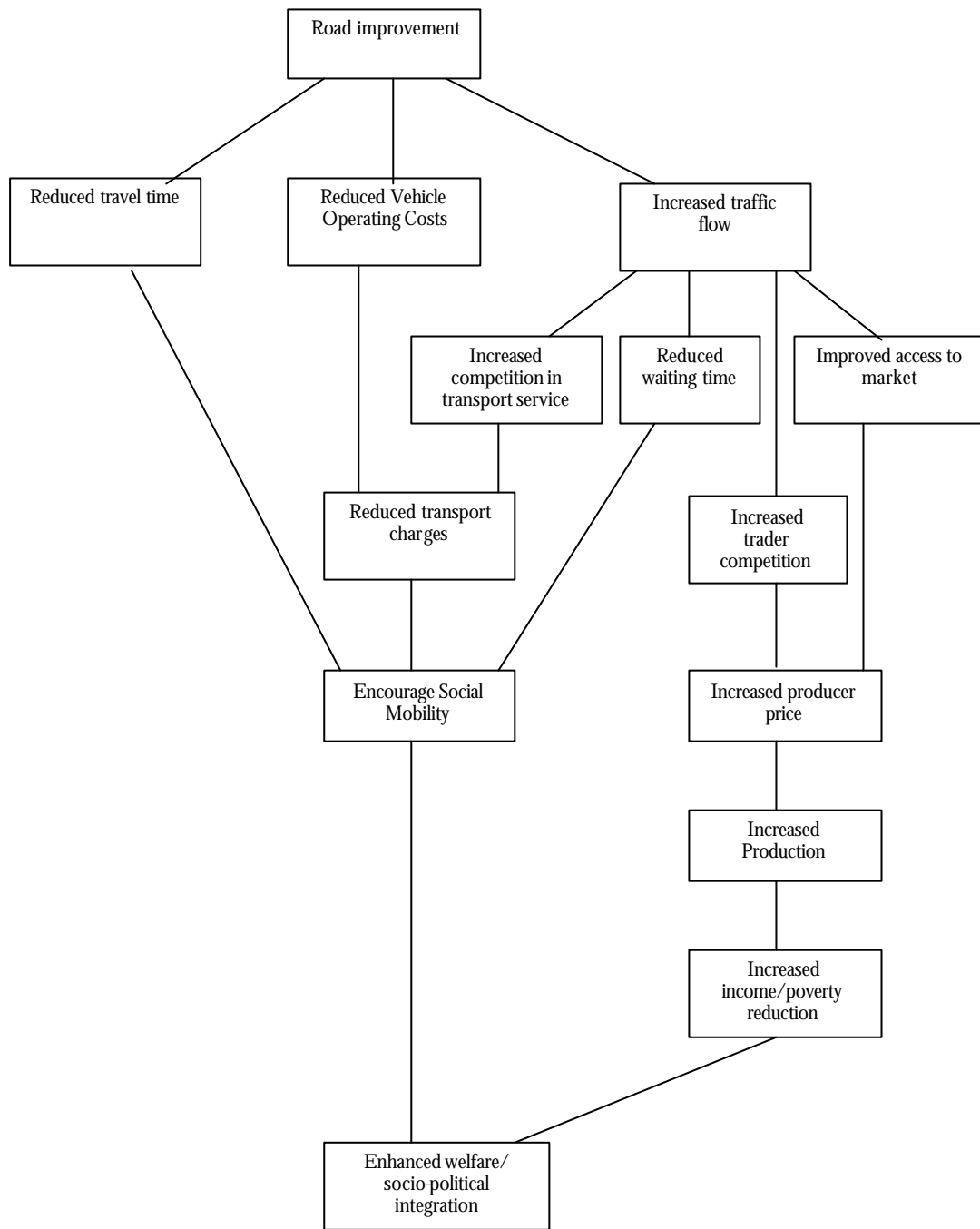
The linkage between feeder road improvement and poverty reduction is illustrated in Figures 1a and 1b, the separation of the figure is to facilitate presentation. The improvement of a feeder road fundamentally results in improved accessibility to rural communities, increased vehicular traffic flow (competition in transport service), reduced travel time and reduced vehicle operating and maintenance costs. These stimulate several activities in the rural communities. The increased traffic flow reduces waiting time for transport, travel time and transport charges. These accumulate to encourage mobility of goods and people to and from the rural communities, result in social interaction and integration and social welfare of the rural population. The increased traffic flow, reduced waiting and travel times should also result in farmers cultivating new and, often relatively more perishable crops which tend to be high value products.

The improved accessibility to rural communities due to improved feeder roads should result in increased flow of market information, farm inputs, household goods, itinerant traders, etc. to the villages. These should enhance competition among traders and the bargaining position of rural dwellers. The result should be increased producer prices on one hand and reduced input prices on the other hand, and both should theoretically provide incentives for increased farm output. Easy access to local and distant markets for farm produce due to improved condition of feeder roads would also enable farmers to get better prices for their produce, provide incentives for increased production and thereby increase their incomes and reduce the incidence of poverty among the rural population.

Easy accessibility to rural farming communities would encourage extension officers to make frequent visits and for farmers to increase their knowledge and use of improved technology to increase land and labour productivity. Increased rural incomes and prosperity in farming and other rural based enterprises should encourage the youth to remain in the rural communities rather than migrating to urban areas for jobs which are very difficult to find and therefore many of them remaining unemployed for a long time.

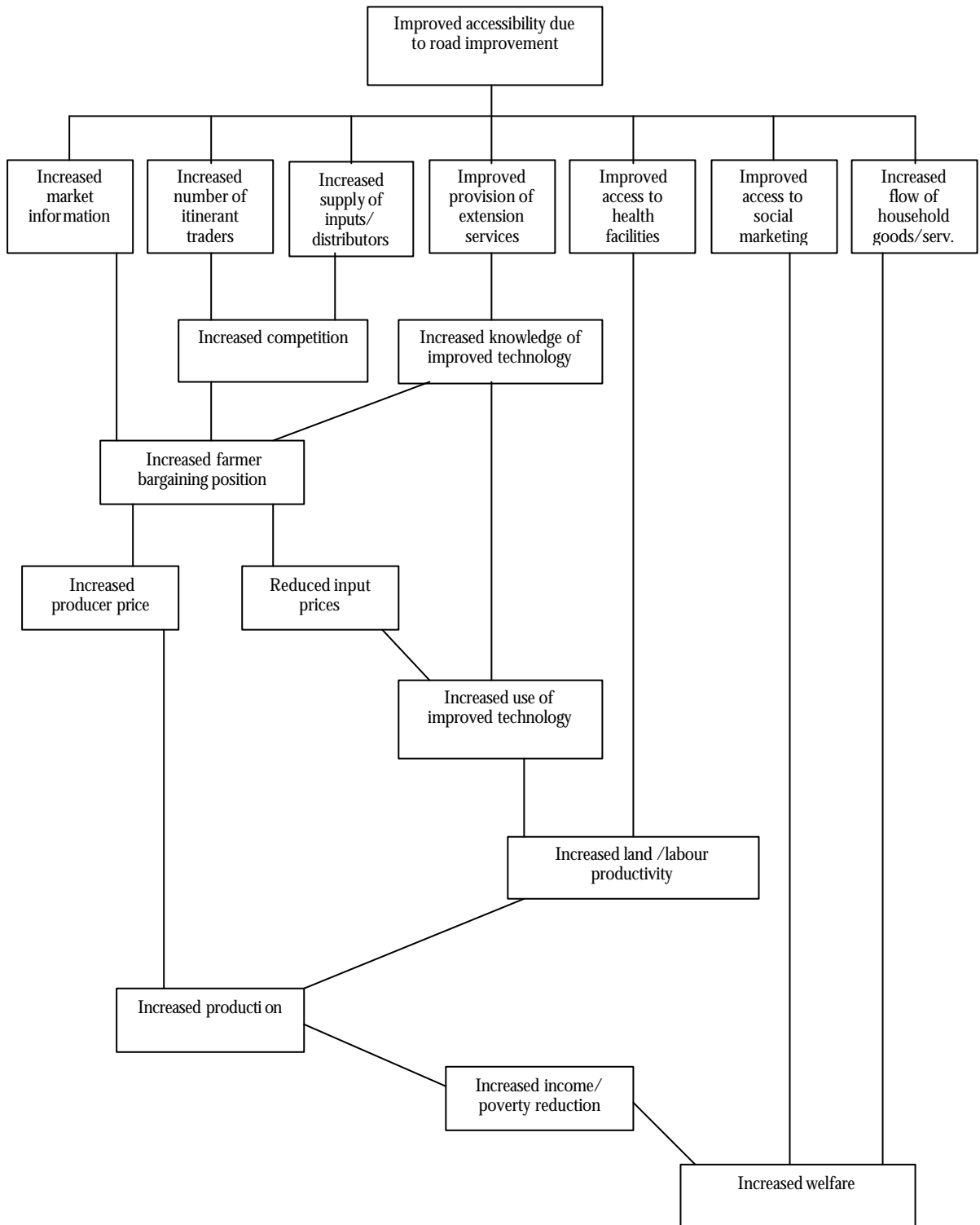
From social perspective, improved accessibility due to improvement in feeder roads enhances access to better health facilities and social marketing services, both in the long run should enhance productivity of the economically active rural population.

Figure 1a Linkage Between Road Improvement and Social Mobility/Integration



Source: Developed by V.K. Nyanteng, ISEER, University of Ghana, Legon

Figure 1b Linkage between improved accessibility and poverty reduction / welfare of rural population



Source: Developed by V.K. Nyanteng, ISEER, University of Ghana, Legon

Findings of impact assessments

(i) Agricultural production

Land area cultivated

There is evidence that the land area cultivated with major staple crops has increased in many communities located along rehabilitated feeder roads. In the Cape Coast and Sunyani road areas and for the period 1995 to 1997, for example, land cultivated under maize increased on average by about 37%. However, in the Bekwai road area, the land cultivated under maize declined marginally by about 2%. This can be attributed to shifting emphasis to the cultivation of other crops as a result of the road improvement. In all the three road areas, the land cultivated under cassava increased in a range of 8% and 133%, cocoa increased in a range of 33% and 109%, plantain in a range of 62% and 296%, eggs in a range of 218% and 836% and tomatoes in a range of 99% to 4,470%. The information gathered in the rapid appraisal survey suggests that improvement in feeder roads promoted cultivation of relatively more perishable crops, particularly vegetables such as tomatoes and eggs.

Availability, use and prices of farm inputs

The improved inputs used in agricultural production in the country include chemical fertilisers, certified seeds and agro-chemicals for the control of pests and diseases. The public monopoly in the distribution of these inputs was abolished in 1990 along with subsidies on prices, with the assumption that competition among private distributors will keep prices down and that inputs will reach the farming communities in increased quantities, thereby encouraging usage. The competition among the private distributors should be relatively high where roads to the farming communities are good, and low where the roads are bad.

The available information shows that where feeder roads have been rehabilitated and are in good condition, the sale of improved farm inputs is still not taken to the farming communities but stops at the district capitals and large towns. For example, farmers in Abuakwa buy fertilisers at Asikuma, those from Apirade buy at Akim Oda; those from Ankaase, Apau and Ayaase buy at Bekwai and those from Mansin buy at Bechem, etc. However, the rehabilitated feeder roads have facilitated the transportation of the fertilisers by farmers themselves to their farming communities and farms for application. Indications are that the use of fertilisers has increased in some villages, particularly, for the cultivation of vegetables (tomatoes and garden eggs) and to a lesser extent maize.

Contrary to the assumption of reduced input prices under private distribution, the nominal prices of improved inputs have increased quite substantially since the subsidies were abolished in 1990. This is partly due to macroeconomic variables such as inflation and exchange rates and partly due to the low level of competition as very few companies are distributing fertilisers and at limited places in the country.

Land productivity

The impact of feeder road improvement on land productivity, as measured by crop yield per hectare, has not been consistent as the latter is affected by several other variables such as rainfall, quality of seed used, pests and diseases, fertiliser application, husbandry practices, etc. However, the data available show that there have been increases in the yield per hectare of some crops following the rehabilitation of some feeder roads in the

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Bekwai, Cape Coast and Sunyani road areas. The increase in the yield per hectare of maize increased in a range of 11% and 36%, cocoa in a range of 11% and 329% , tomatoes in a range of 94% and 336% and garden eggs in a range of 71% and 1,339%. The increase in the yield of maize, tomatoes and garden eggs may be partly due to the use of fertilisers to enrich the soil as indicated earlier.

Volume of output

In many instances, aggregate volume of output have increased in farming communities located along rehabilitated feeder roads. However, there are a few cases where the aggregate output of some crops declined. This may be due to shifting interest in crops cultivated due to marketing opportunities and better prices as a result of improved feeder road condition.

Major crops cultivated

Improvement of feeder roads is expected to encourage farmers to cultivate new crops, in particular those that are relatively more perishable and risky to grow when the roads were bad and therefore, more difficult to transport to the market or to attract itinerant traders to come and buy. Where the environmental condition is favourable, improved road condition has encouraged farmers to introduce or increase the extent of vegetable cultivation among the crops grown on a commercial basis. As mentioned earlier, these are the crops for which fertiliser consumption has increased, yields per hectare enhanced, cultivation extended and the number of farmers growing them increased.

Youth in agriculture

The average age of farmers in the country is high (over 50 years) because the young are not adequately replacing the ageing farm population. Farming has not provided adequate incentives for youth as occupation and hence, they have been migrating to the urban areas in search of jobs (which are not easy to find and many of them end up as unemployed). Several attempts to get the young to “ go back to the land” have not been successful. The young are, however, becoming interested in cultivating relatively high value vegetable crops, particularly, in the dry season when the crops fetch high prices. The improvement of feeder roads is offering them the opportunity to grow these vegetables as they are able to move the produce to market or itinerant traders are able to come to the farming communities and villages to buy. In the rapid appraisal survey, the youth were mentioned to be cultivating mainly tomatoes and garden eggs under controlled water condition and using fertilisers.

Extension service

The farmer-extension officer ratio in the country is very high though many farmers, particularly those in communities along bad feeder roads, hardly receive extension services. Largely as a result of the improvement of feeder roads, all the communities visited during the rapid appraisal survey indicated that they were being visited by extension officers and quite regularly.

(ii) Marketing of farm produce

Improvement in feeder road condition makes significant contributions to marketing of farm produce in several ways, such as increased marketable surplus, reduced quantitative and qualitative losses in the marketing system, increased number of itinerant traders,

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enhanced competition among buyers, and bargaining position of farmers vis-à-vis traders, better prices offered to producers, and inward flow of food to farming communities during the off-seasons.

Marketable surplus

Farmers shrink their enterprises to subsistence levels when opportunities do not exist to market surpluses, such as when the feeder road linking a farming community to the consuming centres is in a bad condition. Thus, when a feeder road is rehabilitated and results in increased agricultural production, the marketable surplus increases accordingly.

Produce marketing outlets and buyers

Farmers have opportunities to sell their produce at several distinct places, mainly on the farm, at the home village, in a local market (usually a district capital) and other markets in large nearby towns and cities. It is envisaged that farmers receive better prices when selling in local or distant markets and that they therefore sell their produce on the local farm or village when they find it difficult to transport it to a market as a result of bad roads. The evidence from the rapid appraisal survey and others indicate something different. When roads are good, many itinerant traders go to the farming communities and the farms to buy the produce. The competition among the itinerant traders pushes up the farm gate prices. When a road is poor, it is the itinerant traders who stop going to the villages and farms, and the farmers are then compelled to transport their produce (by head load) to sell in the markets nearby. This limits the opportunities of farmers to sell their produce only on market days, which may only be weekly.

Produce losses during marketing

When a feeder road is in a bad condition, it may cause quantitative and qualitative losses, particularly where the crops are perishable and easily bruised in the case of breakdown of vehicles and potholes. However, the rapid appraisal survey showed that before the improvement of the feeder roads such qualitative and quantitative losses in the marketing chain were not noticeable problems.

Availability of market information

The availability of market information is essential for farmers bargaining position vis-à-vis traders for better prices. The improvement of feeder roads have had no significant impact on availability of market information to farmers.

Bargaining position, buyers competition and producer prices

It is envisaged that farmers are offered better prices when they sell their produce in organised market places than elsewhere. However, as indicated earlier, farmers located along good feeder roads sell their produce mainly at home and on their farms. This is because itinerant traders go to those places to buy the produce. The situation is facilitated by improvement in feeder roads. When farmers sell at these places, they are disadvantaged in bargaining position and therefore receive relatively lower prices. However, due to the bulkiness of the produce, high transport cost and not knowing the market condition with regard to supply, demand and prices, many of the farmers accept to sell in their villages and farms. In addition, the farmers believe that increased competition among itinerant traders help to push up the farm-gate prices.

Flow of food into farming communities in the off-season

In many farming communities, some staple food items produced in the communities become very scarce and therefore more expensive than in the big towns and cities. When this happens, it is postulated that itinerant traders would move food from the cities and big towns to the farming communities. This does not happen and this is largely attributed to the bad feeder roads. However, when feeder roads have been rehabilitated, the situation has remained much the same the reason for this being attributed to low demand in the farming communities.

(iii) Road transport

Improvement in a feeder road is expected to enhance availability of rural transport, reduce travel and waiting times and freight and passenger charges. There are indications that these impacts have been made along the feeder roads that have been improved.

Availability of transport

The evidence is overwhelming that availability of transport has increased on rehabilitated feeder roads. When a road is seriously deteriorated vehicles usually plying on it have simply stopped using it. For example, Fomena-Ayaase road in the Bekwai road area. In many instances the vehicles on this rehabilitated roads are very old taxis, which are used for both passengers and goods. They are usually overloaded. The vehicles plying on rehabilitated roads are relatively more frequent (but still very few) where there are many villages along the road. Also the number is considerably higher (4-5 times) on market days than on ordinary days.

Travel time

An area where considerable impact has been made following rehabilitation of feeder roads is vehicle travel time. In many instances, travel time has been reduced to one-third to one-half of that before road rehabilitation.

Waiting time for transport

The increased number of vehicles plying rehabilitated feeder roads also reduces waiting times for transport. However, in some cases waiting times can still be as long as 3-4 hours. This is because vehicles are still few (2-3 in most cases) and when they get to one end of the road, they wait till they are fully loaded before they set off again. Consequently, when one happens to be somewhere along the road, it becomes difficult to get transport.

Transport charges

Among the impacts envisaged when a feeder road is rehabilitated is reduction in transport charges of both goods and passengers. In many cases the transport charges have been reduced and in other instances the charges have remained the same or have gone up. The contributory factors included increased prices of fuel and vehicle spare parts and the general price level in the country (inflation).

(iv) Household consumption and welfare

Feeder roads in good condition have been linked with improved household welfare and consumption of goods and services, such as availability of consumables, access to health facilities and social marketing services, social visits and integration, recreational facilities, entertainment, etc.

Availability of household manufactured consumables

In the farming communities household manufactured consumables, such as cooking utensils, shoes, textiles, etc. are usually not available. They are usually available in the local markets and mostly on market days. It is envisaged that improvement in the condition of feeder roads would encourage traders to move such manufactured consumables to the farming communities to sell. The indications are that the rehabilitation of feeder roads has not made any impact in this direction.

Access to health services

Access to health services, particularly in emergency situations, is a serious problem faced by the rural population, particularly, those located along bad feeder roads. When people become seriously sick, they have to be carried by others over long distances in order to reach health facilities for medical attention. The rehabilitation of feeder roads is expected to facilitate access of sick people to medical attention. This impact has been felt in many of the rural communities located along rehabilitated feeder roads. On rehabilitated feeder roads, health workers have been able to resume regular visits to farming communities, usually once a month on specific days. The rehabilitation of feeder roads has also facilitated family planning education and methods of birth control among the rural population.

Social, political and economic integration

The improvement in the condition of feeder roads has enabled the rural population to exchange frequent visits with relations and others living elsewhere. This has enhanced social integration. It has also improved mail and newspaper delivery, thereby increasing the awareness of the rural population of what is going on in the country and elsewhere in the world.

Migration

Increasing rural-urban migration, particularly, of the educated youth is a problem that has engaged the attention of the government for a long time. The migration has been attributed largely to farming not being an attractive occupation. However, as noted earlier, the rehabilitation of feeder roads has provided opportunities for the cultivation of vegetables, which has attracted the youth and thereby reduced the extent of the rural-urban migration in the country.

Other observed impacts of rehabilitated feeder roads

Other impacts observed following rehabilitation of feeder roads include:

- ▲ Establishment of cocoa buying centres in some villages. For example, Kuapa Kokoo Limited has opened a buying centre at Asomdwee on the Nyamedom-Asomdwee road; and CASHPRO has opened a buying centre at Dotom on the Menang Junction-Menang-Dotom road which has been rehabilitated.

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- ▲ Formation of co-operative societies following expansion of some economic activities. E.g. Tomato Producers Co-operative at Dominase on the Dominace Junction-Dominase road and Akpeteshie Distillers Co-operative formed at Asomdwee after the rehabilitation of the Nyamedom-Asomdwee road.
- ▲ Entertainment providers touring farming communities, e.g. cultural troupes, dance bands, video operators, etc.
- ▲ Public transport companies extending services to rural communities, e.g. Omnibus Services Authority (OSA) operating along the Nyamedom-Mensukwa road after it has been rehabilitated.
- ▲ Creation of rural markets. E.g. Santase on the Susanho-Santase road with market day on Friday.
- ▲ Engagement in petty trading. E.g.. at Akyereboanda on the Wuruyie-Kotwa road and Asomdwee on the Nyamedom-Asomdwee road.
- ▲ Non-governmental organisations (NGOs) extending their activities to farming communities that hitherto could not reached by them.

Conclusions

The conclusions are partly based on findings from the socio-economic impact studies previously carried out by other researchers and the rapid appraisal survey. The expected impacts of the NFRMP have been achieved to some extent in many of the places covered. However, impacts at higher levels and sustainability of many of the variables for impact measurement would depend on maintaining the rehabilitated roads in good condition over relatively longer periods.

In the meantime the following positive impacts with regard to agricultural production have been achieved. The areas of traditional crops cultivated in many of the communities have expanded together with increases in yield and land productivity. The marketable surpluses of the crops produced have thus also increased. In many cases there has been diversification of crops produced particularly vegetables (tomatoes, eggs and so on) which the young have become interested in producing.

The improvement in the feeder roads has increased access of rural communities to health facilities which are normally located at a distance. Improved road conditions have also encouraged agricultural extension agents and social and health workers to visit the village communities more frequently.

Some reports have suggested that improved transport services as a result of the improved condition of feeder roads have decreased the need for farmers to sell their produce to an intermediary. The opposite seems to be the case. When the condition of a feeder road is improved, itinerant traders tend to go directly to villages and farms to buy directly from the farmers. When farmers are compelled to head load their produce to markets, this is where they sell to intermediaries who turn round to sell to itinerant traders buying in the same market.

All available reports indicate that the number of vehicles plying on rehabilitated roads tends to increase. However, in many cases, the increase has been from nothing or one to a few, usually 2-3. Thus, the total availability of transport on many of the rehabilitated roads is still very low with some far reaching consequences.

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In some cases where the feeder roads have been rehabilitated, the transport charges have either remained the same or gone up instead of being reduced. Opinion leaders, drivers, and others have attributed this to increased operating costs of vehicles (increased fuel and spare parts prices, etc.) and general high inflation in the country. However, the few transport services on rehabilitated roads suggests a situation of near monopoly pricing. The charges on rehabilitated roads, even where they have been reduced, are still quite high due to the use of inappropriate saloon cars (taxis) to move both people and bulky/heavy farm produce. The economies of scale is the issue here. On many of the rehabilitated feeder roads there is not enough flexibility in the vehicles plying on them. The taxis and in some cases small buses are usually all that is available to transport both people and farm produce.

The few rural rich do not invest in vehicles to ply rehabilitated feeder roads but to work the good roads linking large rural towns and district capitals to urban centres. This is due to their observation that rehabilitated feeder roads revert to a deplorable condition within a short period of two to three rainy seasons, for example, as happened on the Fomena-Ayaase road. Those who have very old vehicles which are usually not roadworthy therefore travel on feeder roads to avoid the police.

The few vehicles that ply on feeder roads even when they have been rehabilitated is due to low demand for produce, particularly, when there are only few villages on the road. The number of vehicles on feeder roads increases with demand, for example, when there is a market day somewhere along it.

In the NFRMP, as in other feeder road rehabilitation projects and programmes in the past, emphasis was on improving the condition of the roads and not on the transport services. It is assumed that the private sector will seize the opportunity to make profit and therefore make all the necessary investments to provide the envisaged transport services. This does not happen as often as is desired. It appears that improved road condition alone is not an adequate basis for investment decisions in transport services on feeder roads. In this respect mention must be made of the fact that loans for the road sector always need to be considered when linked to the wider social benefit, such as socio-economic development or poverty reduction. It is expected that such points will gather more focus alongside the CDF process.

B. Impact on gender

From the perspective of gender, the impact analyses of the National Feeder Road Rehabilitation and Maintenance Programme (NFRMP) have shown that the benefits derived from it by men and women differ in character and extent. The differences in the derived benefits can be attributed to some peculiar circumstances and behaviour patterns exhibited by men and women. In many rural communities, women form the majority of the population. This is partly the result of males migrating from the rural to urban areas at a higher rate than the women. Due to this migration and certain other factors, females are increasingly becoming the bread-winners and heads of household, and therefore need to increase their income earning capacities. The women are engaged in many productive activities, which require transport to be moved to market. Important activities include farming, agro-processing and pottery. Women also dominate in trading in agricultural commodities, particularly food crops. Where there is no transport and transport of agricultural produce has to be by head load, it is the women and children who mostly do this, particularly, moving farm produce from farm to village and from village to market. The road transport affects the lives of men and women partly through the productive activities they pursue, marketing of the produce and access to social services.

Agricultural production

The most important economic activity pursued by the economically active rural population is agricultural production. Females are noted for food crop production which many of them cultivate mainly for subsistence. However, it is observed that when opportunities are created for commercial cultivation of food crops which hitherto were cultivated on subsistence basis, women are not able to take advantage of the situation and men take over. This is attributed partly to some socio-cultural attitudes of the rural populations. The rehabilitation of feeder roads has created opportunities for the cultivation of vegetables, particularly, tomatoes and garden eggs in several places which are now dominated by young men. However, the situation does provide some benefits for women which are not too obvious without careful consideration. The opportunity for the male youth to cultivate vegetables on commercial basis and earn reasonable incomes has reduced the rate at which they were migrating to large towns and cities to search for jobs which were very difficult to find. This in turn has reduced the rate at which females are becoming heads of household in the rural communities.

One way that the feeder road rehabilitation programme has affected agricultural production has been through the services provided by extension agents. When the condition of a feeder road is bad, extension agents are only able to visit the farming communities on motor bikes and on bicycles. Many female extension agents do not know how to ride motor bikes and bicycles, thus limiting the services they provide to the district capitals and large towns which can be reached by road transport. Unfortunately, the male extension agents who can use motor bikes and bicycles to reach farmers in villages along bad roads are not particularly welcome by married female farmers for fear that their husbands may become suspicious of having affairs with them.

The farms of female farmers are generally smaller than those of their male counterparts. This is due to several factors, some of which are socio-cultural, poor access to essential farm inputs such as credit, labour and land, and the considerable amount of time that females spend as caretakers of the requirements of their respective households. When feeder roads are rehabilitated and provide the incentives to increase farm size, the

female farmers are less able to take advantage of the situation to the same extent as their male counterparts.

Availability of road transport

The burden of transport in rural communities rests mostly on women. Where transport is not available women and children are responsible for headloading firewood and food from farm to village and from village to market. The rehabilitation of feeder roads and the subsequent availability of transport relieve women considerably from the burden of having to headload farm produce from village to market. It also affords them more time to do other things, such as spending time with relations, friends, etc. and getting back home early to undertake household chores.

The availability of transport as a result of rehabilitation of feeder roads has provided incentives for rural women to increase their activities in food processing as they are able to send the increased quantities of the produce to market or increased number of itinerant traders go to them in the villages to buy. The availability of transport has also encouraged some rural women to become traders or increase their trading activities, buying in their respective farming communities and those nearby and selling in local markets on market days. Trading in food commodities beyond the farm gate and local markets are dominated by women who operate as itinerant traders from large towns and cities. When feeder roads are improved, the itinerant traders extend the places where they purchase products originating from rural communities to the villages and farms.

Access to health facilities

The rehabilitation of feeder roads improves the rural dwellers access to health facilities, which are usually located in the district capitals and large towns. It also facilitates visits of health workers to the rural communities. Even though both men and women require health services, women tend to seek more health services and quite often on regular basis than their male counterparts, due to their biological constitution, for example, during ante and post-natal care. Women also shoulder the responsibility of taking their children and other household members for medical consultation whenever they are not well. Many rural health workers are women and the services they provide benefits women more than men. As explained in the case of female extension agents, when the condition of a feeder road is bad, the female health workers are unable to make the journey on motor bikes and bicycles to provide services in the farming communities and therefore limit their services to the district capitals and large towns. With the availability of transport, they are able to make regular visits to farming communities.

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Checklist for rapid appraisal survey

1. Availability of transport a. passenger b. produce	<input type="checkbox"/> improved <input type="checkbox"/> improved	<input type="checkbox"/> unchanged <input type="checkbox"/> unchanged
2. Variety of vehicles	<input type="checkbox"/> increased	<input type="checkbox"/> unchanged
3. Condition of vehicles	<input type="checkbox"/> better	<input type="checkbox"/> unchanged
4. Vehicle travel time	<input type="checkbox"/> reduced	<input type="checkbox"/> unchanged
5. Waiting time for transport	<input type="checkbox"/> reduced	<input type="checkbox"/> unchanged
6. Transport charges a. passenger b. produce	<input type="checkbox"/> reduced <input type="checkbox"/> reduced	<input type="checkbox"/> unchanged <input type="checkbox"/> unchanged
7. Information flow a. market b. others	<input type="checkbox"/> increased <input type="checkbox"/> increased	<input type="checkbox"/> unchanged <input type="checkbox"/> unchanged
8. Extension service	<input type="checkbox"/> increased	<input type="checkbox"/> unchanged
9. Variety of crops cultivated	<input type="checkbox"/> increased	<input type="checkbox"/> unchanged
10. Area of land cultivated (farm size)	<input type="checkbox"/> increased	<input type="checkbox"/> unchanged
11. Availability of improved inputs a. fertilisers b. certified seeds c. agro-chemicals	<input type="checkbox"/> increased <input type="checkbox"/> increased <input type="checkbox"/> increased	<input type="checkbox"/> unchanged <input type="checkbox"/> unchanged <input type="checkbox"/> unchanged
12. Use of improved inputs a. fertilisers b. certified seeds c. agro-chemicals	<input type="checkbox"/> increased <input type="checkbox"/> increased <input type="checkbox"/> increased	<input type="checkbox"/> unchanged <input type="checkbox"/> unchanged <input type="checkbox"/> unchanged
13. Input distributors	<input type="checkbox"/> increased	<input type="checkbox"/> unchanged
14. Prices of inputs a. fertilisers b. certified seeds c. agro-chemicals	<input type="checkbox"/> reduced <input type="checkbox"/> reduced <input type="checkbox"/> reduced	<input type="checkbox"/> unchanged <input type="checkbox"/> unchanged <input type="checkbox"/> unchanged
15. Productivity (yield per ha)	<input type="checkbox"/> increased	<input type="checkbox"/> increased
16. Output of crops	<input type="checkbox"/> increased	<input type="checkbox"/> unchanged
17. Labour availability	<input type="checkbox"/> increased	<input type="checkbox"/> reduced
18. Youth in agriculture	<input type="checkbox"/> increased	<input type="checkbox"/> unchanged

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19. Place of sale of produce a. farm b. village (home) c. roadside d. local market e. distant market	<input type="checkbox"/> changed <input type="checkbox"/> changed <input type="checkbox"/> changed <input type="checkbox"/> changed <input type="checkbox"/> changed	<input type="checkbox"/> unchanged <input type="checkbox"/> unchanged <input type="checkbox"/> unchanged <input type="checkbox"/> unchanged <input type="checkbox"/> unchanged
20. Number of buyers a. farm b. village (home) c. roadside d. local market	<input type="checkbox"/> increased <input type="checkbox"/> increased <input type="checkbox"/> increased <input type="checkbox"/> increased	<input type="checkbox"/> unchanged <input type="checkbox"/> unchanged <input type="checkbox"/> unchanged <input type="checkbox"/> unchanged
21. Producer price a. farm b. village (home) c. roadside d. local market	<input type="checkbox"/> increased <input type="checkbox"/> increased <input type="checkbox"/> increased <input type="checkbox"/> increased	<input type="checkbox"/> unchanged <input type="checkbox"/> unchanged <input type="checkbox"/> unchanged <input type="checkbox"/> unchanged
22. Availability of household goods a. village b. local market	<input type="checkbox"/> increased <input type="checkbox"/> increased	<input type="checkbox"/> unchanged <input type="checkbox"/> unchanged
23. Social marketing a. family planning b. aids education	<input type="checkbox"/> increased <input type="checkbox"/> increased	<input type="checkbox"/> unchanged <input type="checkbox"/> unchanged
24. Entertainment (concert party musical, cultural, video, etc.)	<input type="checkbox"/> increased	<input type="checkbox"/> unchanged
25. What other things have happened in the community as a result of the improvement in the road condition?		
26. What other things were you expecting as a result of the improvement of the road that have not yet happened?		
27. What other things do you expect to happen in the future as a result of the improvement in the road condition?		

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1 INTRODUCTION

1.1 Contents of evaluation group

In this evaluation group the focus is on institutional issues and includes three of the evaluation fields mentioned in the Terms of Reference, viz. institutional capacity and human resources development, technical assistance and a part of private sector contracting and financing. The evaluation fields¹ that are covered in this group are the following:

<i>Evaluation fields</i>	<i>Sub-items</i>
Institutional capacity and human resources development	<ul style="list-style-type: none"> § Strengthening of institutional capacity. § Decentralisation DUR/DFR. § Organisation and management procedures of GHA after Board inauguration.
Technical assistance	<ul style="list-style-type: none"> § Incentives to retain qualified and experienced staff. § Present use of technical assistance.
(Part of) private sector contracting and financing	<ul style="list-style-type: none"> § Reduction of road agency staff as a result of private sector participation.

1.2 Relation to other evaluation groups

In fact the institutional evaluation group is directly related to all other evaluation groups: the technical group (institutional aspects of road maintenance and development), the financial-economic group (institutional aspects of financing, for example the Road Fund), the contracting group (organisational set-up of contract management), the environment-safety group (institutional aspects of environment and safety, including the newly established Road Safety and Environment Division of GHA and the National Road Safety Committee). These issues will be dealt with in the respective evaluation groups.

¹ The evaluation fields correspond with the scope of work elements, as defined in the Terms of Reference.

2 OBJECTIVE OF EVALUATION GROUP

In this section the objectives of the evaluation group are presented. The objectives presented below are a combination of the text taken from the February 1996 Policy Statement and the scope of work as defined in the Terms of Reference. The two combined can be regarded as the starting point for this evaluation.

2.1 Institutional capacity and human resources development

Policy letter

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 reinforcing fiscal discipline, transparency and managerial accountability, and making the 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 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 of the Board of GHA – 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 the Roads and Highways Act, based on the current Ghana Highway Authority Decree, and other relevant legislation.

Terms of Reference

- ⊞ Assess the efforts made in order to strengthen the institutional capacity of the three road agencies, the Road Fund, as well as the Ministry itself.
- ⊞ Assess the on-going decentralisation of DUR and DFR and the implications for the future.
- ⊞ Assess the organisational and management structure and procedures of GHA after the inauguration of the Board.

2.2 Technical assistance

Policy letter

Ghana has become increasingly dependent on foreign technical assistance to carry out its accelerated development programmes. The gradual transfer of work to Ghanaian nationals under these programmes, together with the 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 as possible the preparation, implementation, operation and management of its development projects, minimising long-term foreign technical assistance and creating the right incentives to retain qualified and experienced local personnel.

Terms of Reference

- ⊞ Assess the efforts made by the Government of Ghana in creating the right incentives in order to retain qualified and experienced Ghanaian staff.
- ⊞ Assess the present use of technical assistance at the various levels taking into account the existing internal bottlenecks, the need for capacity building, as well as the donor's conditions.

2.3 (Part of) private sector participation and financing

Policy letter

To ensure cost-effective and efficient implementation of its programmes 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 road works and 90 % of all road maintenance works through private sector contractors. Government will accordingly reduce road agency staff in line with their reduced workload.

Terms of Reference

- ⊞ Assess the corresponding reductions in road agency staff (related to the contracting of the private sector of road maintenance and major road works).

3 OVERVIEW OF PERIOD 1996-2000

3.1 Ghana Highway Authority

Organisation

History and legal status

Ghana Highway Authority (GHA) was established in 1974 as the organisation responsible for the development and administration of the whole road network of Ghana. Prior to the establishment of GHA, responsibility for the trunk road network was exercised by the Ministry of Works and Housing (Public Works Department), and responsibility for the feeder road network by the several other department.

In the 1980s the organisational set-up was changed:

- three agencies became responsible for specific roads: (i) GHA for highways; (ii) Department of Feeder Roads was created in 1981 as the agency responsible for feeder roads; and (iii) Department of Urban Roads was established in 1988 as the agency responsible for urban roads;
- the Ministry of Roads and Highways was established in 1982, responsible for planning, construction and maintenance of all public roads, and as such it is supervising the three road agencies.

Apart from establishing the Ministry of Roads and Transport and the two other road agencies, the 1980s saw the start of privatisation of several tasks. This concerned first and foremost the replacement of force account work by the engagement of private contractors, which started in 1984-1985. This not only necessitated the agency to restructure (downsize the semi- and unskilled labour force and to increase professional staff, see also the section “Mission statement, policy objectives and SWOT” below), but even more important and more difficult to achieve, the change from implementation to supervision and planning required different skills, expertise and attitudes.

Legal status and Board of Directors

In 1974 GHA's legal status was anchored in the National Redemption Council Decree (NRC298). In Part II of the Decree (Paragraph 2, Clause 2) it is stated that the main purpose of GHA is “to plan, develop, maintain, protect and administer the public highways, ferries, road camps, traffic devices and any related work”.

The basic legislation governing the road sector was not changed when the Ministry of Roads and Highways (and the two other road agencies) were established, and because the Ministry did not exist in 1974, Decree 298 did yet not define the functions of the Ministry. In the “Guidelines for Ministries” the functions of the Ministry of Roads and Transport were the same as for GHA, except that the Ministry was to cover “public roads and highways”, while GHA was only responsible for “public roads”. This suggests a confusion of functions and responsibilities between the Ministry and GHA.

In December 1997, Decree 298 was re-enacted under the Ghana Highway Authority Act (Act 540) in order to create a clear demarcation of responsibilities and to cope with the many changes which had occurred in the road sector. In Part 1, Clause 2, it says “GHA shall, subject to the policies of the Ministry, be responsible for the administration, control, development and maintenance of trunk roads and related facilities”, and this general objective is further specified in Clause 3 of the Act.

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At the establishment of GHA in 1974, the agency was an autonomous body, administrated by a Board of Directors. While the Ministry of Roads and Highways was established in 1982 with a Board of Directors, this was replaced in 1996 by an Interim Management Committee/Joint Consultative Committee in 1996. This committee consisted of nine members, viz. the Chief Executive, two of the three Deputy Chief Executives, and six other representatives of GHA (e.g. middle management, legal services).

In the Policy Letter of 9 February 1996, it was announced that GHA would establish an independent Board of Directors as its governing body, to encourage the authority to become a more customer-oriented agency. This board was inaugurated on 3 September 1999. It consists of ten members, viz. a chairman (not specified, but actually from the private sector), representatives of the ministries of Roads and Transport, Finance, Environment, and Interior, the Chief Executive of GHA, a representative of the Private Enterprise Foundation, a civil engineer (Ghana Association of Consultants), a representative of private road transport unions and one other person representing road users. The members are appointed by the President of Ghana.

Organisation structure

The main features of the present organisation structure are:

- GHA is headed by a Chief Executive. Immediately below him are three departments, viz. Administration, Maintenance and Development, each headed by a Deputy Chief Executive.
- Under the three departments there are:
 - 15 Divisions, each of which is headed by a Director;
 - 10 Regional Offices, headed by Regional Highway Directors. The Regional Offices in turn supervise 32 District Office.

The present organisation structure is summarised in appendix A.

The structure and staffing of the top management of GHA (referred to as the Directorate) remained unchanged in the period 1996 to the present. The Directorate consists of the Chief Executive and three Deputy Chief Executives (Administration, Maintenance and Development). Management is essentially co-ordinated through collective and individual meetings of the Directorate. While there is no doubt that the Directorate dominates the decision making process of GHA, during interviews with the Evaluation Mission it appeared that the four top managers have a clear understanding of and commitment to GHA's vision and mission, that they have excellent contacts with key persons in the Ministry of Roads and Transport and that they fully understand the need to restructure GHA in view of the changed tasks.

Mission statement, policy objectives and SWOT

Vision

In the Strategic Plan 1995-2000, a Vision is not formulated, but in the Strategic Plan 2000-2002 GHA envisions ultimately a smooth, economic, efficient, safe and reliable trunk road network linking all national, regional, district and major towns and major towns in neighbouring countries. The network is envisaged as the main routes for internal distribution, defence, export and import and all in harmony with other modes of transport.

Mission

In the Strategic Plan 1995-2000 the Mission of GHA is formulated as “to provide a safe and reliable trunk road network at optimal cost, taking advantage of modern technology in road-building and new income-generating methods to facilitate socio-economic development in the country, in accordance with its enabling decree”. The mission statement remained unchanged during the review period.

Objectives (wider, specific)

The principal objective of GHA, as stated in the Strategic Plan 1995-2000 is “to clear the large backlog of maintenance work on the trunk road network and to execute road maintenance on a sustainable long-term basis”.

To this end GHA adopted the following specific objectives:

- s To improve the trunk road condition mix from 40 % good, 27 % fair and 33 % poor in December 1994, to 71 % good, 20 % fair and not more than 9% poor by December 2000.
- s To maintain high quality design, construction and maintenance of roads and bridges, in harmony with the environment through the use of modern technology and intensified quality control.
- s To help develop the local road construction industry to enable it to cope with the programmed work-load throughout the strategy period, through training local contractors in technical skills, quality control and contract administration.
- s To adequately train and develop its manpower by training managerial and operational staff in various skills.
- s To improve the welfare of its workforce by instituting a health and safety scheme, under which staff will be medically examined periodically; and instituting a performance appraisal system to enable management to reward exceptional performance.
- s To create a good image among its key stakeholders (road-users, the government and the public at large) through the creation of better understanding of its operations, problems and constraints.
- s Strengthening the organisational structure and institutional capacity.

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Strategy and targets

The Strategic Plan 1995-2000 contains details of the strategy and targets for that period 1995-2000. Apart from the strategy for maintenance and reconstruction (see Annex VII), GHA planned the following strategy and targets:

Organisation

GHA recognised the need to restructure, in order to adjust the organisation to the new tasks of supervision and planning, instead of implementation. The Strategic Plan 1995-2000 specifically mentions the merging of the planning of maintenance works (presently done by Maintenance Department) and the planning of development works (presently done by Development Department), into the Planning Division.

Also in the 1995 SAPROF report (prepared to identify Japanese technical assistance projects and financial support to GHA) an extensive overview of and comments on the organisation structure of GHA are given and a proposal for an alternative structure is presented (including the merging of planning of maintenance and planning of development works).

On the other hand, the Strategic Plan also identifies new business opportunities for consultancy services, for example for other agencies (Ghana Civil Aviation Authority), for materials testing and advice (to estate developers), and even to other countries.

Human Resources

In 1984-1985, when GHA started to contract out routine maintenance works to private companies, GHA employed 8,500 staff. At the end of 1994 this was already down to 4,646. In the 1995 SAPROF report the manpower situation was analysed with the following conclusions:

- s The core engineering skills were adequate for that moment but needed to be expanded in view of the increased involvement of GHA in direct supervision of contractors, costs and designs.
- s The category “other professionals” (accountants, etc. within the Administrative Department) was the most depleted group. Only 13 staff members were employed, while there were 26 vacancies. This severely affected the effective running of crucial divisions, in particular Finance Division and Audit Division). A temporary measure was the employment of four accountants on contract basis (financed from World Bank funds).
- s The group “semi- and unskilled workers” represented GHA’s past reliance on force account work. Although this group had been reduced considerably in foregoing years, ample room remained for further downsizing.

In the Strategic Plan 1995-2000 it was planned to rectify the manpower situation, leading to a net reduction to 3,134 persons by 1998. Quantification of this manpower action plan can be found in the section on “Human Resource Development” below. The main features are:

- s Decrease of the number of districts from 32 to 26, each with a staff of 20 to do minor routine maintenance.
- s Curtailing the workshops by a reduction in equipment holding and to shed excess labour.
- s Privatisation of auxiliary functions (security, janitors, messengers).

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- § Normal retirement of about 100 persons per year.
- § Increase of the engineering and other professional staff.

Strengths, Weaknesses, Opportunities and Threats (SWOT)

In the Strategic Plan 1995-2000 the following SWOT analysis is presented:

Strengths

- § Effective organisational structure at all divisional levels.
- § Well-defined corporate goals and job specifications for all staff.
- § Existence of high level of loyalty and commitment of senior management staff.
- § Good communication links between the Directorate and the Divisional/Regional heads.
- § Good working attitude of GHA's Mobile Maintenance Units.
- § High quality technical staff.
- § Good and elaborate programme for the training and development of engineering and other technical staff.
- § Existence of a sound accounting system with well-documented controls.
- § Use of modern facilities like computers.
- § Encouraging financial support from external sources.
- § Keen competition among international consultants and contractors for GHA jobs.

Weaknesses

- § Inadequate staff motivation for high performance.
- § Inadequate flow of information, both in horizontal and vertical directions.
- § Absence of an effective succession plan.
- § Absence of sufficiently qualified middle-management personnel.
- § Lateness to work by some staff at the head office and in the regions.
- § Overstaffing in non-skilled and semi-skilled categories.
- § Absence of a research and development unit.
- § Low level of competence of the majority of accounting staff.
- § Absence of a fully developed Management Information System.

Opportunities

- § Potential to engage in road development consultancy.
- § Absence of rest stops for use of long-distance travellers causes fatigue and subsequent accidents. Development of such rest stops will bring earning to GHA.

Threats

- § Present over-reliance on external funding sources for implementation of road programmes.
- § High interest and exchange rates inhibit contractor's ability to raise loans easily. These factors also lead to high capitalisation and operating costs, which are almost invariably transferred to the project costs.
- § Any form of undue interference in the implementation of planned road programmes is likely to disrupt the attainment of set goals.

Human Resource Development

Organisation

The current organisation structure was designed in 1974 and remained virtually unchanged till present. The only change in period 1996-2000 was the inclusion of environment and safety in the organisation. This was not foreseen in the Strategic Plan

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1995-2000/Policy Letter of February 1996, but in the agreement with the World Bank on the Highway Sector Investment Programme it is mentioned that “GHA will appoint to its Planning Division three engineers/technicians, to assist with environmental impact assessments and monitoring within four months of credit effectiveness”. For that purpose, in 1996 the Environmental Unit was established under the Planning Division; and in 1999 a new division was created, the Safety and Environment Division, which accommodates the environmental unit established in 1996 and the new safety unit.

This implies as well that neither the foreseen merger of maintenance and development work planning into one unit materialised, nor the reduction of the number of districts. On the other hand, organisational reform still has the attention of top management. One of the ongoing areas of technical assistance to GHA is in the field of “organisational development” (TCC II) and in the context of that project a senior committee was formed chaired by the Deputy Chief Executive of Development. This committee will become the central body to proceed with the “Organisational Development Plan”. In the minutes of the Kick-off Meeting (17 March 2000) the chairman stated that “considering the future of GHA and the road user’s expectations, the changes that GHA must make are drastic”.

The TCC II project reported in the report of March 2000 “Highway Network Master Plan Study” (Annex IV) on their findings of the organisation structure and recommended a number of changes, to a large extent similar to recommendations of the 1995 SAPROF report.

In the field of privatisation of tasks little has been achieved so far. In fact only a part of the security services have been contracted to a private firm. In this context the March 2000 Highway Study recommends to carry out by outside sources:

- s Surveys.
- s Road and bridge design.
- s Laboratory operations and materials testing.
- s Traffic survey data and data processing.
- s Training.

Furthermore, the report recommends to privatise the following works still done by force account:

- s Mobile Maintenance Unit and Bridge Maintenance Unit.
- s Site supervision.
- s Workshops.
- s Quarries.
- s Ferries.

Presently GHA is considering to privatise a part of these tasks, e.g. traffic surveys/counts, quarries and workshops.

Staffing

As mentioned before, the restructuring of the staff would consist of two parts, viz. reduction of semi-skilled and unskilled workers and strengthening professional job categories such as engineering and accounting. Details on the staff restructuring and actual achievements are summarised in table 1 below.

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Table 1 Projection and achievement GHA manpower restructuring 1996-2000

Description	Actual 1/1996	Actual 8/1998	Actual 12/1999	Target 2000	Surplus/ deficit	Surplus/ Deficit (percent)
Engineering staff (incl. executives)	123	118	113	217	-104	-48%
Other professional staff	13	12	12	38	-26	-68%
Administration/other management	204	217	259	284	-25	-9%
Engineering technicians	111	118	116	120	-4	-3%
Technical and supervisory (senior)	133	100	83	165	-83	-50%
Technical and supervisory (I and II)	106	91	??	110		
Works superintendents	65	49	38	73	-35	-48%
Foremen/chargemen	107	98		171		
Road overseers	126	113		0		
Skilled workers	1,046	912		450		
Clerical staff	661	571		566		
Semi- and unskilled staff	1,390	1,218		940		
Trainees/apprentices		12				
Junior staff	(3,330)	(2,924)	2,968	2,127	841	40%
Total	4,085	3,629	3,589	3,134	455	15%

Sources:

- s Ministry of Roads and Highways, Strategic Plan 1995-2000
- s Construction Project Consultants (TCC II), preliminary report for Ghana Network Master Plan, June 1999 (actual figures 8/1998)
- s Construction Project Consultants (TCC II, interim report for Ghana Network Master Plan, March 2000 (actual figures 12/1999)

Note: the March 2000 report uses a different categorisation (technical and supervisory staff I and II is missing, and the category "junior staff" includes presumably all staff in the previous categories of foremen, overseers, clerks, semi- and unskilled, trainees).

According to GHA the actual work force at the end of 1999 was 3,486, compared with 3,589 as in the interim report for Ghana Network Master Plan (the difference is presumably due to slightly older figures used for the interim report. Based on the actual overall total of GHA the present total labour force is still 352 persons higher than planned (11 percent), but much larger discrepancies emerge when comparing the actual and planned employment per category:

- s In the categories engineering staff, other professional staff, technical and supervisory staff and works superintendents, some 50 % of the required staff is still missing. In spite of the large number of vacancies in these categories, GHA is not allowed to hire new senior staff because the government has frozen recruitment of civil servants.
- s Junior staff: since the mid-1980s GHA has been reducing its junior staff. A further downsizing programme, financed with the Government Retrenchment Programme, was initiated in the beginning of the 1990s. In 1994 and 1995 the first two groups of this programme received a retrenchment payment (almost 700 employees). After that the programme was stopped, after the government did not allocate more funds to the programme. The result is that GHA still has a 40 percent surplus of junior staff. In 1999, the new Board of Directors prepared a proposal to implement the next phases of the retrenchment programme:

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Third group, 1999:	161 persons
Fourth group, 2000:	161 persons
Fifth group, 2001:	241 persons
Sixth group, 2002:	324 persons

Financing of groups 3-6 is still not secured and hence the plan for 1999 could not be implemented. In the meantime the Board presented a funding request to the Road Fund and the involvement of the World Bank is currently being discussed.

The overall conclusion is that GHA has still not completed the transition from force account work to contracting out to private parties. In fact, GHA is in a dead-lock situation: on the one hand funding for the retrenchment of excess staff is not available, and on the other hand, the government policy forbids the recruitment of much needed professional staff.

Age, skills, experience

The TCC II project made an extensive analysis of the human resources composition. It was first of all concluded that employees of 45 years and older comprise 68 % of the total staff, while employees of below 34 years comprise only 3%. In addition, almost half of the employees are semi- and unskilled workers, of over 45 years old and stationed in the regions. This group is mainly formed of the remainder of the force account workers.

The TCC II analysis is worrying, because it indicates to a shortage of qualified technical staff of younger age groups (engineers and specialists, technician engineer, technical officers) and if no urgent measures are taken GHA will find it increasingly difficult to carry out its core tasks.

Remuneration policy, constraints

There is a general complaint that the GHA salaries are low, not only in comparison with the private sector, but also in comparison with government utility organisations (electricity, water, etc.). Only in comparison with staff of the ministries are GHA employees slightly better paid.

Although it is difficult to compare the remuneration of GHA staff with the remuneration of staff employed by private companies, some spot checks of the Evaluation Mission confirmed this general picture. The TCC II team concluded that the income disparity of GHA and the private sector in Ghana is a factor 5.0, compared with a factor 1.5-2.5 for countries such as Pakistan, Jordan and Argentina.

Regarding the salary comparison with the government utility organisations some detailed analyses have been carried out:

- s In the 1995 SAPROF report the salaries of GHA were compared with four other parastatals and it was concluded that on average the GHA salaries were on average 2.2 times lower than the salaries of the other four parastatals. Moreover, this salary gap was similar for all salary categories.
- s The TCC II project updated the salary comparison and it was concluded that the salary gap had increased during the past five years: in 2000 the GHA salaries were 2.6 times lower than the ones of the Electricity Company of Ghana, whereas the gap in 1995 with this company was 2.05.

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For some positions it is even more difficult to offer competitive salaries. This concerns for example accountants. As mentioned above, in the period 1995-present GHA received World Bank funding to contract four accountants.

GHA's salary structure is similar to the Civil Service Scheme and salaries are paid by the Controller and Accountant General. Under this scheme there are 22 salary categories, related to the occupation hierarchy, and GHA has very limited possibilities to influence the salaries. Even in case GHA would manage to downsize its labour force (retrenchment of semi- and unskilled labourers would reduce the total wage bill by some 30 percent), until now GHA has not been allowed to retain the saved funds and to remunerate the remaining staff better. On the other hand, the government utility companies generate own revenues and do not rely on assistance from the government which allows them to follow an own salary policy.

According to the Directorate of GHA preparations are being made to change the situation in such a way that salaries will be transferred directly by the Ministry of Finance, and no longer by the Controller and Accountant General. This implies that GHA would then run its own salary budget and administration. However, several other issues are still unclear to the Evaluation Mission. For example, would GHA be authorised to design its own salary structure and to recruit new staff (without asking permission from the government), how is the total salary sum determined (and has GHA the possibility to increase the total salary bill?). The Board of Directors has requested the Ministry of Roads and Transport to finance (a part of) the recurrent costs of GHA from the Road Fund. This request is still under consideration.

Retention of skilled staff

There is a general complaint in GHA that it is increasingly difficult to retain qualified staff. In the period 1996-1999 a total of 24 professional staff left GHA (fifteen engineers, two economists, one director of personnel, three administrative officers, three training officers and one legal expert). In the view of the Evaluation Mission this is, however, not excessive, although it should be mentioned that most of the people resigning had worked only 3-4 years for GHA and after being trained they joined the private sector.

Training

Training policy

In the Strategic Plan 1995-2000 GHA recognises that in order to supervise all contract works GHA has to attract, retain and train professionals and technicians. In preceding chapters attention was given to organisational issues, in this chapter attention will be given to training.

One of the specific objectives of GHA is "to adequately train and develop the manpower by training managerial and operational staff in various skills". This is further specified in the Corporate Training Programme 1997-1999 as follows:

- s Attain a systematic development and improvement of knowledge, attitudes and professional capabilities of GHA's employees at the management, specialist, technical and non-technical levels, in order to enhance the effective utilisation of human resources in a bid to achieve GHA's overall corporate objectives.
- s Improve GHA's ability to implement its road construction programme by enhancing skills to GHA's officers, contractors and operators in the private sector, through the

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identification of training needs in the road sector, and formulation and implementation of a comprehensive training programme.

In view of the importance of training GHA has established a special Training and Development Division (under the Administration Department), headed by a Director and with a training programmes manager, training services supervisor and a librarian. In addition, the training division has two vacancies (training aids supervisor and field training supervisor, who left in 1996. At the end of 1999 approval was given to replace these two staff). The Training and Development Division has prepared a Training Management Manual (March 1997), which includes policies and management procedures for the Training Division. The training policies are:

- s Training policy no. 1 (training policy, making): the policies of GHA related to training its employees will be organised in a series of training policy statements.
- s Training policy no. 2 (training course production): GHA employees will be trained to apply uniform work methods, workmanship standards and management practices on a national basis. The Training Division will produce training courses and materials to be used in the training effort.
- s Training policy no. 3 (training needs identification): the training needs of GHA will be identified to provide bases for developing and maintaining the long-term training plan.
- s Training policy no. 4 (training planning and programming): the Chief of Training will prepare an annual budget, based on long-term and annual training work plans, programmes and schedules.
- s Training policy no. 5 (training implementation): the operating departments and divisions of GHA will be responsible for conducting work methods and management training for their employees. Supervisors are responsible for the technical proficiency of their subordinates, and therefore for the conduct of training necessary to meet the GHA standards.
- s Training policy no. 6 (training reporting): GHA management personnel will be provided with information regarding the process of training of employees.
- s Training policy no. 7 (training course validation): training materials will be validated on a regular basis in terms of (i) implementation problems and (ii) work methods and workmanship standards attained after training. The validation data will be used by the Training Division to improve further training.
- s Training policy no. 8 (technical reference system): technical references to highway engineering standards and work practices, and to modern highway management systems will be made available to all operating divisions, including regions. Training libraries will be established in each region and in the head office, and will contain all training materials and appropriate technical references needed to develop the manpower capabilities.

The above training policies give a broad description of the Training Division, rather than the policies followed. It is recommended that a comprehensive policy statement be prepared based on the mission of GHA and on organisational requirements, and highlighting the training approach, priorities, etc.

Training requirements

A proper training programme should be based on a Training Needs Assessment (see also training policy no.3), which incorporates occupational and individual needs. This needs first of all the upkeep of proper staff records, which for training planning purposes

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should include personal training records and training needs. Staff records with training particulars are, however, not systematically kept.

An overall Training Needs Analysis, based upon a comparison of the needs of GHA with the availability of skills and expertise, was not prepared prior to the Highway Sector Investment Programme. In the meantime attention has been drawn to this issue, in particular in two reports:

- the EU sponsored ODICT training programme (Organisation Development and In-country Training), which started at the end of 1999, contained an analysis phase for GHA and for other road agencies, determining in broad terms the training needs for each organisation. Note: given the short period and limited manpower this analysis necessarily was limited; nevertheless, the consultant followed a thorough approach by interviewing all key staff in each organisation, with the assistance of an extensive questionnaire.
- in the Special Assistance for Project Sustainability (SAPS) report of March 1999 (OECF, in the context of financing of the Anwiankwanta-Yamoransa road rehabilitation), the need for a Training Needs Analysis is recognised and it is proposed that OECF will finance 14 person-months technical assistance for this purpose.

Training Programmes

In the Corporate Training Plan and Programme 1997-1999 (prepared in co-operation with World Bank technical assistance) GHA presented its training programme. The Corporate Training Plan identifies 18 specific functional areas for training (ranging from planning till surface dressing techniques). As mentioned above, this programme is not based on a comprehensive Training Needs Analysis, and as such it is unclear how the 18 areas for training have been identified and what criteria have been used to distribute the (limited) funds over these areas. The programme distinguishes four groups of training, viz.

- Management, professional and specialised training: these employees will be exposed to new developments in specialist fields, through conferences, study tours and attachments to construction industries and management institutions.
- Local professional training: under this programme local seminars, workshops and short courses will be organised by professional bodies (such as universities), and group training programmes tailored to GHA's operational needs will be run in-house by local trainers.
- Overseas training: mainly under donor agency sponsorship engineers and professionals will be placed on long and short courses, and study tours.
- Domestic contractor training: a purpose-built training programme will be designed by the Ministry and implemented by the three road agencies.

Funding of the training was foreseen as:

- World Bank: in the context of the Highway Sector Investment Programme a detailed training programme of US\$ 3.8 million was designed for GHA, of which US\$ 1.6 million was to be financed from World Bank funds (unclear who was to finance the remainder, but presumably the Government of Ghana). The programme consisted of local training (US\$ 0.2 million) and overseas training: (US\$ 1.4 million).

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- Japanese Government and GTZ: conduct on-the-job training as part of a broader programme of technical assistance (see also the section on “Foreign Technical Assistance” below).
- European Union: under Trip II an amount of Euro 1.5 million. According to the GHA training programme, of this amount Euro 910,000 was to be used for GHA (Euro 570,000 for workshops and seminars and Euro 340,000 for study tours and short-term overseas training) and in addition Euro 140,000 for training equipment. Presumably this programme was just an initial design (as this programme has been radically adjusted, see below).
- GHA/Government of Ghana: an in-house training programme has been prepared, without budget (to be determined by the budget section of GHA Finance Division).

The GHA Training and Development Division prepared concise overviews of the training done annually. But due to different definitions it is virtually impossible to compare the training planned in the 1997-1999 programme with the achievements, but from the annual overviews it appears first of all that the actual training falls short of the year plans. Secondly, the annual overviews are rather superficial in their analysis: they contain only broad training groups and broad achievements, but no information on the training prioritisation, evaluation, impact, successes/failures, etc.

By far the largest group of trainees visited “seminars, conferences and workshops”, mostly organised by other local organisations. It is extremely worrying that the GHA training budget was significantly reduced, with the result that the last two years no in-house programmes could be organised, making the training even more dependent on donor-funding.

From the broad overviews it can furthermore be concluded that in the period 1996-2000 donor-funded training dominated (except for seminars and conferences), more specifically World Bank financed training. As regards the World Bank funded HSIP training, the programme included in the Corporate Training Plan 1997-1999 bears little correspondence to the proposal in the Staff Appraisal Report of April 1996 (in fact only the total funding is the same), and as mentioned above, the annual training reports do not allow comparison with the Corporate Training Plan 1997-1999. Overall, it is not possible to compare the planned and actually achieved programme, and hence it is unclear what the results of the training are.

Note, this does not include the EU sponsored ODICT project, because that started only at the end of 1999. In this project no actual training has been conducted yet; the analytical phase was completed and the Analysis Report was submitted in February 2000. This report is presently under discussion in the road agencies. The objectives of ODICT are:

The enhanced performance within the road sub-sector through the development and strengthening of the required capacity.

- The establishment of sound systems and procedures to enhance efficiency.
- The complementary development of human resources within the sub-sector through the implementation of training programmes, an integral part of the institutional strengthening and capacity building.

Following the inception and analysis phases of the project, the Analysis Report (February 2000) contains the following general conclusions that the MDAs suffer from:

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- ⊞ Constraints on their ability to fully manage their human resources.
- ⊞ Constraints on their ability to fully manage their financial resources.
- ⊞ A lack of well defined HRM systems.
- ⊞ A shortage in middle management skills, especially in the administrative and accounting divisions.
- ⊞ A need for greater clarity in the area of fiscal decentralisation, its impact on operational decentralisation, the time scale for such changes and the future development of the Local Government Service.
- ⊞ A need to achieve greater efficiency in the delivery of its services, concentrating on quality and value for money in its outputs.

The ODICT programme recommends:

- ⊞ Initiation of a “change process” to make the maximum use of the available public sector initiatives to improve the MDA’s capacity and freedom to manage their human and financial resources.
- ⊞ Establishment of the greatest possible clarity in the decentralisation process and the alignment of strategic action and performance indicators.
- ⊞ Technical assistance to the HR divisions of the MDAs to implement improvements of HRM systems and develop co-ordination of the Training Plans.
- ⊞ Technical assistance to the MDAs to develop Quality Management structures to co-ordinate the elements of operational delivery in order to achieve improved quality and value for money.
- ⊞ Technical Assistance to MDAs to assist in the development of the reporting process, focusing on the reporting of Key Performance Indicators and Organisation Development Performance.
- ⊞ Technical Assistance to DUR and DFR to develop and implement a basic bridge inventory and maintenance information system.

Training capacity, facilities

The World Bank financed HSIP training programme is a mixture of in-country and overseas training. The in-country training is mainly given by outside organisations such as universities, GIMPA, Vocational Training Institute and Civil Service Training Centre; only a few persons were trained in-service.

GHA does not have its own training facilities, but it attaches high priority to establish its own training premises. The Highway Sector Investment Programme also recognises the importance of a new training centre and a part of the World Bank loan (US\$ 4.2 million, in addition to the contribution of the government of US\$ 0.5 million) has been allocated for this purpose. Recently land has been purchased and the World Bank will also fund consultancy to prepare the feasibility study of the training centre.

Note: SAPS report of March 1999 also an amount of US\$ 0.5 million is allocated for the feasibility study of the GHA training centre. It is unclear to the Evaluation Mission whether OECF actually has allocated this amount and whether there is an overlap with World Bank funding.

Given the budgetary constraints facing GHA the Evaluation Mission recommends to carefully approach the feasibility of the training facilities, to give high priority to financing possibilities (including recurrent expenses), and to explore the possibilities of sharing the facilities with other organisations (in- and outside the road sector, including the possibility to co-operate closer with the outside training institutes already used).

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Funding

See above: the strong dependence on donor-funded training is worrying. This is to a certain extent related to the general downswing of the national economy, which led to a general reduction of government funding, both for capital expenditures and for recurrent expenses. On the other hand, it might be that the willingness of donors to finance training induced GHA to give lower priority to funding of training.

Training as incentive

It is generally acknowledged in GHA that training, and especially overseas training, is an incentive to work for GHA, partly to supplement the relatively low primary salaries, partly to increase the expertise and skills. For example, in the Corporate Training Plan 1997-1999 a total of 92 people planned training abroad (ranging from one week courses to 12-months MSc).

This would also mean that in case overseas training will be reduced (e.g. the EU training programme intends to offer only in-country training), this will further increase the problems GHA is facing to recruit staff. This is worrying, but nevertheless the Evaluation Mission is of the opinion that the first priority should be to increase the primary salaries to a competitive level, which would then make it possible to design the most appropriate training programme (without taking incentive issues into consideration).

Restructuring GHA

In the chapter on organisation it has been mentioned that GHA is in a transition process, from implementation to supervision and planning. This does not only need organisational changes (downsizing certain staff, and increasing or transferring other staff), but it requires also different skills and attitudes of the remaining staff. The training programme should be focused on these new tasks.

Foreign Technical Assistance

TA components in donor interventions

As regards technical assistance, all donors provide funding for consultancy services (appraisal, design and supervision) of major road works. It is difficult to quantify whether this donor-funded consultancy has been reduced (this would need information on the situation before 1996), but the impression is that this is not the case.

In addition to consultancy for major roads projects, donors provide technical assistance to the organisation. In the case of GHA this concerns:

- s World Bank: in the context of HSIP, during the period 1996-present a wide range of technical assistance has been given:
 - three local accountants have been assigned to the Finance Division and to Internal Auditors for a period of 3-4 years.
 - one local environmental expert has been assigned to the environmental unit for a period of three years (since 1997), with the intention to start-up this unit and to train staff.
 - a foreign consultancy team has been employed to install the Pavement Management System and to train staff.
 - a foreign consultancy team has been contracted to train GHA staff (and staff of other agencies and private contractors) in improving the quality of bituminous surface dressing.

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- a foreign road safety expert will be contracted for a period of 12 months to develop guidelines and check lists (for design, for road safety auditing, for establishing data bases) and to prepare proposals to include safety in economic analysis.
- § Japan: in the TCC II programme, technical assistance has been given since 1999, in three fields: (i) a management expert, with assistance to the Administration Department, to analyse and recommend on organisation and management of GHA in view of the emphasis on supervision and planning; (ii) a highway planner, with assistance to the Planning Division for the preparation of the Highway Master Plan; and (iii) a project management expert, given assistance to the Contract Division to support and develop the contract management system. For all three areas of technical assistance working groups have been formed, in order to involve GHA as much as possible in the activities. This technical assistance is supplemented by training (both on-the-job, and short courses). In addition, Japanese volunteers are working in the workshops.
- § Germany: since end 1997 GTZ provides technical assistance. The expert was initially connected to the KfW road rehabilitation programme, but at a later stage re-allocated to the Maintenance Department of GHA for the implementation and operationalisation of the Pavement Management System (in fact a follow-up on the World Bank technical assistance to install the PMS and to train staff).
- § Denmark: a road safety and environment expert has been attached to GHA since late 1999, in order to improve the capacity of GHA (and DFR) in the field of safety and environment plan for GHA (as well as for DFR). Recently a draft interim report has been submitted, with an analysis of the present situation and a proposal for future areas of co-operation (“tools and training”). See Annex X for more details.

The Evaluation Mission does not have the impression that the technical assistance is related to specific road programmes or is connected with specific conditions, although especially in the field of safety and environment it might be questioned whether Ghana gives the same priority to these issues as the donors.

By and large the technical assistance either focused on activities which became more important in the new GHA (planning/supervision, including organisation aspects and contract management) or on activities which gained importance during the last years (safety and environment, to a certain extent donor-driven), and it is aimed at an increased reliance of GHA of its own organisation and staff. In this sense it can be concluded that GHA did not succeed in the aim of minimising long-term foreign technical assistance. In this context it can also be concluded that a major part of the technical assistance is aimed at human resources development, either directly at the organisation level or via training of staff, and as such it is the explicit intention to reduce the dependence on foreign technical assistance.

In addition, the World Bank funded assistance for contracting accountants is induced by the problems faced by GHA to offer competitive remuneration to highly qualified staff. This is part of a general problem and can be regarded purely as a temporary measure to solve an immediate problem of lack of suitable staff in a main part of the organisation.

3.2 Department of Feeder Roads

Organisation

History and legal status

The Department of Feeder Roads (DFR) was set up under a government instrument in July 1981 to carry sole responsibility for the planning, development and maintenance of the feeder road network in Ghana. Prior to the establishment of the 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, Ghana Highway Authority and Cocoa Marketing Board.

DFR is a Civil Service Organisation and is one of the agencies under the Ministry of Roads and Transport (MRT).

The role of the DFR is embodied in the legislation formulating the MRT and its authority flows from this. DFR is, therefore, subject to central governmental budgetary policies and procedures, personnel procedures (appointments, promotions, pay, etc.), procurement and central government financial, managerial and economic policies.

Structure

The DFR is organised at both head office and regional levels. The present organisation structure consists of a central headquarters in Accra and regional offices in the regional capitals. In the head office, the department is headed by the Director, supported by Deputy's for the department's three main tasks: Road Maintenance, Road Development and Planning. The organisation structure is depicted in the organogram, included in Appendix A of this report.

It is not the headquarter's function to undertake road works in a direct sense but rather to ensure that work is carried out according to standards, priorities and programmes formulated by Headquarters and subsequently executed at the regional level. The Regional Office administration is headed by the Regional Engineer and assisted by engineering and administrative staff in the ten regional offices and 32 district offices.

The DFR is largely decentralised "avant la lettre": Of the total staff of some 660 only some 60 are located at the home office. The essentially locally based operations reflect responsiveness to local stakeholders.

DFR's top management consists of a Director and a small group of senior officers managing the main sections. The style of leadership tends to be personal, communication lines are short. Key leaders are motivated by job satisfaction rather than by remuneration (motivation being consistent with stated purpose of the organisation). The culture in the relatively lean organisation is informal, strong commitment, even "family feeling" are reported. In ODICTP it is concluded: "... DFR as part of MRT is generally viewed as one of the more efficient and progressive organisations within the public service ...".

The compactness of the management is an asset, but at the same time the reliance on the small number of senior executives constitutes a risk, particularly because the middle management level is considered the weakest point in the organisation.

Major changes are underway as a result of GoG policies on decentralisation, as is described in section 3.4 of this report

Mission statement, policy objectives and SWOT

Mission statement and policy objectives

The mission statement of the Department of Feeder Roads, as formulated in the 1995-2000 Strategic Plan is as follows: to improve and maintain the entire National Feeder Road Network to higher levels of accessibility at optimum cost through planning, development, rehabilitation and maintenance; to open up and link areas of agriculture potential to stimulate production, enhance the movement of goods and people and support other small economic activities and reduce transport/vehicle operating cost.

Ghana-Vision 2020, the First Medium-Term Development Plan (1997-2000), Programme of Action (NDPC, June 1998) further elaborates on issues and constraints, programme objectives and activities pertaining to the situation around 1996 in the feeder roads sub-sector:

Issues and constraints

- § Poor feeder road network resulting in poor accessibility.
- § Poor transportation network and services.
- § Long waiting and travel times and physical damage to commodities in transit.
- § Shortage of investment capital.
- § Insufficient manpower.
- § Weak administrative and accounting systems and reporting.
- § Inadequate data base for effective planning.
- § Inadequate private consulting and contracting capability.

Programme objectives

The key objective is to clear the backlog of rehabilitation on a sustainable basis, with little emphasis on new development. The specific objectives are:

- § Improving and maintaining the entire national feeder road network on a sustainable basis and aiming at higher levels of accessibility at optimum cost through planning, development, rehabilitation and maintenance.
- § Improving the institutional capacity of DFR to sustain the feeder road programme over time.
- § Providing improved feeder road access at reduced transport cost for goods and people.
- § Promoting greater private sector involvement in the execution of road works.
- § Using sound economic principles and decision criteria for investment in rehabilitation/reconstruction activities.

Programme activities

- § Strengthen the capacity of district works departments to manage the network of feeder roads.
- § Transfer functions, legal competencies and resources to District Assemblies.
- § Establish a digital map to enhance roads network planning.
- § Construct missing links with potential production centres.
- § Encourage greater use of labour-based technology.
- § Improve capacity of DFR to evaluate environmental impact.
- § Place emphasis on routine and periodic maintenance.
- § Develop private sector capacity (contractors, consultants).
- § Establish a comprehensive and reliable database for planning.
- § Decentralise decision making and operational functions on feeder roads.

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SWOT

In the Strategic Plan 2000-2004 (February 2000) a SWOT is included.

Strengths

- s Loyalty and commitment of management and staff.
- s Ability to appropriate land for road construction.
- s Availability of highly qualified engineers and other professional.
- s Donor attraction to rural development programmes.
- s The implementation of cost effective road construction/maintenance technology.

Weaknesses

- s Limited financial resources for achieving targets.
- s Inadequate in-house capacity for contract supervision.
- s Unmotivated staff as a result of poor remuneration.
- s Weak accounting systems resulting in inability to meet expected programming and report schedules.
- s The rapid deterioration of gravel surface roads resulting in unexpected demand for funds not budgeted.

Opportunities

- s Availability of consultancy capacity for the provision of support services.
- s Availability of donor support for feeder road rehabilitation and maintenance.
- s Proposed increases in Road Fund allocations to support maintenance activities.

Threats

- s Over-reliance on donor support.
- s Premature takeover of DFR District Offices by District Assemblies.
- s Inability to recruit and keep staff due to government freeze on employment and poor staff remuneration.

Human Resource Development

In line with the shift to contracting out works to the private sector, the total labour force decreased from some 3,000 at the end of the seventies and about 1,500 in the early nineties, to around 660 at present.

In the tables 2-4 the personnel composition is shown as to:

- s Professional age range.
- s Regional distribution.
- s Comparison MRT, GHA, DFR and DUR.

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Table 2 DFR staff structure and its distribution as at 31 March 2000

Grade	Strength	HQ	GAR	V/R	CR	E/R	W/R	ASH	BAR	N/R	UER	UWR
Top Executive	4	4										
Engineering Staff	33	8	2	3	3	4	4	3	3	3	1	2
Quantity surveyor	11	5	1	1	1	-	1	1	2	2	1	-
Other Prof. Staff	3	2	-	-	-	-	1	-	-	-	-	-
Administrative/Managerial	4	3	-	-	-	1	-	-	-	-	-	-
Technical Engineer Civil	14	1	1	3	-	2	3	1	2	-	1	-
Technical Engineer Geodetic	11	-	-	1	2	2	2	1	1	2	1	-
Technical Engineer Quantities	8	-	1	1	-	-	-	1	1	1	1	-
Tech. & Sup. I (STO-CTO)	20	2	-	2	1	2	3	3	2	1	2	2
Tech. & Sup. II (TA-PTA)	15	-	3	3	1	2	-	-	-	4	2	-
Works Superintendent	40	-	-	10	1	4	2	11	6	1	2	3
Foremen	82	-	5	6	11	18	13	7	10	6	3	3
Road Overseers	20	-	-	-	-	-	-	11	-	9	-	-
Skilled Workers (Operators)	95	-	10	8	14	5	13	14	8	9	6	8
Clerical/Secretarial Staff	55	14	4	4	5	5	4	8	3	4	2	2
Semi-Skilled & Unskilled	247	26	8	36	15	31	25	28	27	24	15	12
Trainees/Apprentices												
Total	662	65	35	78	54	76	71	89	65	66	37	32

Table 3 Department of Feeder Roads professionals age range

No.	Rank	Age range
1	Director	53
4	Chief Engineer	47-57
6	Principal Engineers	41-45
9	Senior Engineers	38-42
5	Engineers (Civil)	36-42
12	Asst. Engineers (Civil)	29-43
1	Geodetic Engineer	46
1	Chief Quantity Surveyor	51
3	Principal Quantity Surveyor	42-47
1	Senior Quantity Surveyor	39
1	Quantity Surveyor	39
4	Asst. Quantity Surveyor	33-36
1	Chief Tech. Engineer (Geo)	55
2	Asst. Chief Tech. Engineer (Geo/Civil)	46-48
2	Principal Tech. Engineer (Geo/Civil)	47
13	Senior Technical Engineer (Civil/Qty/Geo)	36-51
17	Technician Engineer (Civil/Qty/Geo)	27-53
3	Chief Tech Officer	45-52
4	Asst. Chief Tech. Officer	47-50
1	Principal Tech. Officer	50
2	Senior Technical Officer	39-47
3	Tech. Officer	35-41
1	Chief Works Supt	51
26	Works Supt	44-56
82	Foremen	31-56

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Table 4 Staffing by category

Category	DFR
Engineering, including top executives	37
Accountants, Quality Surveyors and other Professionals	13
Technical Engineers	13
Technical and Supervisory Staff, incl. Works Superintendents, Foremen and Road Overseers	177
Non-professional Administrative, Accounting, Stores and Clerical Staff	59
Skilled workers and tradesmen, including drivers and operators	95
Semi-skilled and unskilled staff, including trainees, apprentices and security personnel	247
Total	661

Source: Crown Agents, Analysis Report, February 2000

The major conclusions from tables 2-4 are:

- § Understaffing of engineers at regional level.
- § High age profile.

This imbalance is mainly due to restrictive general government policies beyond the reach of DFR.

The DFR Strategic Plan 1995-2000 states that within the strategic period, emphasis will be placed on recruitment of engineering and other professional staff. Due to the general recruitment constraints imposed by the government on all MDAs this objective has not been achieved during the evaluation period.

In the ODICTP Analysis Report mentioned some conclusions are drawn on HRD in DFR.

- § Very basic data available on human resources and little analysis is undertaken to allow conclusions to be drawn from it. Information available includes numbers employed, by department/function/grade, but no trends over time.
- § There is little evidence of general understaffing, but a critical shortage of some skills especially in some locations.
- § As such there is evidence of organisational under-performance.
- § There are considerable difficulties in filling posts, which require professional qualifications, or particular skills in demand in society at large. This is largely for reasons of poor remuneration.

Despite thorough analysis, the extensive ODICTP report does not provide much information on behalf of the present evaluation with respect to the HRD situation in 1996 and 2000 and the development in between. Basically, it is not believed that conditions changed significantly, since no specific actions by GOG or donors in the field of HRD (except training, see below) took place during the evaluation period.

Based on interviews, the following general conclusions have been drawn for the HRD situation in DFR in the period 1996-2000:

- § Since 1987 the DFR has a dedicated Human Resource and Training Department.
- § While the information on staff records is not very detailed and databases are not very well organised the organisation is relatively small and the management is well abreast of available capacities and needs.
- § There is a strong need for extension of the executive management with two senior professionals.

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- s At the regional and local level additional engineering staff is urgently required to allow for implementation of decentralisation.
- s The total number of DFR personnel is still gradually decreasing. DFR will continue to trim its lower staff to reduce size and ensure compact and efficient organisation. This will occur in line with ongoing outsourcing of maintenance work to the private sector (major works 100 % already for quite some time; routine maintenance from 85/15 % in 1996 to 92/8 % at present.

Training

Training objectives are formulated in the document Training Policy, Objectives and Strategy, reference CW/ILO (1995):

Overall training objectives

To provide the resources (that is the facilities, finance, opportunities and supportive environment) 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.

Training objectives

- s To establish annual training needs with regard to Departmental goals, available resources, achievable options, budgetary constraints, etc.
- s To research all available in-house, local external and foreign training resources and to assess their suitability and potential to meet the defined training needs.
- s To design a co-ordinated annual training programme to meet identified training needs, including the definition of objectives, trainers syllabi etc., within the limits of the annual budget.
- s To implement, control, and monitor all aspects of the annual training programme.
- s To plan, organise, implement and evaluate an expanded and enhanced training capacity within the labour-based Training Centre infrastructure at Koforidua.
- s To assess the training needs of the management of DFR's contractors and to organise appropriate training.
- s To evaluate the results of training and the achievements of training objectives and to review and improve training where indicated.
- s To prepare administer and monitor annual training budgets, according to Government regulations and in a manner conducive to planning and evaluation.

Specific Training Aims

- s To organise all aspects of training in a systematic, structured and cost-effective manner.
- s To provide sufficient and appropriate training to enable staff at all levels to perform their work as efficiently and effectively as possible.
- s To encourage and facilitate a wide knowledge of the role, function and objectives of the Department and of the employee's important place in that structure.
- s To encourage all staff to develop good communication and interpersonal skills, so that they are able to communicate and relate effectively with colleagues at all levels.
- s To encourage long-term career development and commitment of staff at all levels.
- s To ensure that all staff is made aware of new developments, changing concepts and technological innovation affecting the performance of their appointed tasks.
- s To regularly review the relevance of and compliance with the training policy.

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The training objectives are well understood by DFR. However, practical implementation evidently depends on financial resources. From the regular budget, very little is made available for training. The vast majority comes through donor funded projects/programmes. These are:

NFRRMP

- § Training for DFR and Local Contractors, provided at GHA's Central Training Centre (CTC), its Road Training and Production Unit (RTPU) and its Mechanical Training and Production Unit (MTPU). Annual training programmes have been developed by CTC aiming to integrate training requirements of GHA, DFR, DUR and contractors. Co-ordination by MRT is required here.
- § Training for labour-intensive contractors is organised at DFR's Koforidua Training School.
- § As part of the institutional development it was considered important to expose DFR's engineers, economists and high level technicians to modern technology, planning and programming, execution of road works, contract supervision and control. Under the NFRRMP, UDAID has funded overseas training for DFR staff comprising participation in seminars, short academic and practical courses and graduate degree courses.
- § Under the technical assistance services, financed under the project (mainly Danida), DFR staff has received comprehensive on-the-job training.

According to the World Bank's evaluation of NFRRMP (see Implementation Completion Report on NFRRMP) the objective of "improving the institutional capacity of DFR..." was achieved and the component "overseas training for DFR staff and support to the Koforidua Labour-based training school" was considered successful. Moreover, it is concluded that DFR enjoys a reputation as one of the best feeder roads agencies in the African Region; it is technically well placed to deliver services on the network; and it enjoys a high professional output from its headquarters and regional staff.

The DFR "Review of the Implementation of the First Medium Term Development Plan (1996-2000)...", April 2000, does not consider training efforts during the evaluation period.

HSIP, RSIP

The Staff Appraisal Report of the Highway Sector Investment Program does not dwell explicitly on training. Neither do the reports of the Road Sub-Sector Investment Programme (RSIP) in which the HSIP subsumed.

ODICTP

Formally, the project is beyond the scope of the present evaluation since project implementation started in 2000. However, the extensive reporting on the state-of-the-art in MDA's provides useful material for the institutional analysis. Some conclusions with respect to training within DFR have been achieved through detailed Training Needs Assessment (TNA), based on available information on Staff Records, Training Records, Job Descriptions, Current and Past Training Programmes, resulting in Occupational and Individual Training Needs. However, the extent to which identified needs can be satisfied and recommended programmes can be implemented depends on the funds to be made available during the execution of ODICTP (2000-2002). In the Analysis Report, little is said about co-ordination with other donor interventions in the roads sub-sector

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including training components. The Evaluation Mission considers this co-ordination requirement first priority.

In recent initiatives Danida (see Transport Sector Programme Support, 1999-2003) and DFID (see support to Rural Feeder Roads) include minor financial contributions to training programmes. Most of these training activities are under Foreign Technical Assistance, vied below.

DFR's ongoing three-year rolling training programme incorporates the use of Koforidua Training Centre, in-house courses, consultants and in-country institutions, covering:

- § Technical training.
- § Management training.
- § Career development training.
- § Administrative skills training.
- § A workshop is held each year in October, with the ten Regional Engineers of DFR attending to update the programme.

MRT is to co-ordinate training programmes between MDA's. In 1998, a workshop on training programme co-ordination has been organised. The Evaluation Mission feels that in practice not much co-operation exists in a sustainable way. The ODICTP proved to be instrumental in this respect.

Training local contractors, consultants

As mentioned in the 1995-2000 Strategic Plan DFR makes extensive use of the private sector in terms of road construction and consultancy services. This has contributed significantly to the development of the local construction industry and consulting industry capacity. Nonetheless, continuous training and strengthening in these area are required to enhance their skills for good quality construction work and engineering design. Local Consultants would be encouraged to form joint ventures with foreign consulting firms to improve their competence as well as technology transfer. Within the plan period DFR proposes to continue its purpose-designated training programmes for the different categories of staff both at the local and overseas levels to increase the managerial and professional competence of its personnel to match the increasing workload of the department.

Overseas, in country training

Overseas training has been an integral part of NFRRMP. It is considered an essential component of the overall training programme. Not only because of its effectiveness but also because it is seen as an important incentive for DFR staff. It is feared that if the emphasis is shifting to in-country training (probably implicit in ODICTP), qualified staff might move in view of the otherwise modest remuneration of DFR. On the other hand, overseas training might increase the market value of some staff, endangering their loyalty to the organisation.

Training facilities

During the end of the 1980s the DFR Training School Koforidua was established under the pilot Feeder Roads component of the Rural Road Maintenance Project. The basic purpose was to train DFR staff and selected contractors in labour based maintenance technologies. The school ran a series of successful training programmes. Under NFRRMP, the school was given support for improvement of the facilities, jointly sponsored by Danida, USAID and GoG. Being the only school of its kind in the sub-

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region specialising in labour-based technology, the school is gradually gaining recognition among donors and other African countries as a model training school.

Foreign Technical Assistance

The DFR 1995-2000 Strategic Plan confines itself basically to planning and execution of road works and its funding. Nothing explicitly on FTA. Also the SARHSIP and RSIP reports do not deal extensively on FTA.

NFRMP included a substantial FTA component in:

- § Rehabilitation, regravelling, construction projects.
- § Organisation and management.
- § Maintenance Performance and Budgeting System development
- § Socio-economic impact studies.
- § TA to DFR in project management, road planning, road maintenance.

Recently, Danida (in context of Transport Sector Programme Support, 1999-2003) initiated TA associated with:

Support for the development and expansion MPBS on the maintainable network

Support for decentralisation of DFR

Cross-cutting issues: environment, road safety and opportunities for women.

General appreciation MRT in Review Report 1999 Donors Conference: Although significant strides have been made in the utilisation of local capacity, the road sub-sector is still dependent on foreign technical assistance, mainly due to the following:

- § Conditionalities of donor agencies which insist on the use of foreign consultants in providing technical support to road agencies because of the perceived inadequate national capacity.
- § Lack of highly trained and experienced road engineers in the private sector to compete with foreign consultants.
- § A more determined effort has to be made in particular within the road agencies to engage and retain trained, experienced local road engineers to develop capacity to effectively supervise all consultants to achieve improvement in their performance.

One of the objectives of Road Sub-sector Sector (Policy Letter, ToR) is to reduce dependence on foreign technical assistance and increasing training and performance of local staff. As to DFR, the share of FTA in capacity building is probably increasing. It could be that the size of the substantial FTA component in the recently started the Danida and DFID interventions constitutes a trend. This might be due to increased donor interest in development themes like rural poverty alleviation (hence feeder roads).

Most donors are gradually shifting from traditional project or programme oriented technical assistance support to (sub)sector oriented financial contributions. Provided that the recipient country shows “good governance”, the spending of the financial assistance is to a large extent up to the recipient. Although explicitly stated in general terms, this policy is apparently not practised (yet?) in the Ghanaian roads sub-sector.

Decentralisation

Government policy decentralisation feeder roads

Despite many attempts to pursue decentralisation since the early 1980s, little progress has been made. A principal achievement has been the enactment of “The Local Government

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Law of 1988” (No 207), but many delays have been incurred in its implementation. Law 207 deals with virtually every aspect of local government such as Regional Co-ordinating Councils, District Assemblies and Metropolitan Authorities. However, its primary focus is on the district governments.

The primary strategy of the decentralisation effort, as defined in Law 207, is to devolve the central government’s administrative and political authority to local levels (i.e. regions, districts, towns and villages), with the District Assembly being the centre of administrative and political authority.

Among the principal functions of the 110 district governments are the following:

- § Supervision of the field operations of 22 government departments (amongst others DFR and DUR).
- § Responsibility for overall development of the district.
- § Preparation and submission of annual development plans and budgets.
- § Formulation of programmes and strategies for mobilising and utilising district human and financial resources.
- § Promotion and support of productive activity and social development.
- § Initiation of programmes for the development of basic infrastructure, municipal works and services.

Decentralisation of DFR operations would entail the execution of feeder road maintenance in each of the 110 districts, organised by Works Departments of the District Assemblies.

Donor support to the decentralisation process

One of the objectives of the 1992-1999 NFRMP (see the World Bank Staff Appraisal Report, 1991) was to assist DFR in its decentralisation. The DFR decentralisation support component funded by the IDA was intended to provide assistance for analysis, experimentation and implementation concerning:

- § The decentralisation of DFR.
- § The development of appropriate administrative and financial capacities in the District governments.
- § The negotiation of appropriate relationships between DFR and the district governments.

Specific activities of the decentralisation support component were:

- § Execution of short studies of actual and potential institutional arrangements for routine feeder road maintenance in pilot districts during the first two years of the project. These studies would examine the incentives needed for individuals and communities to:
 - maintain feeder roads;
 - contribute funding for routine maintenance.
- § Monitoring of the flow of routing maintenance funds to and from districts and producers of road maintenance.
- § Improvement of district maintenance planning of feeder roads.
- § Improvement of district financial management and accounting capabilities.
- § Facilitation of development and implementation of mutually supportive project planning and control processes in DFR and participating districts.
- § Assistance to districts with identification and negotiation of sustainable institutional arrangements for feeder road routine maintenance.

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- Monitoring and evaluation of alternative institutional arrangements for routine feeder road maintenance.

In the Implementation Completion Report on NFRRRMP (World Bank, December 1998) it was concluded that the decentralisation support component was only marginally successful. Most of the specific objectives have not been achieved.

In the World Bank Staff Appraisal Report of the 1996-2000 Highway Sector Investment Program (April 1996), no mention is made of the decentralisation issue. Effectively, the NFRRRMP activities continued during this period. Subsequently, the Roads Sub-sector Investment Programme of MRT (RSIP) is very brief on decentralisation: Decentralisation policy reforms for Department of Feeder Roads and Department of Urban Roads are ongoing where responsibilities for maintenance are gradually being handed over to local authorities. MRT prefers a systematic, stepwise approach that will ensure sustainability". The MRT report on RSIP of December 1999 does not give any details on actions undertaken.

Recently, at the end of the evaluation period and beyond, the decentralisation issue is gaining momentum. The following leads are relevant:

- DFR Policy document Strategic Plan 2000-2004 (February 2000).
- DFID Support to Rural Feeder Roads (DFID Project Submission Report, March 1999).
- Danida Transport Sector Programme Support (TSPS) Ghana 1999-2003 (Sector Programme Support Document, April 1999).

The initiatives developed in these programmes are dealt with below.

Appreciation of the decentralisation issue

Decentralisation is principally a political decision, adopted by governments to delegate power to lower level government bodies. The aim is to increase democratic governance and to allow greater participation through local politics. Decentralisation could also have some economic advantages in that it enhances the use of local knowledge in the decision-making process, and encourages competition and the transfer of "best practices". Hence, policy decisions and resource allocations reflect the needs and constraints of the local people.

Further, economies of scope could be achieved if road maintenance is one of the activities to be integrated in a "Works Department", together with water, sanitation, rural housing and public works in the District Assembly administration.

However, diseconomies of scale could emerge if full decentralisation is pursued at an administrative level as low as the present district assemblies. It is feared that the organisational capacity of many districts will remain too weak for a considerable time to come. Moreover, the required executive staff, capable of both planning and managing road maintenance, will not sufficiently be available at the district level.

Practical problems in transition phase are:

- Financing the decentralisation process.
- Remuneration of engineering staff transferred to the District Assemblies.
- Logistical support (accommodation, transport).

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Proceeding of DFR decentralisation during evaluation period

In 1996 and 1997, the DFR commissioned a local consultant to undertake a pilot study in six selected District Assemblies in the Eastern Region to unearth the institutional, managerial and financial problems that are to be addressed in both the transitional and ultimate phases of the decentralisation programme. Under the project, the six District Assemblies were provided with some staff and logistics to plan, manage and execute some road maintenance works in the Districts. Proposals were also made by the consultants for improving the technical, institutional and resource capacities in the pilot District Assemblies.

Conclusions from the report on the pilot decentralisation (MRT, DFR, *Consultancy Services for Feeder Roads Maintenance Decentralisation in Six Selected District Assemblies, Report on Proposals*, Plan Consult, 1996):

- § Owing to staffing and logistic constraints, the decentralisation of DFR should be implemented in phases.
- § The responsibility for routine and recurrent maintenance activities of feeder roads should be transferred to the districts in a period of two years.
- § The ultimate transfer of all DFR decentralised functions could be achieved between five and ten years.

In 1998 and 1999, following the pilot study, the DFR decentralised to ten districts. Technician engineers and foremen have been attached to each of the District Assemblies. Further, the DFR has partially decentralised to 12 other Districts by posting foremen to them.

Experience has been built up by the feedback given by DFR staff transferred to the District Assemblies:

- § Integration of transferred staff into the District Assembly system has not been smooth. The transferred staff is not involved in many works activities of the District Assemblies.
- § The salaries of the transferred staff are still provided by DFR because of the inability of the District Assemblies to obtain the necessary budgetary approval.
- § The District Assemblies are not providing the necessary logistics support to the transferred staff.
- § Many District Assemblies have indicated their inability to provide residential accommodation for the transferred staff.

A number of difficulties are expected in further decentralisation:

- § As has been outlined in chapter 3.2.3 above, DFR is facing staff constraints in the number of technical staff (it has only 33 graduate civil engineers, ten graduate quantity surveyors and 23 technician engineers). Further decentralisation is seriously hampered by shortage of appropriate skills.
- § District based engineers will be required to work in roads, water & sanitation and housing. Education and training shall have to be geared to these requirements.
- § Office and residential accommodation for DFR staff is not available in most District capitals.
- § The DFR is lacking sufficient transport for project preparation and supervision to be distributed to District Assemblies.

3.3 Department of Urban roads

Organisation

History and legal status

The Department of Urban Roads (DUR) was established in 1989 as an implementing agency within the Ministry of Roads and Highways (MRH). DUR has the responsibility for the entire network within five cities (Accra, Kumasi, Secondi-Takoradi, Tema and Tamale) and the urban areas of the Greater Accra 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 Ghana Highway Authority

The role of the DUR is embodied in the legislation formulating the MRT and it's authority flows from this. DUR is therefore subject to central governmental budgetary policies and procedures, personnel procedures (appointments, promotions, pay etc.) procurement and central government financial, managerial and economic policies. It obtains its resources from parent MRT and is governed by its procedures e.g. tendering.

Structure

In the current situation DUR operates through headquarter in Accra and five Road Units (RUs), working closely together with the road units of the Metropolitan Municipal District Assemblies (MMDAs).

In accordance with the decentralisation policy DUR activities are transferred to the MMDAs. In 1990, the Accra Metropolitan Roads Unit assumed responsibility for maintenance of Accra's roads, following strengthening of the unit. The pilot was followed by the shift of responsibilities in the other cities. In the long run headquarters of DUR will decrease in size focusing on planning, co-ordination and monitoring activities only, placing the responsibility for the majority of the activities with the MMDAs. Currently, efforts are made to build up capacity at the MMDAs in order to facilitate this process.

Due to continuing public service reforms through NIRP, PUFMARP and CSPIP, widespread changes in governance are taking place over time. On the one hand, this provides greater pressures and objectives on the DUR whilst, as a central government organ, not allowing it sufficient flexibility in operation to achieve these objectives. Constraints on recruitment and in budgeting and expenditure management are particularly important.

The DUR is also in the midst of changing its role as its direct role in planning and implementing the urban road network is increasingly decentralised to Metropolitan and Municipal Authorities. The Act of 1989 formulated the DUR, but was followed by the Act of 1992, which introduced Metropolitan and Municipal Assembly roles in urban roads. However, there is a lack of clarity in this development, as the decentralised authorities currently tend to spend their resources on other services, such as sanitation. Therefore there is a suspicion within DUR that decentralisation will bring about a different balance of expenditure to the detriment of the urban road network. In future, DUR may develop more towards a department within MRT dealing with the formulation of policy in urban transport and facilitating action and research and development in urban roads.

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The organogram of DUR is presented in Appendix A.

The structures are essentially consistent with the purpose of the work of the organisation. The structure is in the process of changing to accommodate the decrease in donor funding by a gradual winding up of the Project Management Unit. It should be noted that in April 2000 a road safety specialist was officially appointed.

DUR's top management consists of the Director and a group of senior officers who essentially manage the main sections (Accountant, Maintenance, Quantity Surveying, 6 Regional Engineers, Administration, Traffic, Development and Programme Management).

The style of leadership in such a relatively small organisation tends to be close knit and team-based. "Everyone knows what DUR stands for" is a typical comment. Decision-making is largely consensual and consultative, but as the senior staff are mostly trained engineers and not trained in management, this is somewhat haphazard.

Management is essentially co-ordinated through collective and individual meetings of the Director with senior staff. There are bi-weekly headquarter management team meetings of key managers and their deputies, a quarterly meeting of the management team with the senior engineers of each city and a quarterly durbar of all headquarter staff except junior staff. There is a lively social function within DUR, which also acts as an information forum on an informal basis. There are regular business meetings between DUR and MRT and other governmental agencies regarding resources and policy. In addition there are also regular meetings with clients and users.

There are no published documents describing the values of the organisation, other than the outdated Civil Service Code. DUR exhibits commitment to performance and pride in the organisation. Morale is higher than many other departments of government.

Mission statement, policy objectives and SWOT

Mission

The DUR will assist in building capacity in the MMDAs for the planning, development, maintenance and administration of urban roads and to develop, monitor and evaluate quality management systems for efficient, safe and affordable mobility for goods and people.

To achieve the above, the following key result areas have been identified (see 1999 Annual Report DUR):

- § Overall Urban Road Systems, planning, development and maintenance.
- § Strengthening of the District Road Units.
- § Traffic Planning and Management.
- § Provision of Engineering support for Roads Safety Planning.
- § Negotiating with Donor Agencies for funding of capital projects.
- § Institution of public accountability and efficient use of public funds in the management of urban roads.
- § Staff motivation and development.
- § Poverty alleviation and environmental improvement.
- § Regular consultation with MMDAs through various committees of the Assembly and the operations of the Road Units.

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- Implementation of an agreed timetable for decentralisation of responsibility and resources to the MMDAs.

Objectives

The program objectives (development and maintenance) as defined by DUR in their 1999 annual report are:

- Consolidate and expand the arterial road network to provide adequate capacity and improve intersection capacities to achieve an improved flow.
- Institute traffic management measures, which will reduce traffic congestion, minimise pedestrian/vehicular conflicts, improve pedestrian facilities, and effectively ensure safety for pedestrian and vehicular operations.
- Reduce vehicle operation and maintenance costs.
- Strengthen the institutional support and build the professional capacity required to implement, manage and monitor the programme.

Strengths, Weaknesses, Opportunities and Threats (SWOT)

In the 1990 annual report DUR defines its strengths, weaknesses, opportunities and threats in the following way.

Strengths

- Committed and dedicated work force.
- Team spirit.
- Good training program which acts as motivation.

Weaknesses

- Inadequate office space.
- Inability to retain staff under present working conditions.

Opportunities

- Political goodwill to achieve the objectives as defined.
- Available capacity in terms of external and local consultants and contractors to implement the program.
- Secured source of funding for road maintenance by establishment of the Road Fund.

Threats

- Donor support for urban roads and maintenance has become scarce.
- Inability of MRT, MLGRD, OHCS to agree on modalities for systematic decentralisation.
- Interest groups bring pressure on DUR's operations.
- Low salaries.
- Uncontrolled land use.
- Non co-operation of U.A. in the implementation of the Manual for Co-ordination.

Strategy and targets

DUR has defined a number of strategic actions to overcome the weaknesses and threats mentioned in the SWO analysis:

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- s Develop a more systematic method for planning, budgeting, monitoring and control of maintenance activities.
- s Better collaboration with the assemblies. Drive to keep assemblies better informed of programs initiated to help strengthen the MRU's.
- s Provision has been made in the Urban Transport Project (UTP) for developing an office block.
- s In Urban II and UTP, provision has been made to provide basic equipment for road maintenance bearing in mind the policy to increase private participation.
- s Be proactive in education of the public on issues of safety, and effective use of road facilities.
- s Use the staff performance appraisal to focus and plan better staff training.
- s Program of action for decentralisation, indicating the role of all parties; MRT, DUR and MMAs.
- s Active participation in planning committee's of assemblies.

Organisation and Human Resource Development

Organisation

As per 31 December 1999 DUR employed 461 staff. An overview of the functions within DUR as well as the distribution of staff over the headquarters and the road units.

Table 5 Present staffing of DUR

Function	HQ	Accra	Kumasi	Takoradi	Tema	Tamale	Amasaman	Total
Geodetic engineer	2		1					3
Engineer (civil)	17	4	1	2	2	1	2	29
Tech. Engineer (civil)	8	5	2	1	2	2	2	22
Tech. Officers (civil)	4	5	4	3	3	5	1	25
Qty. surveyors	2	1						3
Tech. Engineer (qty)	6			1	1	1	1	10
Tech. Officers (qty)	1	1	1		2	1		6
Tech. Eng. (mech.)	2	2						4
Works supt.		20		1	5	4		30
Foremen	1	23	2	7	6	1		40
Tradesmen		11	6	4	3	3		27
Operators		6	5	5	14	1		31
Auto mechanic			1			2		3
Fitter				1				1
Electrician		1	1		2	2		6
Blacksmith		5			2			7
Road overseer		1	1					2
Executive class	2	6	2		1	2	1	14
Supply officer	1	5	1	3		2		12
Accounting class	6	4	3	2	6	2	2	25
Secretarial class	6	3	1	2	2	2	1	17
Security	3		5	4	2	2		16
Headman		21	25	14	8	8		76
Telephonist		2						2
Drivers	4	19	7	2	13	2	3	50
Total	65	145	69	52	74	43	13	461

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Through the years DUR has gone a downsizing process. In 1996 at the start of HSIP 550 people were employed. This number has gone down to 461. In 1999 in total 22 persons left DUR of which seven engineers, eight technical officers and seven other staff. With ongoing decentralisation and transfer of tasks to the MMDAs staff reduction will continue.

Age, skills, experience and gender

The management team of DUR is a relatively young team. The functions are presented in table 5.

Attitudes to gender are not traditional, especially given the nature of the work of DUR which traditionally has been a male preserve. Two engineers are women and there is a strong desire to improve the number of women in senior positions.

Human resource management

Only basic data is available on the use of human resources. Little analysis is undertaken to allow conclusions to be drawn from the data. Information available includes:

- ⊞ Numbers employed, by department/function/grade (no trends in time).
- ⊞ Vacancies (no turnover analysis).
- ⊞ Training requested (no data on the availability of skills).

Very little information is available on absenteeism and timekeeping.

Career planning is not well developed. New personnel is first trained at headquarters and are then send out to the cities (see the section on "Training").

Remuneration policy, constraints

In general the remuneration level is low. Good performance cannot be rewarded directly through remuneration but is the subject of recognition through management meetings, the Directors commendation and prizes at the end of year party. There are few sanctions for poor performance.

Retention of skilled staff and motivation, incentives

Key leaders are motivated by success, recognition and job satisfaction rather than remuneration. Other primary interests in such an under-remunerated organisation and society include additional provision of income and provision for retirement. Normal interest in success leading to promotion also exists.

Training

Recently, an extensive analysis study was completed on the organisations within the road sector and the training needs. Analysis was part of an overall project which will now move into its operational phase².

Training requirements

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.

Details of training are available in individual personnel files. Records are not in a form that could be used to monitor and evaluate training interventions.

² Crown agency report (2000).

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Training programmes

To give an indication of training activities in DUR, in 1999 the following activities have taken place: (i) three engineers left for a Master Course abroad, two of them will return in 2000 and one in 2001; (ii) eight other senior officers undertook various short courses with varying duration abroad; (iii) 20 senior and junior officers benefited from short courses locally; (iv) two seminars were organised for between 25-35 engineers and technicians on the new method for surface treatment and traffic safety.

In the period 1998-2000 a number of ongoing training programmes are in place for DUR. In the table below an overview is presented of identified needs in the draft training programmes 1998-2000.

Table 6 Identified training needs

Identified needs	Observations during analysis
<ul style="list-style-type: none"> s Contract administration and management s Highways materials and quality assurance s Environmental impact assessment s Management information systems s Pavement design construction and management s Contract maintenance management s Finance and general administration s Maintenance management of vehicles and plants s Bridge development, maintenance and supervision s Urban planning and traffic engineering s Urban road safety and accident prevention s Contractor supervision 	<p>Three year training programme is used as a guide only-actual training starts after the first quarter, depending upon funds available, programme driven by institution's time-tables and individual needs of staff.</p> <p>Up till now mainly World Bank funded, but no funds for 2000. Around 120,000 US\$ spent on training in 1999.</p>

Training local contractors and consultants is not within the scope of DUR.

Training capacity, facilities

The majority of the training programs are in-country. However, as mentioned above, Master Courses abroad can be attended and short courses with varying duration abroad can also be followed.

Funding

Training activities are partly financed by DUR and partly by donors. Given limited resources available to DUR there is a strong dependence on donor contribution.

Training as incentive

Clearly the training facilities are an incentive to work at DUR. Especially the foreign training programmes, notably the Master Courses, are a major incentive.

Technical Assistance

Limited technical assistance was provided to DUR within HSIP. In total three donor financed projects with a strong road component have taken place within the HSIP scope (1996-2000). These projects are presented in the table below.

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Table 7 HSIP projects in DUR, 1996-2000

<i>Programme</i>	<i>Donor</i>	<i>Loan/grant</i>	<i>Period</i>	<i>Main component</i>
Urban II	GoG IDA Nordic Fund OPEC	US\$ 2.40m US\$ 26.24m US\$ 4.40m US\$ 3.33m	1991-1998	<ul style="list-style-type: none"> § 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	<ul style="list-style-type: none"> § 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	<ul style="list-style-type: none"> § Kpanda overpass § Sankara interchange

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

Within Urban II a TA component was included aimed at financial, technical and management training. The Nordic Fund has financed some institutional support activities.

Within the UTP project a number of TA activities were defined:

TA activities	completed	Comment
Recruit transport planner	Dec 97	Contract extended for additional work
Recruit road safety advisor	-	Position not filled
O&M study of DUR	Aug 95	Completed
Recruit contract management specialist	Nov 95	Completed
Recruit municipal engineer	Sep 96	Completed
Design and implement an MMS	Sep 96	Completed, but problems with installation of database
Design and implement development control and Information system	Mar 99	Design completed at early stage, positive result, implementation has taken some time.

Within the Interchange Development project no was technical assistance included.

In the projects Urban II, UTP and Interchange Development over US\$ 170 million was involved. With the completion of these projects DUR is low on donor contribution. The World Bank has followed up with Urban II and IV, but the share of road related activities is low. France (ADF) is expected to start an urban road project soon. This could be explained by a focus of donor on poverty alleviation and gender impact, which would lead to more emphasis on rural roads. The ODICTP Analysis Report mentions in this respect: "Donor support to DUR is diminishing as donors move their focus towards their perceived poverty agenda in rural settings. This policy is disruptive, especially given the extent of urban poverty in the large cities in Ghana. There needs to be a continuing effort to improve donor understanding of the importance of development in the urban roads sector and to engage their support in achieving it. Despite the annual donor conference organised by MRT, donors tend to focus on individual projects rather than contributing to the sector as a whole."

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In the proposal for the road sub-sector investment program (RSIP) there is a statement that donors have not extended support to DUR's maintenance program and that donor support is needed to implement the 2000-2002 program.

Regarding consultancy services and institutional support DUR, table 8 below includes the following items in the RSIP.

Table 8 Proposed consultancy services DUR, as per RSIP

	Activity	Local cost (million US\$)	Foreign cost (million US\$)	Total (million US\$)
1	Feasibility and design and design review	0.56	5.04	5.60
2	Supervision of projects	1.11	9.99	11.10
	Total	1.67	15.03	16.70
1	Quality assurance expert	0.01	0.09	0.10
2	Urban public transport study	0.04	0.36	0.40
3	Digitised mapping	0.03	0.27	0.30
4	Road safety and public education	0.03	0.27	0.30
5	Traffic studies	0.02	0.18	0.20
6	Feasibility studies for future projects	0.03	0.27	0.30
7	DUR staff training	0.25	2.25	2.50
8	Operational cost	0.10	0.90	1.00
	Total	0.51	4.59	5.10

Source: Proposal for RSIP, submitted to the World Bank, March 2000

Based on the above it can be concluded that DUR is looking for a strong donor contribution in consultancy services and institutional support.

Decentralisation

Responsibility for routine and periodic maintenance and financial responsibility for routine maintenance is shifted to the RUs. This process will continue, Accra has now also financial responsibility for periodic maintenance. In the long run DUR headquarters will be a body responsible for planning, co-ordination and monitoring of activities. In addition to that it will continue to have the function of training institute for engineers.

DUR staff transferred to the RUs will remain employed by MRT. According to the law (Act 462) RU staff will be employed by MMDAs. So far the discrepancy between the legal and actual situation has not caused any problems. Time will tell how this situation will evolve in the future.

Personnel seem to prefer the status of MRT employee, including (international) training opportunities, over the MMDA status.

3.4 Ministry of Roads and Transport

Organisation

The Ministry of Roads and Transport (MRT) was newly established in March 1997, as a single Ministry responsible for all Transport Sectors. In the past, the Ministry of Roads and Highways (MRH) was responsible for the Road Infrastructure, while the Ministry of Transport and Communications (MTC) was responsible for the road transport service and other modes including rail, air, maritime and lake. The two Ministries were amalgamated to become MRT, in recognition of the fact that as transport plays a key role in the socio-economic development of the nation, therefore all transport modes should be co-ordinated under one single Ministry.

There are nineteen agencies under MRT for planning, co-ordinating and monitoring of the sectoral administration of all transport modes in the nation.

MRT administers the following six sectors:

- § Road Infrastructure.
- § Road Transport Services.
- § Rail Transport.
- § Lake or Water Transport
- § Maritime Transport
- § Air Transport

Under Road Infrastructure resort the executing agencies Ghana Highway Authority, Department of Feeder Roads (DFR) and Department of Urban Roads (DUR).

During the past few years, a number of significant changes took place in the organisation structure of the roads sub-sector. In 1997, the change from MRH to MRT, as described above. The “before and after” organograms have been attached in the Appendix. The MRT structure kept the main features of MRH in its functional set-up. Secondly, in 1998, the organisation structure “turned 90%, from basically “function driven in the MRH setting to basically “mode driven” in the MRT setting. The third organogram in the appendix shows the present organisation structure.

The present structure of MRT is in line with situations/developments elsewhere in most Ministries of Transport in the OECD world. Integration in the dual sense has been pursued:

- § Various mode of transport governed through one single organisation, and
- § Within one mode (e.g. the roads sub-sector), integration of infrastructure, traffic and transportation.

With respect to the functioning of MRT, some observations from the Analysis Report of Crown Agents on behalf of MRT: *Organisational Development and In-Country Training Programme for Staff In the Road Sub-Sector in the Ministry of Roads and Transport and Road Agencies in Ghana* (ODICTP, February 2000), are quoted:

- § “The structures, especially given recent changes, are essentially consistent with the purpose and the nature of work of the organisation.... It is generally clear and agreed how responsibilities are divided between staff.”
- § “The organograms often portray organisations that in some cases have barely 50% of those staff in post. There is an air of unreality about the prospects for filling the establishment which is the cause of some of the lack of staff performance...”

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- “The strategic direction of MRT requires a transformation and rationalisation of GHA and decentralisation of DUR and DFR to local governance. There is a lack of clarity about the policy and processes necessary to achieve these developments. There is also a lack of co-ordination with the other governmental stakeholders on the issues concerning re-invention of the subvented agencies, in the case of GHA; and on decentralisation with MLGRD, PWD, MoWH, CWSA and Ministry of Transport (fiscal decentralisation team), in the case of DUR and DFR.”

Mission statement, policy objectives

The role of the MRT, expressed in “Vision” and “Mission” as per “Strategic Plan 1999 – 2003” is as follows:

Vision

“In line with the overall national objective to become a middle income country by the year 2020, the Roads and Transport sectors’ vision is: To make Ghana easily accessible from the outside and have the transport system ensure easy access to all parts of the country to facilitate economic activity.”

Mission

“The Mission of Roads and Transport is to ensure the provision of an integrated, well managed and sustainable transport infrastructure and services that meet national objectives and international standards through:

- the formulation and implementation of policies that are responsive to the changing needs of the nation;
- promoting private sector participation;
- promote strategic investment in the sector;
- developing, implementing, monitoring and regulating standards;
- to establish safe, reliable, efficient, and affordable services for all transport users;
- to recruit, train and retain highly skilled human resources.

Policy objectives

MRT duly adheres to the objectives led down in the Policy Letter of February 1996. Subsequent policies have been summarised in the RSIP report of December 1999:

“The prime objectives of government for the road sub-sector in the medium term are:

- The clearance of the backlog of road maintenance and stabilise the road condition mix at 70% good, 20% fair and not more than 10% poor by the year 2005.
- The improvement of the road sub-sectors capacity to sustain road maintenance activities, financing and management and
- Improvement of systems and institutional structures in the implementation of the sector programme.

In developing a credible programme to achieve the above objectives in the medium term, while ensuring fair and equitable distribution of road infrastructure, a five-year rolling programme is being implemented under the sub-sector’s strategic plan. The first three-year slice of the rolling programme is an input to the government’s three year rolling Medium Term Expenditure Framework (MTEF).

The rationale and objectives of the MTEF are based on the recognition that resources are limited and the need to budget the limited resources efficiently to achieve the set objectives within a given timeframe. The MTEF process also provides the needed tools

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for determining the available resources (e.g. Road Fund, Consolidated Fund, Internally Generated Funds and donor assistance), estimation of actual cost and the required budget allocation needed to achieve set targets on an annual basis.”

Human Resource Development/Training

The Ministry developed a series of Human Resource Policy and Procedures Guidelines in 1997, prepared by consultants J.S. Martinson, but, according to ODICTP, have yet to be adopted by the MRT.

The guidelines include a policy for Career Development, which relies upon an annual appraisal procedure. The Director of Human Resources and Training submits the Year's Career Development Booklet, to include details of:

- s Health and Productivity of the Ministry.
- s Placement Summary Sheet.
- s Career Planning Worksheet.
- s Organisation Charts.
- s Appraisals of Performance.
- s Career Development Action Plans.
- s Performance Profile.
- s Age Profile.
- s Training Summary.

MRT is expected to play a co-ordinating role in HRD/Training matters over the MDAs in terms of: Administering human resource capacity (staff records), training needs, training facilities, inventory and monitoring of training programmes by MDAs and in donor interventions, in country and abroad.

Fulfilment of MRT's co-ordinating task is seriously hampered by lack of systematic information on HRD/Training. Maybe the individual agencies know what they are doing, the sub-sector wide overview is lacking, owing to different definitions, administrative systems, reporting.

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. To that end, a workshop with all MDAs has been organised in 1998, but as far as the Evaluation Team could see, no follow up has been given since.

To be able to act as a true co-ordinator, MRT's capacity has to be strengthened. ODICTP reports under MRT, Human Resource and Training, Identified training needs in italics: “Department understaffed. Skills and motivation of existing staff do not match those required to carry out the function of the division. This needs strengthening in terms of human, organisational, physical and IT resources. Individual members of the staff located in different parts of the building inhibit communication and effective team-work. Library being reorganised. *“Human resources management and Administration – comprehensive and extensive training and assistance in setting up systems, records management and monitoring procedures”*

Foreign Technical Assistance

Little direct FTA has been provided to MRT during the evaluation period.

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A major FTA component is included in “Organisational Development and In-Country Training Programme for Staff in the Road Sub-Sector in the Ministry of Roads and Transport and Road Agencies in Ghana” (ODICTP), which started with its Inception Phase only at the end of the evaluation period (end of 1999). The Analysis Report, containing Recommendations for a two-year programme of comprehensive institutional support is presently under consideration of MDAs. In ODICTP, an important co-ordinating role is foreseen for MRT.

Recommendations for ODICTP’s First Implementation Phase focus on priority areas:

- § Instituting a ‘change process’ to make maximum use of the available public sector initiatives to improve the MDA’s capacity and freedom to manage their human and financial resources
- § To establish the greatest possible clarity in the decentralisation process and the alignment of strategic action and performance indicators
- § *Technical assistance* to HR divisions of the MDAs to implement improvements of HRM systems and develop co-ordination of the Training Plans
- § *Technical assistance* to the MDAs to develop Quality Management Structures to co-ordinate the elements of operational delivery in order to achieve improved quality and value for money
- § *Technical assistance* to MDAs to assist in the development of the reporting process, focussing on the reporting of Key Performance Indicators and Organisation Development Performance
- § *Technical assistance* to DUR and DFR to develop and implement a basic bridge inventory and maintenance information system.

MRT’s view on the Policy Letter’s objective “...to reduce dependence on foreign technical assistance and increasing training and performance of local staff...” is rather ambiguous. On the one hand, there is the statement in the Review Report 1999 Donors Conference:

“Although significant strides have been made in the utilisation of local capacity, the road sub-sector is still dependent on foreign technical assistance mainly due to (i) Conditionalities of donor agencies which insist on the use of foreign consultants in providing technical support to road agencies because of the perceived inadequate local capacity and (ii) Lack of highly trained and experienced road engineers in the private sector to compete with foreign consultants. A more determined effort has to be made in particular within the road agencies to engage and retain trained, experienced local road engineers to develop capacity to effectively supervise all consultants to achieve improvement in their performance”.

On the other hand, substantial and probably increasing FTA will be required to effectively train local staff (as recommended in ODICTP and elsewhere) in order to achieve the objective of “... reducing dependence...” in the longer run.

Although difficult to assess in quantitative terms, the Evaluation Mission feels that the FTA has not reduced during the evaluation period and will probably not during the coming intermediate period. Due monitoring, and preparing/presenting alternative proposals to donors’ recommended interventions would become an increasingly important co-ordinating task for MRT.

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Summary

During the evaluation period, the most important institutional development was the change from Ministry of Roads and Highways (MRH) to Ministry of Roads and Transport (MRT). This restructuring brought all modes of transport and both infrastructure and transportation under one roof. Doing so, Ghana's institutional setting of the transport sector is on a par with what is generally recognised as the most effective organisational structure adopted in most of the OECD world and emerging economies.

Since its establishment in 1997, MRT is responsible for conceptual design and implementation of *Integrated Policy and Planning of the Transport Sector*. The notion "integrated" has several meanings:

- § 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 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.

The Ministry will be required to present a long term view (Master Plan) on infrastructure and transport developments, within the framework of a Master Plan, including Transport demand analysis & traffic forecasting, Infrastructure Planning, Investment assessment and Financing opportunities.

But first of all, the Ministry shall be fully aware of tasks and responsibilities pertaining to integrated transport policies. A first attempt has been made in the specification of Vision, Mission Statement, Strategies and Policies. This is considered a good initiative, which should be updated regularly, but more detailed and transparent specification of MRT's functions is deemed necessary.

A functional set-up (concise, not complete, just an example) could be:

- § Institutional: legislative and regulatory framework
 - standardisation (technical, administrative)
 - licensing
- § Demand management
 - modal shift
 - capacity planning
- § Investment policy
 - feasibility studies
 - prioritisation

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- § Financing
 - budget management
 - Road Fund
 - private finance initiative
- § Capacity building
 - within ministry: co-ordination between agencies
 - external: institutions, education centres, consultancy
 - management of facilities
- § International contacts
 - exchange of information/knowledge
 - donor co-ordination

Indeed, all such issues are addressed in one way or the other by MRT. However, usually in a rather ad-hoc and superficial way. It is acknowledged that MRT does not have all the required expertise in house. Much could be improved through systematic benchmarking: as to which developments elsewhere could be considered relevant for the Ghanaian situation. And take advantage of lessons learnt in other parts of the world: OECD, emerging economies, countries in transition.

As to the Roads sub-sector, the Ministry has the general responsibility as defined above and specific tasks in co-ordination and guiding the Agencies (GHA, DFR, 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 subsequently concentrating on the core tasks of planning and contract management, supervision and monitoring, within overall policy guidelines set by MRT; 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 (MRT, MLGRD, MoF) policies.

Institutional strengthening/capacity building shall support due pursuance of MRT policies, both at the general transport policy level as well as pertaining to the specific policies transition and decentralisation. To that end, the institutional focus distinguishes four angles: organisation structure, human resource development, training and foreign technical assistance. These subjects have been dealt with in detail in above chapters on the individual organisations. As to MRT, specific responsibilities in Institutional strengthening are:

- § Designing the overall framework.
- § Setting priorities.
- § Balance programmes and funding (GoG and donor contributions).
- § Co-ordinating the Agencies' activities.

MRT has an important role to play in the co-ordination of training programmes and foreign technical assistance. Training is almost completely funded through donor programmes. A considerable part is devoted to training overseas. By the Ghanaian authorities this is considered an important incentive to retain qualified personnel. On the other hand, training overseas does not contribute to strengthening of local training capacity, which is increasingly needed. ODICTP proposes a gradual shift from overseas to in-country training. Indeed, in view of the sustainability of local capacity development donor funding should be redirected to some extent.

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The objective of reduction of dependence on foreign technical assistance has not been achieved. FTA is also increasing through donor's preference for methodologies and technologies and associated expertise. It is recommended that FTA will be increasingly embodied in alliances between Ghanaian and overseas (consultancy) firms and institutions (research institutes, universities), instead of directly employed/hired ex-pats by donors.

Particularly with respect to the co-ordination function of MRT in HRD, training and FTA, it is felt that much can be improved.

4 EVALUATION

4.1 Relevance

One of the main features of the general policy of the Government of Ghana is the creation of an enabling environment. As formulated in Vision 2020 this includes amongst others:

- s To ensure full implementation of policies for a decentralised system of public administration.
- s To ensure that the public administration system becomes increasingly efficient and development-oriented, and is capable of effectively translating development policies into plans and programmes.
- s To ensure that all government agencies at all levels (national, sectoral and local) are adequately staffed and command sufficient resources to undertake their functions effectively
- s To periodically review the legal framework in order to ensure that the country's laws and regulations contribute positively to economic and social development and that those which inhibit development and impose unnecessary restrictions on enterprise and initiative are eliminated.
- s To gradually reduce Ghana's dependence on external aid, whilst maximising the effectiveness of aid in contributing to development objectives.

In the Policy Letter of February 1996 institutional development and capacity building are prominent objectives. Key words in these objectives are transition of GHA (reorganisation, reduction of staff, inauguration of the Board, establishment of legal framework), decentralisation of DFR and DUR, training and retention of staff, and reduction of technical assistance.

Institutional development and capacity building will be geared to the requirements stemming from the core tasks of modern road agencies, viz. strategic policy, planning, contract management, traffic management, traffic safety and environmental matters. The road works proper will (increasingly) be carried out by the private sector. The universal trends in road management are as indicated in the next box.

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Although major differences between European countries exist regarding transport policy and road and motorway management, some overall trends emerged from the comparative analysis. There is a clear tendency under European Road Administrations towards leaner national administrations managing a concise core network of national trunk roads. The other (formerly) national roads of lower classes have been/will be transferred to regional and local authorities. In road length, the core network might be modest, but in traffic terms it will carry the vast share. Next to the regular management tasks, traffic and information management is becoming an increasingly important activity.

In European countries, national road administrations will concentrate on general planning tasks (budgeting, contracting); the operational work has been/will be increasingly managed by regional road administrations.

The execution of works will be outsourced to the private sector to the maximum extent. It will include all maintenance works, design, construction and supervision, traffic guidance and information systems and toll road operations, and technical, economic, environmental and institutional (feasibility) studies.

Summarising European trends in road management, decentralisation trends emerge along two lines:

regional decentralisation from national to regional governments;

functional decentralisation:

- from central to regional road administrations;
- from road administrations to the private sector.

Source: Netherlands Economic Institute and Danish Road Directorate, Road and Motorway Management in EU Phare Countries, 1999.

Overall it can be concluded that the objectives in the field of institutional development are fully relevant and in line with the general Government policy and with the trend in current road management.

4.2 Effectiveness

In the field of *institutional strengthening* GHA has made considerable progress:

- § In 1997 the Ghana Highway Authority Act was re-enacted, making a clear demarcation of responsibilities and coping with the many changes which had occurred in the road sector.
- § At the end of 1999 a new, independent, Board was inaugurated.

On the other hand, GHA still experiences major problems in Human Resource Development: (i) shortage of engineering and other professional staff; (ii) excess of junior staff; and (iii) the average age of the staff is increasing. The group of semi and unskilled workers still represents GHA's past reliance on force account work. Although this group has already been reduced considerably during the past few years, ample room for further downsizing exists. As to the professional staff (engineering, technical, supervisory), the changing role of the Road Authority requires extension of the labour force in certain categories. However, despite the large number of vacancies, GHA is not in the position to attract additional senior staff due to the general policy of the Government of Ghana to limit the recruitment of new staff to replacements only.

The other road agencies (DFR and DUR) also have insufficient engineering and professional staff and are also affected by the general Government policy on recruitment.

Moreover, salaries at the agencies are low, as compared to the private sector and public utility organisations, making it difficult to retain qualified staff. There is a special problem

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with the remuneration of accountants. Recently, GHA has obtained more freedom in running its own salary budget.

The overall conclusion is that GHA has not yet completed the transition from force account work to contracting out to the private sector. In fact, GHA is in a dead-lock situation: on the one hand funding for the retrenchment of excess staff is not available, and on the other hand government policies put constraints on the recruitment of much needed professional staff.

The target of full implementation of *decentralisation of DFR* at the district level during the evaluation period has not been achieved. Roles and responsibilities of parties involved (DFR, MLGRD, DAs) have not been made sufficiently clear. Financial decentralisation is not on a par with functional decentralisation.

During the evaluation period, a step-by-step approach has been developed for gradual implementation of decentralisation of feeder road maintenance. Following the pilot project, about one third of decentralisation has been achieved. As an interim solution, Road Areas, containing on average three districts, are the focus points for management and execution of feeder road maintenance. The present number of 39 Road Areas will eventually be extended to full decentralisation at the (110) district level.

Most *training* objectives proved much too ambitious, due to the limited local resource in all MDAs. Achievement frequently lags far behind targets. Actual achievement very much depends on inputs from donor assisted projects/programmes. The overall effectiveness of HRD/Training performance is difficult to assess, since no systematic monitoring/ex-post evaluation of achievements, priorities, successes/failures, impact is carried out.

As to *Foreign Technical Assistance*, in the Review Report on the 1999 Donors Conference the ministry assesses the achievements in this field as follows:

- s Although significant strides have been made in the utilisation of local capacity, the road sub-sector is still dependent on foreign technical assistance, mainly due to the following:
- s Conditionalities of donor agencies which insist on the use of foreign consultants in providing technical support to road agencies because of the perceived inadequate national capacity.
- s Lack of highly trained and experienced road engineers in the private sector to compete with foreign consultants.
- s A more determined effort has to be made in particular within the road agencies to engage and retain trained, experienced local road engineers to develop capacity to effectively supervise all consultants to achieve improvement in their performance.

Although difficult to estimate, the Evaluation Mission feels that the Foreign Technical Assistance components in donor interventions are probably not decreasing. Recent trends in donor's development policies (rural poverty, environment, safety, local participation, gender) might entail an increase of Foreign Technical Assistance.

4.3 Efficiency

The efficiency of the *transition of GHA* in terms of the intended speed of implementation could have been significantly higher. It was only at the end of the evaluation period that the Board of GHA was inaugurated and restructuring of the concern even stalled. Improvements could be obtained if labour policy conditions were to be broadened.

Giving the financial and institutional constraints, it cannot be concluded that the delays in implementation of *decentralisation of feeder road maintenance* are due to inefficient operation of DFR. The cautious policy, resulting in the flexible step by step approach, is probably the best way forward.

From the point of view of efficiency in feeder road management, it remains to be seen whether full decentralisation to the District Assembly level is the optimal solution. It could well be that at a certain degree of decentralisation diseconomies of scale are inevitable. Such drawbacks will be balanced against the wider benefits of decentralisation.

To pursue further decentralisation, some conditions have to be met, including a clear outline of roles and responsibilities in the change management at the central level (MLGRD, MRT/DFR), and at the regional/local level. In terms of organisation of feeder road maintenance, practical questions shall be addressed, such as: Who is responsible for human resource management: recruitment, training, remuneration and logistics of engineering staff at the District Assemblies, and how is appropriate funding secured?

All MDAs run a three-year rolling *training* programme, which is continuously adapted to the changing environment and funding. In the given circumstances, the MDA's reasonably manage with what they have got and as such operate in a practical and efficient manner. MRT is to co-ordinate training planning. Although some efforts have been made (i.e. dedicated workshop in 1998), co-ordination leaves much to be desired. All MDAs have a HRD/Training unit, but planning tools (staff and training records, databases) could be improved. ODICTP could be instrumental in improving organisation of training at MDA and sub-sector level.

The question whether the same result of *Foreign Technical Assistance* could have been achieved through an alternative mix of FTA and local resources has not been addressed. The local component could be improved by interests/participation/alliances between local and donor countries consultancy firms. This option of capacity building could, in the Evaluation Mission's opinion, be exploited further.

4.4 Impact

In terms of changes to society at large, i.e. beyond the *GHA organisation* proper, some impact is generated in the private sector road construction industry, which has improved substantially both in volume and quality during the past decade.

The wider objective of *decentralisation* is to allow greater involvement of the local population in the decision making process at the DA level with respect to housing, utilities, accessibility. As such, decentralisation of feeder road management could have a positive social impact in terms of rural poverty alleviation.

ANNEX V-INSTITUTIONAL FOCUS

Prominent in Ghana's road sub-sector is the ample attention given to capacity development of the private sector through dedicated *training* efforts. This complies with the policy of increasingly outsourcing road works to the private sector. Ghana's "best practice" duly adheres to the principles of the Road Maintenance Initiative (RMI). The *impact* of training of contractors and consultants on private sector performance is considered substantial

Foreign Technical Assistance has an indirect impact through improved accessibility

4.5 Sustainability

It is expected that the results of the *transition of GHA* will prove sustainable: it is firmly embedded in a new legal framework, the aim of a leaner organisation is sound and strongly supported by the management.

In view of the slow proceeding of the *decentralisation process*, sustainability is considered uncertain. DFR is committed to achievement of the ultimate goal and envisages a stepwise approach (50 District Assemblies in 2004), but it is doubtful whether necessary conditions (institutional, financial) will be met in time. At the end of the day, it is all about funding. Decentralisation is to be financed domestically. Donors might provide some technical assistance to support implementation, but all (additional) recurrent cost must be borne by the Government. This critical factor might endanger success of the programme.

The future of *training* remains uncertain as long as appropriate local funding has not been secured and the scope of HRD/training programmes continues to be dependent on donor support. Further, the content of the training programmes might change with donor preferences, in line with allocation to individual MDAs (note the shift of donor attention to "rural poverty", hence to DFR feeder roads, on the cost of GHA trunk roads and DUR urban roads). Again, ODICTP might support due co-ordination.

By nature, the sustainability of *Foreign Technical Assistance* is uncertain.

5 LESSONS LEARNED

5.1 Introduction

When dealing with institutional matters it is not considered appropriate to make a strict distinction between past and future. Therefore, this chapter first gives a summary of the Institutional Focus on the MDAs: GHA, DFR, DUR and MRT in terms of main achievements during the past years (paragraphs 5.2 – 5.5). Next, in paragraph 5.6, special attention is given to the Decentralisation issue, particularly pertaining to DFR. Finally, summaries of conclusions and evaluations are presented in paragraphs 5.7 and 5.8.

5.2 Ghana Highway Authority

Organisation

At the establishment of GHA in 1974, the agency was an autonomous body, administrated by a Board of Directors. When the Ministry of Roads and Highways was established in 1982 the Board of Directors was replaced by a Joint Consultative Committee. This committee consisted of nine members, viz. the Chief Executive, two of the three Deputy Chief Executives, and six other representatives of GHA (e.g. middle management, legal services).

In the Policy Letter of 9 February 1996, it was announced that GHA would establish an independent Board of Directors as its governing body, to encourage the authority to become a more customer-oriented agency. This board was inaugurated on 3 September 1999 and it consists of ten members, viz. a chairman (not specified, but actually from the private sector), representatives of the Ministries of Roads and Transport, Finance, Environment, and Interior, the Chief Executive of GHA, a representative of the Private Enterprise Foundation, a civil engineer (Ghana Association of Consultants), a representative of private road transport unions and one other person representing road users. The members are appointed by the President of Ghana.

The structure and manning of the top management of GHA (referred to as the Directorate) remained unchanged in the period 1996 till present. The Directorate consists of the Chief Executive and three Deputy Chief Executives (Administration, Maintenance and Development). Management is essentially co-ordinated through collective and individual meetings of the Directorate. While there is no doubt that the Directorate dominate the decision making process of GHA, during interviews with the Evaluation Mission it appeared that the four top managers have a clear understanding of and commitment to GHA's vision and mission, that they have excellent contacts with key persons in the Ministry of Roads and Transport and that they fully understand the need to restructure GHA in view of the changed tasks.

The current organisation structure was designed in 1974 and remained virtually unchanged till present. The only change in period 1996-2000 was the inclusion of environment and safety in the organisation. This was not foreseen in the Strategic Plan 1995-2000/Policy Letter of February 1996, but in the agreement with the World Bank on the Highway Sector Investment Programme.

Human Resource Development

On an actual overall total GHA staff of some 3,500, the present total labour force is still about 350 higher than planned (10 percent) but much larger discrepancies emerge when comparing the actual and planned employment per category:

- In the categories engineering, other professional, technical and supervisory staff, and works superintendents still around 50 percent of required staff is missing.
In spite of the large number of vacancies in these categories, GHA is not allowed to hire new senior staff, because the government has frozen new recruitment of civil servants.
- junior staff: since the mid 1980s GHA has been reducing its junior staff. A further downsizing programme, financed with the Government Retrenchment Programme, was initiated in the beginning of the 1990s. In 1994 and 1995 the first two groups of this programme received a retrenchment payment (almost 700 employees). After that the programme was stopped, after the government did not allocate more funds to the programme. The result is that GHA still has a 40 percent surplus of junior staff. In 1999, the new Board of Directors prepared a proposal to implement the next phases of the retrenchment programme, including some 800 staff in the next 3 – 4 years.

The overall conclusion is that GHA has still not completed the transition from force account work to contracting out to private parties. In fact, GHA finds itself still in a dead-locked situation: on the one hand funding for the retrenchment of excess staff is not available, and on the other hand, the government policy forbids the recruitment of much needed professional staff.

There is a general complaint that the GHA salaries are low, not only in comparison with the private sector, but also in comparison with government utility organisations (electricity, water, etc.). GHA's salary structure is similar to that of the Civil Service Scheme, by which salaries are paid by the Controller and Accountant General. On the other hand, the government utility companies generate own revenues and do not rely on subventions of the government, allowing them to follow an own salary policy. GHA is now trying to change the situation in such a way that salaries will be transferred directly by the Ministry of Finance and that GHA will then run its own salary budget and administration.

Training

In the Strategic Plan 1995-2000 GHA recognises that in order to supervise all contract works GHA has to attract, retain and train professionals and technicians. In preceding chapters attention was given to organisational issues, in this chapter attention will be given to training.

One of the specific objectives of GHA is "to adequately train and develop the manpower by training managerial and operational staff in various skills". This is further specified in the Corporate Training Programme 1997-1999 as follows:

- Attain a systematic development and improvement of knowledge, attitudes and professional capabilities of GHA's employees at the management, specialist, technical and non-technical levels, in order to enhance the effective utilisation of human resources in a bid to achieve GHA's overall corporate objectives.

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- s Improve GHA's ability to implement its road construction programme by enhancing skills to GHA officers, contractors and operators in the private sector, through the identification of training needs in the road sector, and formulation and implementation of a comprehensive training programme.

In view of the importance of training GHA has established a special Training and Development Division (under the Administration Department), headed by a Director and with a training programmes manager, training services supervisor and a librarian.

In the Corporate Training Plan and Programme 1997-1999 (prepared in co-operation with World Bank technical assistance) GHA presented its training programme. The Corporate Training Plan identifies 18 specific functional areas for training (ranging from planning till surface dressing techniques).

In the period 1996-2000 donor-funded training dominated (except for seminars and conferences), more specifically World Bank financed training. As regards World Bank-funded HSIP training, the programme included in the Corporate Training Plan 1997-1999 bears little correspondence to the proposal in the Staff Appraisal Report of April 1996 (in fact only the total funding is the same), and as mentioned above, the annual training reports do not allow comparison with the Corporate Training Plan 1997-1999. Overall, it is not possible to compare the planned and achieved programme, and hence it is unclear what the results of the training are.

Given the budgetary constraints facing GHA, the Evaluation Mission recommends carefully approaching the feasibility of the training facilities, giving high priority to financing (including recurrent expenses), and exploring the possibilities of sharing facilities with other organisations (in and outside the road sector, including the possibility to co-operate more closely with outside training institutes already used).

It is generally acknowledged in GHA that training, and especially overseas training, is an incentive to work for GHA, partly to supplement the relative low primary salaries, partly to increase the expertise and skills. For example, in the Corporate Training Plan 1997-1999 a total of 92 persons were planned to follow training abroad (ranging from one week courses to 12-month MSc).

Foreign Technical Assistance

Within the framework of HSIP, a wide range of FTA interventions took place, as was reported in this Annex. The conclusion with respect to the objective to reduce dependence of FTA is ambiguous in that on the one hand the total volume of FTA is probably increasing while on the other hand the FTA to training should eventually (have to) contribute to reduction of (dependence of) FTA.

5.3 Department of Feeder Roads

In this Annex, the “Institutional Focus” has been analysed in detail under the headings:

- § Organisational structure.
- § Human Resource Development.
- § Training.
- § Foreign Technical Assistance.
- § Decentralisation.

Some conclusions are given below.

Organisation structure

- § Generally, DFR’s mission, strategy and policies are well reflected in the organisation structure and management.
- § The organisation structure of DFR is already considerably decentralised. Out of a total staff of 660, only some 60 are located at Headquarters.
- § The present, rather lean organisation already reflects the results of the transition process from a basically force account operations to a planning/management organisation, contracting out full major works and over 90% of maintenance to the private sector. The subsequent staff reduction of semi and unskilled workers has been pursued to a major extent and further downsizing is in progress.

The organisation is suffering from serious staff shortages in:

- § Senior management executives at head quarters (at least two).
- § Engineering and other professional staff at regional offices.

General Government policies prohibit fulfilment of vacancies. There is a risk that present human resource capacity could be a bottleneck in the (simultaneous) implementation of:

- § The process of transition: concentrating on planning, supervision and contract management while outsourcing previously force account road works to the private sector; and
- § Decentralisation of feeder road operations to the District level.

HRD/Training

Management of HRD/Training is in place, but could be organised at a higher professional level. ODICTP could be instrumental in this respect. Training needs are well understood and planning through a three year rolling programme is proving effective. Co-ordination with other MDAs could be better (another ODICTP task). The scope of the training programme almost fully relies on donor funding (dedicated training projects as in NFRRMP or as part of donor supported Technical Assistance). Training of professionals abroad is considered an important incentive to retain qualified staff.

DFR makes extensive use of the private sector in terms of road construction and maintenance and consultancy services. This has contributed significantly to the development of a local construction industry and consulting industry. Continuous training is required to enhance skills has proven effective. Training of local capacity is considered essential in the process of greater involvement of the private sector through outsourcing while reducing force account operations.

Foreign technical assistance

Without solid proof, the Evaluation Mission feels that the dependence on FTA is not decreasing, most probably increasing as a result of:

- ⊞ Donor's interests gradually shifting towards rural poverty alleviation (in the sub-sector hence feeder roads) and subsequent provision of technical assistance.
- ⊞ Increasing emphasis on social and gender impact, local participation.
- ⊞ Introduction of advanced management/evaluation systems for feeder road maintenance and rehabilitation requiring substantial FTA.

Decentralisation

Decentralisation is a major issue in DFR's institutional development. Decentralisation is not as such a supporting objective to achieve the main goal: clearance of the maintenance backlog in a sustainable way. But decentralisation certainly has a bearing on the process of achieving the main goal. In view of its importance in the sub-sector institutional development, the Evaluation Mission has prepared a dedicated summary of the decentralisation issue (paragraph 5.6).

5.4 Department of Urban Roads

Organisation

- ⊞ At the beginning of the 90s, as a pilot case DUR transferred responsibility for maintenance of the roads in Accra to the Accra Metropolitan Road Unit (AMRU). This example was followed by four other cities and the Ga district. In all six cases regional Road Units (RUs) were set up.
- ⊞ The RUs have a mixed responsibility towards MRT/DUR headquarters and the MMDAs. Based on the Local Government Act (462) the RUs should fall under the responsibility of the MMDAs, however, in close co-ordination between MRT/DUR and the MMDAs it was decided to have this mixed/combined line of authority.
- ⊞ Tasks are divided between MRT/DUR and MMDA on the following basis:
 - MRT/DUR: budget responsibility, professional and technical personnel, equipment and training.
 - MMDA: selection of projects, prioritisation.
- ⊞ The level of responsibility shifted to the RU's differs per RU, based on the level of development of the RU. All RU's are responsible for the whole range of implementation of routine and periodic maintenance related activities (planning, monitoring of contractor, etc.) and have financial responsibility for routine maintenance. AMRU has in addition is also financially responsible for periodic maintenance.
- ⊞ Development works in all instances remains with DUR headquarters.
- ⊞ In the long run DUR headquarters will reposition itself and only focus on planning, co-ordination and monitoring of activities. In addition to that it will continue to have the function of training institute for engineers to be prepared for their jobs in the RUs.
- ⊞ DUR envisages developing into a Department of Urban Transport (DUT). DUT would then be involved in traffic management.

Human Resource Development

- § Throughout the years DUR has gone through a downsizing process. At the start of HSIP 550 were employed. That number has now gone down to approximately 460.
- § At the RUs, MRT and MMDA staff are employed. Generally speaking MRT provides the professional and technical staff (management, engineers) and MMDA provides the support staff (drivers, secretaries, mechanics, etc.).
- § If staff is transferred to an RU, they remain employed by MRT.
- § Remuneration levels are, as in other agencies, low.

Training

- § DUR headquarters serves as a training institute. New engineers receive an 18-24 months in-house training programme after which they are sent out to the RUs.
- § Opportunities exist to be involved in training programmes, including international training courses. A side-effect of staff being shifted to the RUs is the fear that once employed at a RU, training facilities may not be the same.

5.5 Ministry of Roads and Transport

The Ministry of Roads and Transport (MRT) was newly established in March 1997, as a single Ministry responsible for all Transport Sectors. In the past, the Ministry of Roads and Highways (MRH) was responsible for the Road Infrastructure, while the Ministry of Transport and Communications (MTC) was responsible for the road transport service and other modes including rail, air, maritime and lake. The two Ministries were amalgamated to become MRT, in recognition of the fact that as the transport plays a key role in the socio-economic development of the nation, therefore all transport modes should be co-ordinated under one single Ministry.

MRT is responsible for conceptual design and implementation of *Integrated Policy and Planning of the Transport Sector*. The notion “integrated” has several meanings:

- § 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.
- § 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.

The Ministry will be required to present a long term view (Master Plan) on infrastructure and transport developments, within the framework of a Master Plan, including Transport demand analysis & traffic forecasting, Infrastructure Planning, Investment assessment and Financing opportunities.

As to the Roads sub-sector, the Ministry has the general responsibility as defined above and specific tasks in co-ordinating and guiding the Agencies (GHA, DFR, DUR) in addressing the two major issues:

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- § *Transition* from large bureaucratic agencies carrying out road works basically by force account to leaner, commercially oriented organisations, outsourcing virtually all road works (maintenance, rehabilitation/reconstruction and development) to the private sector and subsequently concentrate on the core tasks: planning and contract management, supervision and monitoring, within the overall policy framework set by MRT; 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 (MRT, MLGRD, MoF) policies. The decentralisation issue has been summarised in paragraph 5.6 below.

Institutional strengthening/capacity building will support due pursuance of MRT policies, both at the general transport policy level as well as pertaining to the specific policies on transition and decentralisation. To that end, the institutional Annex distinguishes four aspects: organisation structure, human resource development, training and foreign technical assistance. These subjects have been dealt with in detail in above chapters on the individual organisations. As to MRT, its core responsibility is in *co-ordinating* institutional strengthening and capacity building policies and interventions in the sub-sector.

Organisation

- § Tune the organisation structures of the Agencies as to comply with the objectives of integrated transport policy and planning, respecting higher order policies of decentralisation and private sector involvement.

Training

- § Synchronise HRD systems (planning, information) and training programmes.

Foreign Technical Assistance

- § Careful anticipation of forthcoming interventions through donor co-ordination.

The overall conclusion is that the present organisation structure of MRT is adequate. However, further specification of functions, tasks & responsibilities is required.

In the longer run, a further change of the organisation structure could be contemplated towards one single, united road directorate, encompassing strategy development, overall planning and contracting of all three MDA's: GHA, DFR and DUR. Such a structure becomes relevant once both transition and decentralisation have been completely implemented. Rather lean organisations would then remain and it could well be both efficient and effective to bring them together under one roof: a single road authority under MRT.

Further integration should not be aimed at in the short run. In view of the modest speed of transition and decentralisation, it should not be given highest priority. It is recommended to consider the possible concentration as a "longer term perspective". In the meantime, the feasibility of structural changes could be investigated in two ways:

- § A careful SWOT analysis.
- § International benchmarking.

5.6 Decentralisation

Conclusions

- s The primary strategy of the decentralisation effort, as defined in the Local Government Law of 1988, is to devolve the central government's administrative and political authority to local levels (i.e. regions, districts, towns and villages), with the District Assembly (DA) being the administrative/political centre.
- s Decentralisation of DFR management and operations would entail the execution of feeder road maintenance in each of the 110 Districts, organised by Works Departments of the DAs.
- s Decentralisation is principally a political decision, adopted by the governments to delegate power to lower level governments. The aim is to increase democratic governance and to allow greater participation through local politics and best practice. Economies of scope could be achieved if road maintenance is integrated in a "Works Department", together with "public works" and "utilities".
- s However, that diseconomies of scale could emerge if full decentralisation is pursued at a administrative level as low as the DAs.
- s It is feared that the organisational capacity of many districts will be too weak for a considerable time to come and that required executive staff, capable of both planning and execution of road maintenance, will not be sufficiently available at the district level.
- s Practical problems arise in financing the decentralisation process, remuneration, logistics support.

Lessons learned

In view of personnel, logistic and financial constraints, MRT/DFR propose that the decentralisation be implemented in phases. The transitional phase is proposed to cover a period of five years. During this phase, it is recommended that DAs are grouped to share technical staff and logistics. The 110 DAs are presently grouped into 39 *Road Areas*. The proposed Road Area centres in district capitals are resupplied with appropriate technical staff and logistics support to enable them to service the political districts in the Road Area.

The DFR is committed to pursue the decentralisation process. In Strategic Plan 2000 – 2004 it stated: "In order to realise the full benefit of Government decentralisation policy in the road sector, the MRT in conjunction with the Ministry of Local Government and Rural Development (MLGRD) will prepare a comprehensive programme and modalities required to effectively decentralise the DFR. A realistic assignment of responsibilities and the required controls will be clearly defined by MRT and MLGRD to avoid duplication of efforts and improve co-ordination and accountability in the process of decentralisation."

The target for the strategic period is to pursue the decentralisation programme to the extent that by the year 2004 fifty districts will have fully decentralised their maintenance operations. Danida has made commitments to support DFR's decentralisation effort through provision of technical assistance.

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Each Road Area and eventually each DA, shall be assisted to carry out the following activities on their own:

- § 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 Government for some road works.

The ultimate goal of decentralisation is to organise feeder road maintenance at the district level, i.e. through the 110 DAs. It is, however, questionable whether this is a suitable scale for road maintenance practice. In operational sense, somewhat larger Road Areas are probably more economic. Whether road areas are considered acceptable in the decentralisation strategy should be a matter of further political discussion. For the time being, the “cautious approach” adopted by MRT/DFR seems, therefore, appropriate.

The decentralisation process has a bearing on the two recent initiatives of Danida and DFID, planned for almost the same period (end of 1999-2003). It is understood that both DFR and the donors have a good understanding of the need for due co-ordination of the two projects, featuring partly common objectives and tasks, i.e.

- § Further implementation of MPBS at the regional/local level.
- § Training of engineers at the regional/local level.
- § Technical assistance in the analysis of (socio-economic) impacts on rural poverty, environment and gender issues.
- § Technical assistance in guiding DFR in the decentralisation process.

Department of Urban Roads

- § As stated above under the heading organisation, responsibility for routine and periodic maintenance and financial responsibility for routine maintenance is shifted to the RU's. This process will continue, Accra has now also financial responsibility for periodic maintenance. In the long run DUR headquarters will be a body responsible for planning, co-ordination and monitoring of activities. In addition to that it will continue to have the function of training institute for engineers.
- § DUR staff transferred to the RU's will remain to be employed by MRT. According to the law (Act 462) RU staff will be employed by MMDAs. So far the discrepancy between the legal and actual situation has not caused any problems. Time will tell how this situation will evolve in the future.
- § Personnel seem to cherish the status of MRT employee, including (international) training opportunities, over the MMDA status.

5.7 Summary conclusions

Ghana Highway Authority

- § Pursue change management. Now that the organisation has been restructured and its new tasks and responsibilities defined, GHA has to catch up with the implementation of
- § Transition from force account road works to planning and supervising road authority.

Department of Feeder Roads

- ⊞ Further institutional strengthening in line with ongoing decentralisation.
- ⊞ Finding a practical solution for the warranted level of decentralisation, balancing
 - compliance with higher order GoG policies with
 - safeguarding quality and sustainability of feeder roads maintenance/rehabilitation.

Ministry of Roads and Transport

- ⊞ Ongoing strengthening of its co-ordinating capacity in organisation, HRD/Training and FTA.
- ⊞ Further integration in the organisation structure could be contemplated. Once planned changes in GHA and decentralisation in DFR and DUR are in place, an option could be to bring the remaining policy and planning units of DFR and DUR together with the GHA in one single (“new generation”) Road Authority, at “arm length distance” of MRT. To that end:
 - consider advantages/disadvantages of such a development (SWOT analysis).
 - comparing to best practice elsewhere (particularly in RMI countries).
 - only after having implementation of decentralisation and transition in place.
 - recognising long term implications.

5.8 Summary evaluation

This summary is confined to the three main topics, the *organisation structure/HRD* (changes in the evaluation period 1996-2000 within GHA and MRT), the *transition* process in GHA, DFR and DUR and the *decentralisation* (particularly pertaining to DFR).

Organisation structure/HRD

Relevance

- ⊞ Changes are in generally in line with GoG policies.

Effectiveness

- ⊞ Formally, the changes of the organisation structure of GHA, towards a more effective administration (with enhanced authority) have been put in place, but implementation is proceeding slowly.
- ⊞ The changes within the Ministry, from Roads and Highways to Roads and Transport and subsequently to a “modal structure” are consistent with policy objectives of an “integrated approach” to infrastructure and transport planning and have proven to reasonably effective in co-ordinating sub-sector activities.
- ⊞ It should be considered whether, in the longer run, ongoing organisational integration of road sub-sector agencies could further enhance effectiveness.

Efficiency

- ⊞ Organisational changes in the Ministry have been pursued efficiently.
- ⊞ Human resource development, following from organisational changes at GHA, is seriously impeded by higher level remuneration & recruitment policies and constraints.

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Impact and sustainability

- s Sound organisation structures in the roads sub-sector support/are a condition for achievement of the specific objective (clearance of the maintenance backlog on a sustainable basis) and the wider objectives (economic benefits, rural poverty alleviation and gender).

Transition

Relevance

- s Transition from force account to outsourcing and subsequent slimming down of agencies is complying with higher order policies of privatisation/private sector involvement and subsequent withdrawal of Government institutions, and in line with best practice in road sector organisation and management elsewhere.

Effectiveness

- s Supported by (i) due financing through allocations from the Road Fund and (ii) training of private sector contractors and consultants, the transition is proceeding and contributing to improvement of road conditions, particularly during the past few years.
- s The subsequent downsizing of Agency staff is lagging behind, more so with GHA than with DFR and DUR, owing to human resource development constraints.

Efficiency

- s Although implementation of the transition is generally lagging behind schedule, compared with experience elsewhere the sub-sector is not doing too bad. Still, the Evaluation Mission feels that MRT should be more dedicated in supporting the process in terms of co-ordinating human resource development/training and FTA between sub-sector and GoG institutions.

Impact and sustainability

- s Road sub-sector transition from force account to outsourcing is generally considered the way forward in contemporary road infrastructure management. It will therefore contribute to achievement of the main objective: clearance of the maintenance backlog, as well as the wider objectives (economic benefits, rural poverty and gender), on a sustainable basis.

Decentralisation

Relevance

- s The policy objectives of decentralisation are clear. They have been anchored in dedicated legislation, pertaining to a wide range of social aspects. Feeder road planning and maintenance has to be embedded in the overall decentralisation policies.

Effectiveness

- s The target of full implementation of decentralisation of feeder road maintenance at the district level during the evaluation period has not been achieved. Roles and responsibilities of parties involved (DFR, MLGRD, DAs) have not been made sufficiently clear. Financial decentralisation is not on a par with functional decentralisation.

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- s Due pursuance of decentralisation is seriously impeded by human resource capacity constraints at DFR, both at executive management (head quarters) and at the regional level (engineers and other professional staff).
- s During the evaluation period, a step by step approach has been developed for gradual implementation of decentralisation of feeder road maintenance. Following the pilot project, about one third of decentralisation has been achieved. As an interim solution, Road Areas, containing on the average three districts, are the focus points for management and execution of feeder road maintenance. The present number of 39 Road Areas will eventually be extended to full decentralisation at the (110) district level.

Efficiency

- s Giving the financial and institutional constraints, it cannot be concluded that the delays in implementation of decentralisation of feeder road maintenance are due to inefficient operation of DFR. The cautious policy, resulting in the flexible step by step approach, is probably the best way forward.
- s From the point of view of efficiency in feeder road management, it remains to be seen whether full decentralisation till the DA level is the optimal solution. It could well be that at a certain degree of decentralisation diseconomies of scale are inevitable. Such drawbacks will be balanced against the wider benefits of decentralisation.
- s To pursue further decentralisation, some conditions have to be met:
 - Clear outline of roles and responsibilities in the change management at the central level (MLGRD, MRT/DFR), and at the regional/local level. In terms of organisation of feeder road maintenance, practical questions will be addressed:
 - Who is responsible for human resource management: recruitment, training, remuneration and logistics of engineering staff at the DAs, and how is appropriate funding secured?

Impact

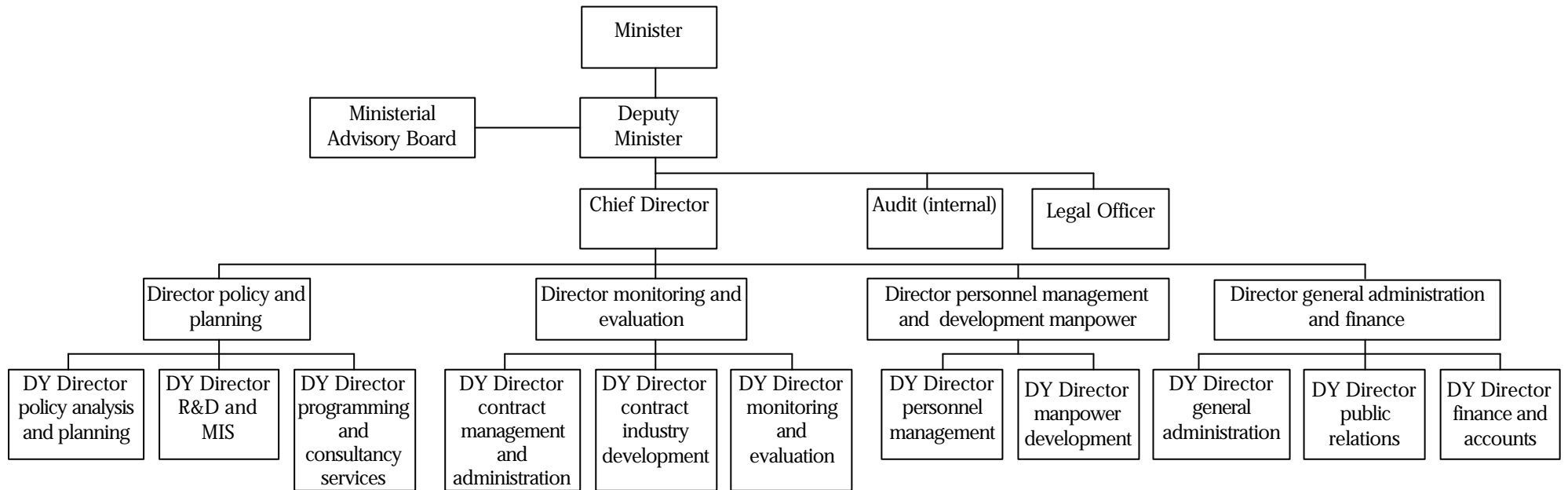
- s The wider objective of decentralisation is to allow greater involvement of the local population in the decision making process at the DA level with respect to housing, utilities, accessibility. As such, decentralisation of feeder road management could have a positive social impact in terms of rural poverty alleviation.

Sustainability

- s In view of the slow progress of the decentralisation process, sustainability is considered uncertain. DFR is committed to achievement of the ultimate goal and envisages a stepwise approach (50 DAs in 2004), but it is doubtful whether necessary conditions (institutional, financial) will be met in time.
- s At the end of the day, it is all about funding. Decentralisation is to be financed domestically. Donors might provide some technical assistance to support implementation, but all (additional) recurrent cost must be borne by the Government. This critical factor might endanger success of the programme.

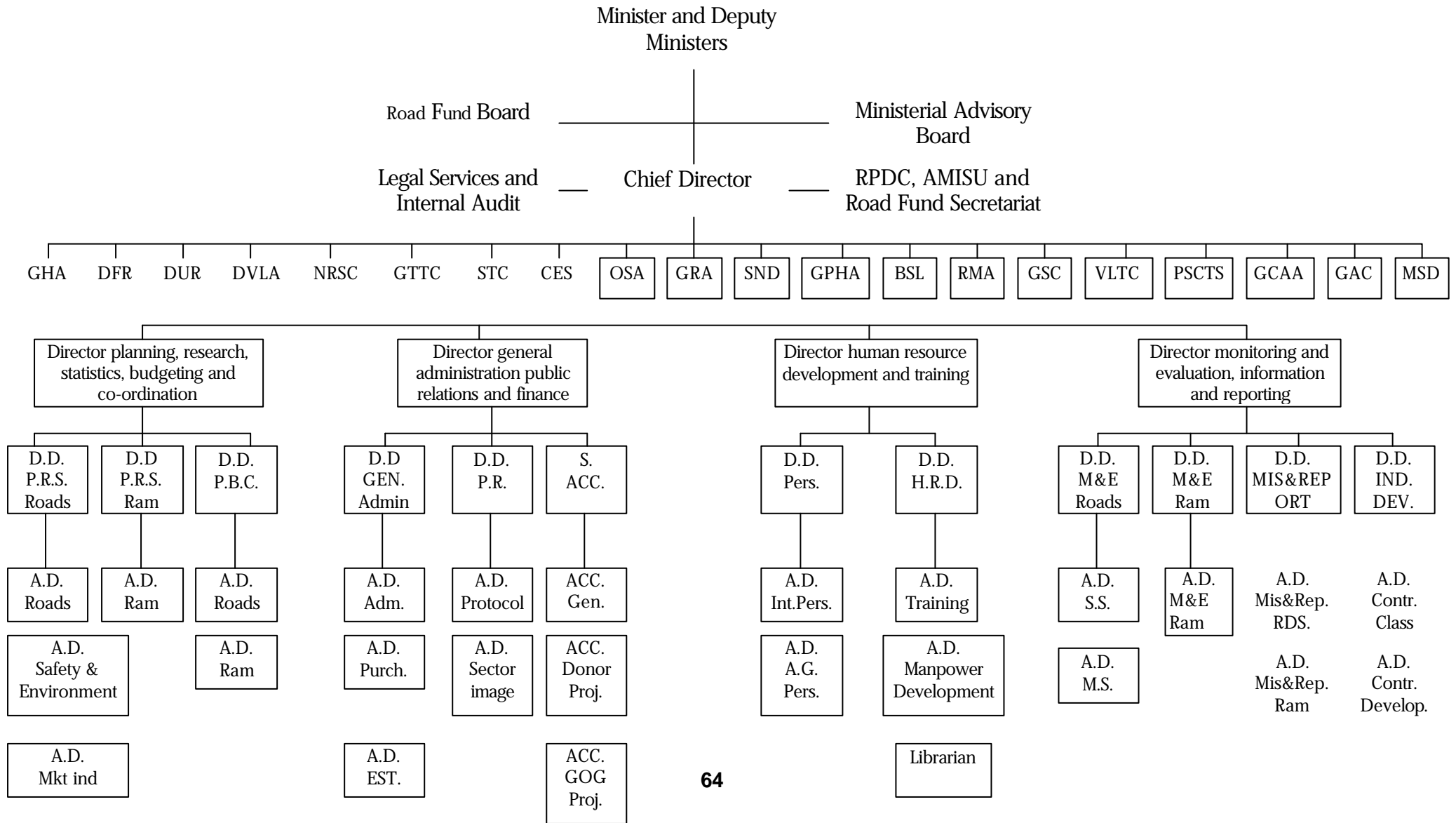
Appendix A Organisational structures GHA, DFR, DUR and MRT

Figure A1 Organisation structure Ministry of Roads and Transport, till 1997



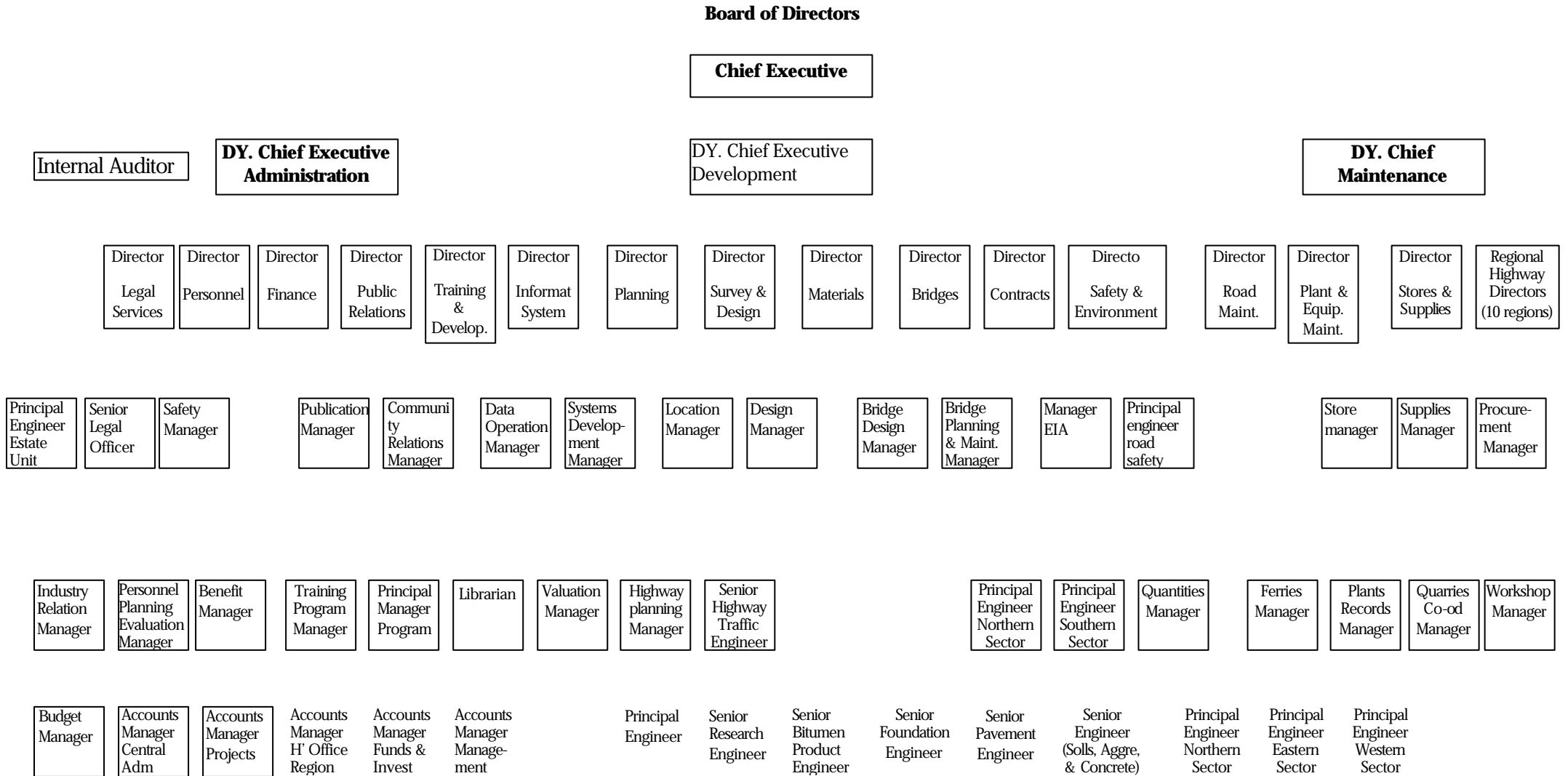
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Figure A2 Present organisational structure Ministry of Roads and Transport



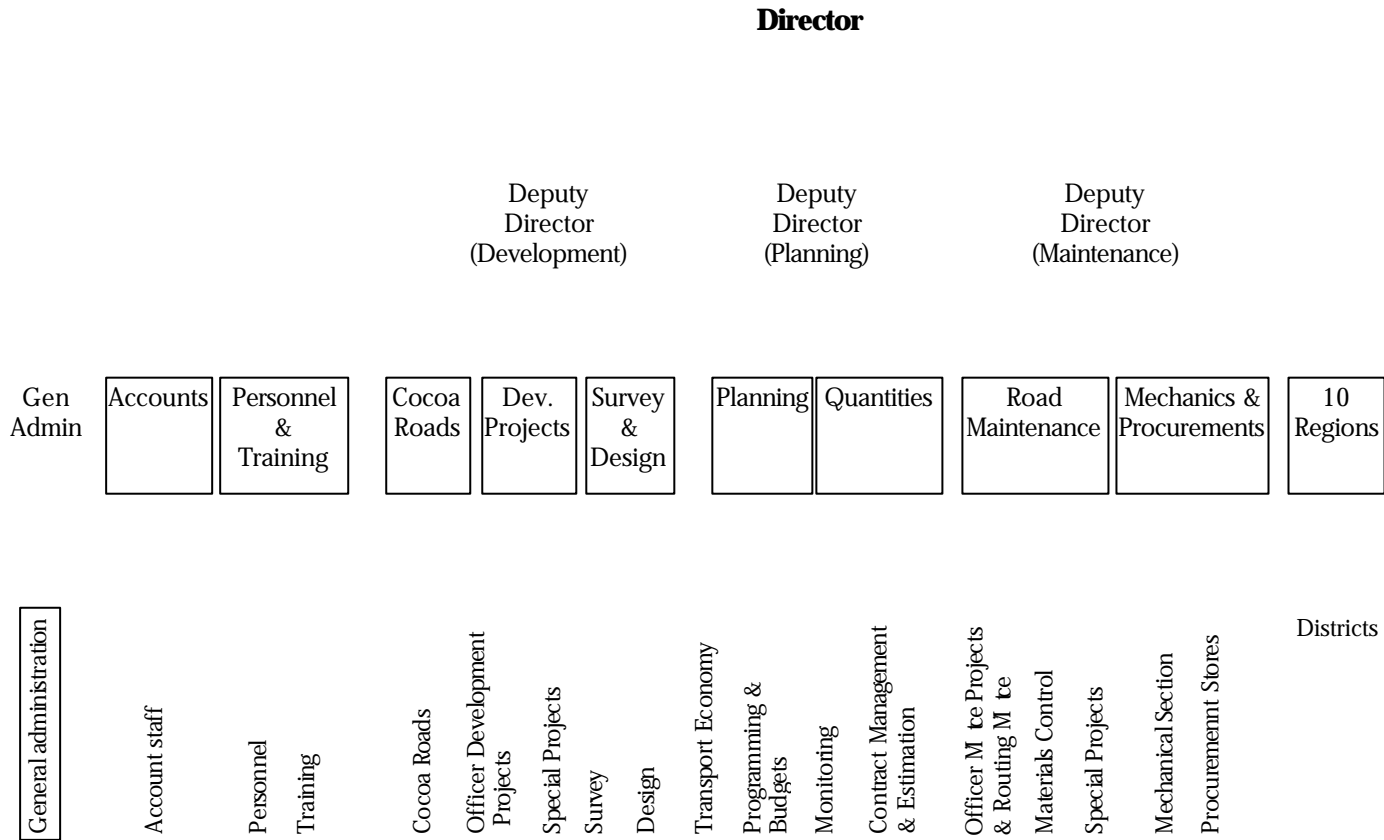
ANNEX V-INSTITUTIONAL FOCUS

Figure A3 Current organisation structure of GHA



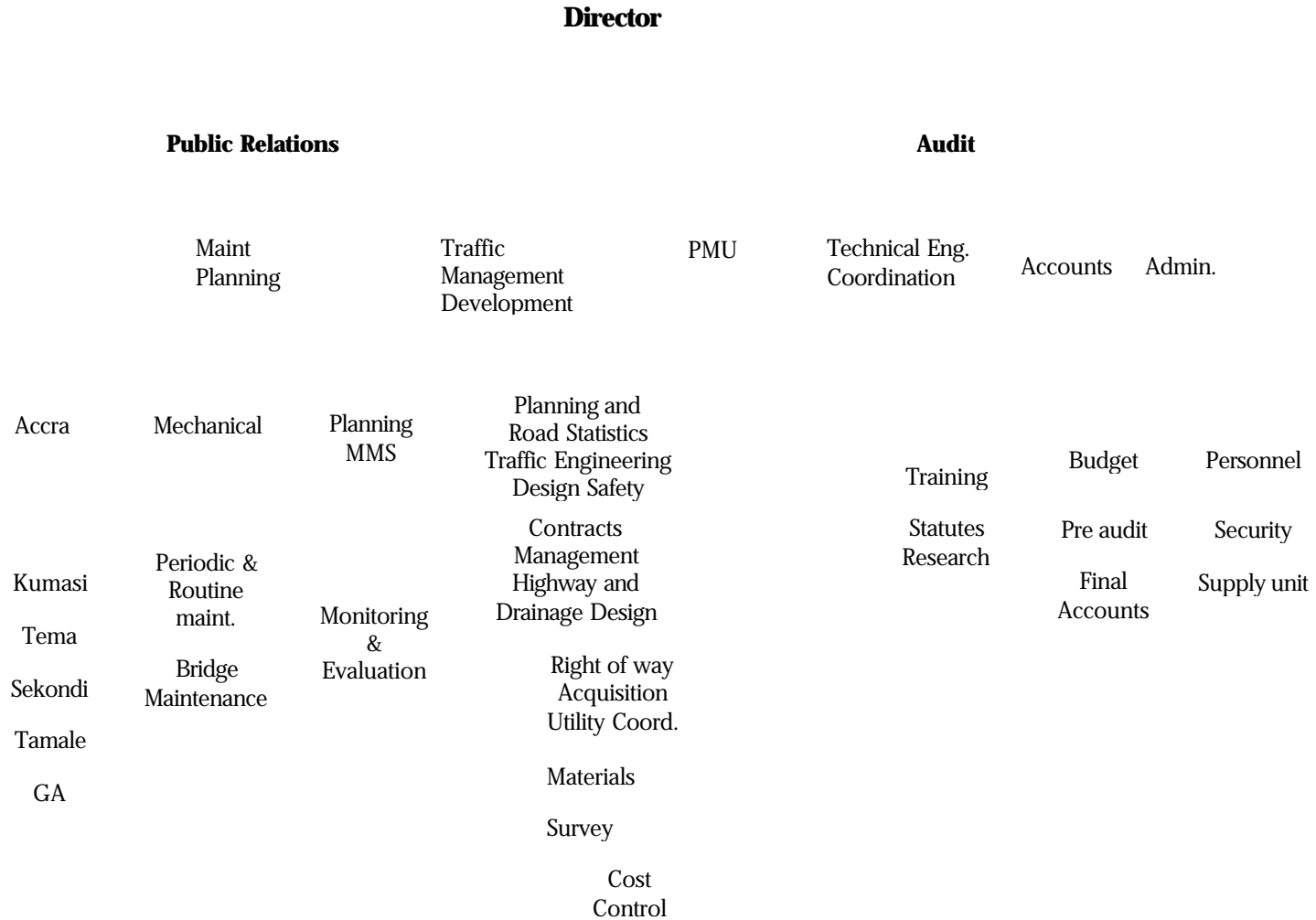
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Figure A4 Organisational structure of DFR headquarters



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Figure A5 Organisational structure of DUR headquarters



ANNEX VI-TECHNICAL FOCUS

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1 INTRODUCTION

1.1 Contents of evaluation group

Within this evaluation group focus is on the majority of the technical issues. The evaluation fields¹ covered in this group are the following:

<i>Evaluation fields</i>	<i>Sub-sections</i>
Clearing the backlog	<ul style="list-style-type: none"> ▲ Road standards & new road classification. ▲ Road conditions & field observation. ▲ Physical achievement of routine and periodic maintenance of three agencies. ▲ Followed (given) priority. ▲ Labour-based construction and maintenance: pros and cons.
Private sector participation and financing	<ul style="list-style-type: none"> ▲ Quality and efficiency of contractors.
Road transport regulations	<ul style="list-style-type: none"> ▲ Effectiveness of road traffic regulations. ▲ Actions to enforce axle-load standards + damage from overloading. ▲ Road safety administration.

1.2 Relation to other evaluation groups

The subject of budget preparation and contract management is closely related to the technical issues, at least in terms of financial flows. This issue is dealt with in Annex IX, Contract Management Focus.

Likewise the subject of prioritisation that is dealt with in Annex VIII, Economic-Financial Focus.

¹ The evaluation fields correspond with the scope of work elements, as defined in the Terms of Reference.

2 OBJECTIVE OF EVALUATION GROUP

In this section the objectives of the relevant aspects covered in this evaluation group are presented. The objectives presented below are a combination of the text taken from the February 1996 policy letter and the scope of work as defined in the Terms of Reference. The two combined can be regarded as the starting point for this evaluation.

2.1 Clearing the backlog

Policy letter

Since the road sector provides broad-based 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 the year 2005 is to have at least 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 ambitious 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 of US\$ 670 million, is expected to be financed from external sources.

Terms of Reference

- ▲ Assess and analyse the physical achievements of the routine and periodic maintenance and reconstruction operations of each of the three road agencies.
- ▲ Assess the condition of the road network compared with the targets set using the annual road condition surveys as basis, supplemented with field observations.

2.2 Private sector participating and financing

Policy letter

Private Sector Contracting

To ensure cost effective and efficient implementation of its programmes 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 workload.

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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 in 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 the Government to do this.

Terms of Reference

- ▲ Assess the degree to which the targets of 100% of all major roadwork and 90% of all maintenance work being carried out by the private sector have been achieved.
- ▲ Assess the quality and efficiency of contractors' work.
- ▲ Analyse the pros and cons of using labour-based construction and maintenance methods.

2.3 Road Transport Regulations

Policy letter

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 weighbridges 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 weighbridges 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 provide modest funds to the Committee through the restructured Road Fund.

Terms of Reference

- ▲ Assess the effectiveness of current road traffic regulations.
- ▲ Assess the actions taken to enforce axle-load standards – estimate the extent of road damage and maintenance expenditures caused by overloading.

3 OVERVIEW OF PERIOD 1996-2000

3.1 Introduction

The present chapter presents the various steps that have been taken by the three road agencies during the evaluation period regarding only road maintenance issues and comments on some aspect of their implementation and provides their status as of March 2000.

Each road agency is treated separately as each one has its own specificity and organisation.

3.2 Ghana Highways Authority

Introduction

In 1977, a Maintenance Management System was first introduced with the help of a foreign Consultant, Roy Jorgensen Associates, Inc. This system was intended to help managing force account-based road maintenance activities. At that time, GHA teams of workers with appropriate equipment, dispatched from the various local GHA offices carried out all road maintenance activities on GHA network.

In 1983 because of adverse conditions, it was difficult for GHA to maintain its entire labour force and that was the time the so-called “Single Man Contractor” concept was introduced.

Under this concept, a contract was concluded with an individual who was responsible for the routine maintenance (mainly grass cutting) of a 5 km stretch of road. In some rare cases, contracts were signed with registered companies, which employed several people in order to maintain sections up to 20km. The concept was applied only to the paved roads network.

At the same time, in the forest area of the country, contracts were signed with timber companies for the grading of gravel roads located in the operation area of these companies. That idea was further extended with the hiring of small contractors (so-called “Local private Contractors” or LPCs) in other areas of the country to do the same type of work.

The trend towards contracting out work to private contractors increased gradually in parallel with a sharp decline in force account activities. However the increase of the private sector involvement was not sufficient to balance the decline in the force account activities along with budget shortfalls, and as a result, the road network could not be properly maintained.

At the beginning of the 90s more contractors were attracted but not enough to fully deal with the amount of road maintenance work required.

At the end of 1996, upon issuance of the Government’s Letter of Sector Policy (February 9, 1996), 90% of routine maintenance activities were contracted out on a competitive

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bidding basis; 10% of the maintenance activities were left with two “Mobile Maintenance Units”, the purpose of which was to:

- ▲ Carry out emergency repairs.
- ▲ Maintain roads that beyond their normal life span in order to keep them passable without any specifically dedicated budget.
- ▲ Perform research work by testing new technologies.

In order to enable the Authority to improve the management and efficiency of its road maintenance activities, it was decided with the donors that the Maintenance Management System within GHA required updating and upgrading through the introduction of computerised systems. Technical assistance was provided to carry out this task. This updated system should enable GHA Maintenance Division to prepare its annual maintenance budget in a timely manner and more efficiently, and in the meantime provide a more reliable tool for road condition evaluation. The description of this system and its various components are presented in the following paragraphs as a mean of programming and monitoring the road maintenance activities.

Road Classification and Road Standards

Road Classification

First of all the Maintenance Management System must rest on an accurate description of the road network.

In 1996-1997 consultants Wilbur Smith Associates, hired to provide the technical assistance to GHA Maintenance Division, set up a new road section definition and library based on the existing road classification:

- ▲ Primary roads.
- ▲ Secondary roads.
- ▲ Other roads.

The following table summarises the length of this network according to class and type of surface of the roads.

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Table 1 Trunk Road Network description as of 1997

	Region	Primary	Secondary	Other		Asph. Concrete		Surf. Treated		Gravel		
						Km	%	Km	%	Km	%	
1	Ashanti	374	1,022	36	1,432	348		552		473		1,373
2	Brong Ahafo	559	1,227	49	1,835	212		580		1,042		1,834
3	Central	163	1,094	141	1,398	154		871		258		1,283
4	Eastern	178	1,427	220	1,825	51		1,143		624		1,818
5	Greater Accra	182	306	22	510	66		402		22		490
6	Northern	890	1,777	0	2,667	197		330		2,087		2,614
7	Upper East	287	219	0	506	0		171		335		506
8	Upper West	424	624	0	1,048	0		52		989		1,041
9	Volta	416	1,078	102	1,596	0		643		858		1,501
10	Western	244	1,189	63	1,496	150		367		978		1,495
1997	Totals	3,717	9,963	633	14,313	1,178		5,111		7,666		13,955
1995	Totals	3,676	9,913	762	14,351	1,068		4,554		8,954		14,576
1989	Totals	3,754	9,913	762	14,429	369		5,614		8,426		14,409

Source : "Consultancy Services for pavement Engineer, Highway Sector Loan: Road Condition Report, Oct. 1997 (Wilbur Smith Associates) – page 14

The total length of the networks as of 1989 and 1995 has been provided for comparison purposes. The length of surfaced roads decreased from 5,614 km in 1989 to 4554 km in 1995. This was due to the deterioration of the surfaced roads that had become gravel roads due to lack of maintenance; the total length of such roads was estimated at 557 km. The 1995 survey reported them as 'gravel roads'. For the 1997 survey, the Maintenance Division of GHA requested reporting them as highly deteriorated surfaced roads.

It should be noted that within the table above (reproduced from its source) there are discrepancies in the lengths of the network. The total length of the network in 1997 is given as 14,313 km and after being split between road surface types, it becomes 13,955 km (an unexplained difference of 418 km). The same happens for 1989 and 1995 to a lesser extent.

As of 1998, a new road classification was introduced, which allocates the trunk road network into three categories:

- ▲ National Roads ("N" roads), linking the national capital with regional capitals. Also the roads of strategic importance such as main arterial roads to neighbouring countries. These national roads are provided with asphaltic concrete surfacing or bituminous surface treatment depending on traffic levels.
- ▲ Inter-Regional Roads ("IR" roads) that are defined as the roads of inter-regional importance to provide regional coherence.
- ▲ Regional Roads ("R" roads) that link district capitals to their respective regional capitals, other nearest district capitals and major industrial, trade or tourist centres.

This re-classification of the trunk road network was undertaken on a functional basis, highlighting current socio-economic importance of some roads hitherto classified as feeder roads.

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The following table indicates the details of the new road classification²:

Table 2 New road classification details

Year 1998		Length	Percentage
National	N1 to N18 (16 routes in total)	4,379	33.06%
Inter-regional	IR1 to IR11 (11 routes in total)	2,732	20.63%
Regional	R10 to R184 (95 routes in total)	6,134	46.31%
Total =		13,245	100.00%

Source: GHA, Functional classification, surface type and condition of trunk roads in Ghana (1998)

After some length adjustments made in late 1999 and early 2000, the actual distribution of the roads according to the new classification is as indicated in the following table:

Table 3 Actual road distribution, according to the new classification

As January 2000		Length	Percentage
National	N1 to N18 (16 routes in total)	4,402.6	33.18%
Inter-regional	IR1 to IR11 (11 routes in total)	2,745.6	20.69%
Regional	R10 to R184 (95 routes in total)	6,121.0	46.13%
Total =		13,269.2	100.00%

Source: GTZ, Progress report n°4- Appendix 6

It should be noted that simultaneously to the introduction of this new road classification in GHA, 2,468 km of trunk roads were transferred to the Department of Feeder Roads (DFR) and 704 km from DFR to GHA. Hence, the road network under GHA jurisdiction decreased from 14,313 km in 1997 to 13,245 km in 1998. Unfortunately, it should be noted that up to early 2000, the GHA road inventory did not look very reliable as far as length is concerned and this explains some discrepancies between the various figures depending on the source. However this situation is being resolved with the help of Consultants GTZ and the allocation of map preparation to the Remote Sensing Unit (RSAU) at the University of Ghana. It is expected that a complete coverage of the ten regions at a scale of 1/250 000° would be available by March 2000 and fully computerised under a Geographical Information System. GTZ has assisted in the setting up of a databank of all links and sections under the new road classification system (1998) that should be related to the Geographical Information System. It is expected that minor adjustments will take place during the 2000 Road Condition Survey in terms of section lengths and road width in order to have a coherent and reliable system.

As of April 2000, the total length of the network under GHA jurisdiction is about 13,360 km.

Along with this new classification, for the purpose of road inventory, Link Nodes were established as follows for the three road categories:

² Although there are still a few uncertainties as the lengths of the networks are not consistent across the various sources that were consulted.

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1. Start and end point of route.
2. Regional capitals and major towns.
3. Junction of all national routes in principal.
4. Junction of important Inter-Regional routes.
5. Road sections which are significantly different from adjacent road sections in characteristics, such as number of lanes, ADT, part of streets.
6. Start and End point of missing link.

Further up, sub-links will be established if necessary depending on purpose of work or planning; a link or sub-link will be divided into various road sections if necessary depending on the purpose of work or planning.

To save on the periodic traffic survey work and costs, short length links will be combined to a longer road as much as possible.

The new classification brings logic to the network inventory and by identifying itineraries, it is more in line with international practice.

Road Standards

Roads Standards apply to the full range of road maintenance/construction activities:

- ▲ Road design standards (dealing with geometry).
- ▲ Pavement design standards (dealing with new pavement construction).
- ▲ Pavement overlay standards.
- ▲ Routine maintenance standards.
- ▲ Periodic maintenance standards or Maintenance strategies.

From what has been gathered, the following documents have been prepared and are currently being used:

- ▲ Specification for road maintenance works (January 1996).
- ▲ Standard details for urban and trunk roads (MRH, March 1991).
- ▲ Road design guide (GHA, 1991 with the assistance of JICA).

According to GHA officials, the existing road design standards are as follows with regard to cross sections dimensions³:

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 the ones that are widely used throughout the world (generally 2 lanes of 3.5m or 3.65m with shoulders varying from 1.0 to 2.5m depending on the country) and therefore from an engineering point of view they appear perfectly acceptable. Although in some specific cases, for economic reasons because of low traffic volumes, these standards may be sometimes lowered to 6m pavement width.

Nevertheless, GHA officials stated that there is no new or rehabilitated road whatsoever 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.

³ Bold and underlined dimensions are the most widely used ones for shoulders.

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

Besides, pavement design is generally performed on the basis of the “Road Note 31” from the TRRL Laboratory in England, and more recently with the Pavement Design Manual prepared by Wilbur Smith in 1998.

New specifications dealing with newly introduced paved road maintenance techniques have been prepared by an Australian Consultant (SMEC). These specifications deal mainly with asphalt concrete and surface treatment technologies and have been tested with the Mobile Maintenance Units.

The Specification for Road Maintenance Works are used as standard specifications in all periodic maintenance contracts and amongst other, deals with:

- ▲ Testing of materials and workmanship.
- ▲ Earthworks.
- ▲ Quarries, borrow pits, stockpiles and spoil areas.
- ▲ Culverts and drainage works.
- ▲ Gravel wearing course, Pothole Patching and repairs.
- ▲ Surface dressing, Road furniture.

Road Condition Survey

Since 1995, the Ghana Highway Authority (GHA) prepares a report annually on the general condition of the trunk road network under its jurisdiction. The methodology employed is the same each year. It is based on the PMMP system developed by Wilbur Smith Associates for GHA.

The condition of paved roads (flexible asphalt and bituminous surfaced) is reported using condition scores calculated for homogeneous road segments. The condition score is calculated by deducting points, from a maximum of 100, for each ‘distress’ present on the road.

For all roads, the roughness is measured once a year using a RIDEMATE roughness-measuring device. Roughness values are collected at 250m intervals for all sections of the road network and at least for the gravel sections, these measures are used to calculate the condition score of each section using the following IRI roughness values as boundaries.

Table 4 IRI roughness values and road condition rating

IRI ranges (mm/km)	Condition description
IRI < 10	Good
10 ≤ IRI ≤ 13	Fair
IRI > 13	Poor

Source: 1999 Road Condition Report, WSA

It is important to note that no road condition report was carried out in 1996 and that in 1998, only a small portion of the network (about 20%) was evaluated.

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Paved roads

The paved road survey (visual inspection) covers all asphaltic concrete, bituminous surfaced and rigid/concrete roads. The following distresses are surveyed:

- ▲ Alligator cracking.
- ▲ Depressions/Sags.
- ▲ Rutting.
- ▲ Flushing/Bleeding.
- ▲ Ravelling.
- ▲ Transverse, Longitudinal or Edge cracking.
- ▲ Lane/Shoulder drop off.
- ▲ Patching.
- ▲ Pothole level.

For asphalt concrete roads, the following thresholds are used to report the condition of the pavement:

Table 5 Road condition score (from recorded distresses) and road condition rating (asphalt concrete roads)

Condition score (CS)	Condition description
$100 \geq CS > 70$	Good
$70 \geq CS \geq 40$	Fair
$40 > CS > 0$	Poor

Source: 1999 Road Condition Report, WSA

For surface treated roads (Single or Double Bituminous Surface Treated i.e. SBST or DBST), the following thresholds are used to report the condition of the pavement:

Table 6 Road condition score (from recorded distresses) and road condition rating (surface treated roads)

Condition score (CS)	Condition description
$100 \geq CS > 65$	Good
$65 \geq CS \geq 35$	Fair
$35 > CS > 0$	Poor

Source: 1999 Road Condition Report, WSA

Gravel Roads

The gravel road survey records the following defects:

- ▲ Roadway surface defects
 - Loose gravel.
 - Dust.
 - Potholes.
 - Break-up.
- ▲ Roadway surface deformation
 - Corrugation.
 - Rutting.
 - Flat or reverse crown.

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- Distortion.
- Ponding.

For both paved and gravel roads, the extent and severity of the distresses are evaluated using a matrix shown in the table below:

Table 7 Matrix for distresses evaluation (road condition score)

Point to remove for a single type of distress		EXTENT		
		Localised 1 to 20%	Intermittent >20% to 50%	Prevalent >50%
SEVERITY	Slight	1	2	3
	Moderate	4	5	6
	Extreme	7	8	9

Source: 1999 Road Condition Report, WSA

The staffs in charge of the survey use an integer (1 to 9) depending on severity and extent of the distress recorded. All staff in charge of the survey are well trained to use the condition survey manuals. These give descriptions and definitions of the severity and extent of the various distresses. A series of colour photograph showing all type of distresses along with severity level samples are included in the manuals⁴.

Current Practice

Since 1997, there is an annual visual inspection of the GHA network with roughness measurements. The visual inspection is carried out by teams drawn from the GHA regional offices (generally the maintenance engineer, the material engineer, the deputy maintenance engineer and some district engineers). These teams receive a specific training or refresher course every year in Kumasi before going into the field. An effort is made to prevent a given team inspecting the same road every year; which is achieved by sending a team from one region to perform the inspection in another region.

The training generally takes place in January and February and the data collection in March and April. Once the data collection is achieved, each region feeds its data into the computer and sends a hardcopy with a diskette to the head office in Accra for aggregation and processing.

The roughness measurements are conducted during the same period as the visual inspection at a rate of one week per region.

Thereafter, all data are processed to derive for each road section:

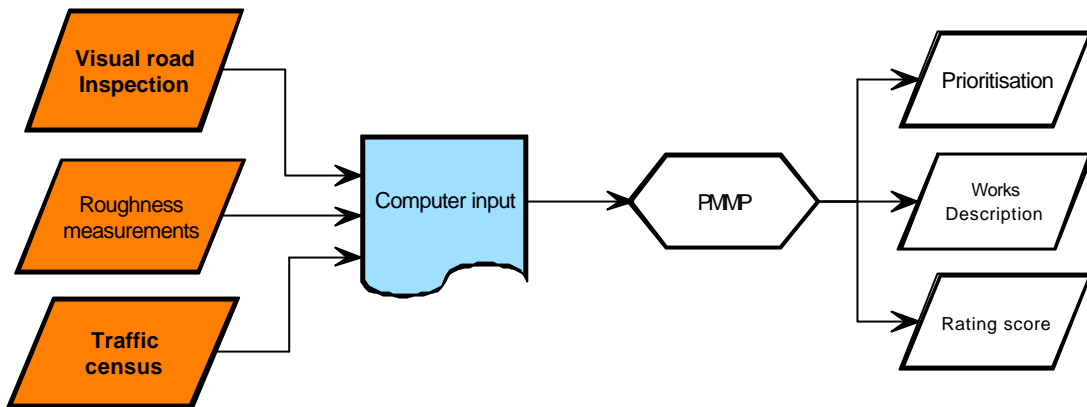
- ▲ A rating score.
- ▲ A prioritisation score.

⁴ "Surface Condition and appurtenances Survey Manual for Gravel Roads", "Surface Condition and appurtenances Survey Manual for Paved Roads", both documents from April 1998, by Wilbur Smith Associates for GHA

- ▲ A proposal for the type of periodic maintenance required, if any, along with the cost of these works.

The summation of all periodic maintenance costs makes up the periodic maintenance budget. The following chart illustrates the overall process.

Figure 1 The process of the PMMP system



Traffic Counts

The local GHA staffs carry out traffic counts every month at predefined locations. These counts are fed into the Pavement Maintenance Management System for the evaluation of the road sections priority ranking (see the paragraph on “Pavement Maintenance Management Programme (PMMP)” below).

Pavement Maintenance Management Programme (PMMP)

The Pavement Maintenance Management Programme is a computer programme that performs three tasks with the data obtained from the road condition surveys and the traffic census:

- ▲ Provides a condition ‘score’ for each road section of the network (see the paragraph on “Road Condition Survey” above).
- ▲ Calculates a priority ranking.
- ▲ Estimates a Condition State of each road section that helps the user of the programme to select a maintenance, rehabilitation and reconstruction strategy.

Condition score

The condition score of each road section is calculated using the following equation:

$$[\text{Condition score}] (CS) = 100 - [\text{sum of deducted values for each distress}]$$

The deducted values for each distress for all types of pavements are presented in “User Manual, Pavement Maintenance Management Programme, Network Level Analysis” (Second Transport Rehabilitation Programme, Wilbur Smith Associates). One deduct value or point is used for each distress present in the pavement. If no distress is observed, the deducted value is 0 and the condition score is 100. The condition score is thus an aggregate statistic used to estimate the average condition of the road. A score of

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100 suggests that the road is in excellent condition and 0 score indicates the road is in very poor condition.

Priority Ranking

The road sections are prioritised using a priority formula where the highest score shows the highest priority. The priority formula is as follows:

$$[Priority\ Formula] = \frac{[Class\ Factor] \times [ADT\ Factor]}{[Condition\ Factor]} \times 1000$$

where:

[Class Factor] = 1.50 if Primary link
 1.25 if Secondary link
 1.0 if other

$$[ADT\ Factor] = \left(\frac{ADT}{500} \right)^{0.1} \text{ where ADT is set to 500 if unknown or less than 500.}$$

Since the introduction of the new road classification in 1998, the Class Factor, to the best of our knowledge, has not been revised.

The priority ranking is used to help in the selection of candidate projects. A project is any set of road sections that will be recommended for maintenance or rehabilitation using the same technique. Most often this is a series of consecutive sections on the same road. Due to the change in the Road classification, the class factor has to be revised.

Presently this computer program is under revision by the Consultant GTZ whose scope of work has been gradually revised to the situation where GTZ experts are providing advice to GHA Maintenance Department in the areas of capacity building, organisation development, introduction of planning and budgeting system. Under this study the existing Maintenance Management System designed and implemented in the years 1975-1977; will be revised to become a "Road Maintenance Management System" (RMS) consisting of four blocks:

- ▲ Planning and Budgeting.
- ▲ Organisation.
- ▲ Work execution.
- ▲ RMS monitoring, Evaluation and update.

The backbone of the system will consist of Road Maintenance Operating Manuals (MOM). Unfortunately, as of May 2000, only three manuals are available in draft form and could not be handed out to the Consultant for examination.

It is a comprehensive integrated road management system that proves effective in implementation when considering the DFR achievements in terms of road maintenance activities as demonstrated in the following paragraph on "Physical Achievements".

In the meantime, the existing PMMP has been reviewed and proposals for its complete revision have been formulated (see below).

Physical Achievements

In the following table, the Road Condition Mix is presented for years 1995, 1997, 1998 and 1999. In 1995, the survey only included paved roads and approximately 557 km of paved roads were considered as gravel roads. These 557 km are properly included on the line “1995 Revised” of the table below.

For 1997, the results have been compiled from the results of the road condition survey carried out under the supervision of the Consultants Wilbur Smith Associates⁵.

For 1998, the results were compiled from a document prepared by GHA describing the new network classification along with surface type and condition and from a GTZ report⁶.

Table 8 GHA Road Condition Mix for the period 1997-1999

Pavement Type	Years	Good (%)		Fair (%)		Poor (%)		Total Length
Paved	1995	2,434.0	39.47%	1,236.0	20.04%	2,497.0	40.49%	6,167.0
	1997	1,798.0	28.59%	1,607.0	25.55%	2,884.0	45.86%	6,289.0
	1998	1,959.0	32.41%	1,634.0	27.04%	2,451.0	40.55%	6,044.0
	1999	2,405.0	40.30%	1,233.0	20.66%	2,330.0	39.04%	5,968.0
Gravel	1997	659.3	8.6%	1,678.9	21.9%	5,327.9	69.5%	7,666.0
	1998	656.7	8.8%	1,701.6	22.8%	5,104.7	68.4%	7,463.0
	1999	1,993.2	26.7%	3,725.0	49.9%	1,746.8	23.4%	7,465.0
Total	1997	2,461.0	17.64%	3,283.0	23.53%	8,211.0	58.84%	13,955.0
	1998	2,619.0	19.39%	3,334.0	24.68%	7,554.0	55.93%	13,507.0
	1999	4,399.0	32.75%	4,958.0	36.91%	4,076.0	30.34%	13,433.0

Source: Road condition reports for 1997 and 1999 by Wilbur Smith Associates and GTZ

From the figure presented in “Table 8 GHA Road Condition Mix for the period 1997-1999”, it is obvious that in 1999, the situation, not including the ongoing projects for paved roads was nearly identical to the one prevailing in 1995. The length of the paved network diminished somehow because of the reversion to DFR of some road sections as mentioned previously. However, the reliability of the 1995 road condition mix cannot be fully trusted and it is therefore wiser to consider the variations trend of the road condition mix from 1997 through 1999.

3.3 Department of Feeder Roads

Introduction

The Department of Feeder Roads was set up in July 1981 with the sole responsibility for the planning, development and maintenance of feeder roads network in Ghana. At present, the Department of Feeder Roads is responsible for a network of about 22,000 km. Department of Feeder Roads also received technical assistance in 1997 from Wilbur Smith Associates in order to put in place a similar system as GHA and DUR (see

⁵ Opus already cited

⁶ Road Maintenance Project, Progress Report N°4 for the period July to December 1999, GTZ, January 2000 – Appendix A

hereafter) to allow a uniform method of evaluating road conditions and needs among the three agencies.

The goal of the project carried out by Wilbur Smith Associates was to collect road condition data at network level, to identify road deficiencies, estimate remedial measures and develop network maintenance and rehabilitation plans. At that time, DFR was already using a maintenance management system called MPBS (Maintenance Performance Budgeting System). This was an on-going project to implement a maintenance management system for purposes of annual work programming and production of contract documents for routine and recurrent maintenance. The surveys from MPBS are much more detailed than the PMMP ones, not only in the surface condition surveys that are sectioned in only several hundred meters, but also in its road and drainage analyses. The MPBS is a project-level system while the PMMP works at the network level. Finally, DFR officials dropped the PMMP system and kept the MPBS, which is now operational after three years of development, implementation and tuning.

In fact, the MPBS is a complete system for Road maintenance management as the PMMP is just a crude tool that processes road condition data and traffic to provide condition scores, priority ranking and type of maintenance works recommendations. It positions itself as a part of a MPBS.

Road standard and Road Classification

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

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

So far no length breakdowns are available as the classification is in creation.

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

District roads:..... 7m wide wearing course (from 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.

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

From an engineering viewpoint, these standards are common and acceptable as long as they are enforced⁷.

DFR divides its network into two categories: the so-called “maintainable” and “non-maintainable” sections.

Almost half of the network is considered “non-maintainable” which means that no routine maintenance is carried out on this part of the network because of limited funding. However, DFR is trying to bring step by step these “non-maintainable” sections

⁷ Some roads built between 1974 and 1990 have a wearing course 11m wide. These roads are downsized to the standards as Regravelling takes place. (DFR verbal comment).

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into a “maintainable” condition either by rehabilitation or spot improvements. This trend can be observed in the tables of the paragraph on “Integrated Road Maintenance Management System: the MPBS” hereafter. The network length increased from 23,605 km in 1997 to 24,123 km in 1999 while the “non-maintainable” part dropped from 13,800 km to 11,623 km (minus 2,177 km). The increase in the network length between 1997 and 1999 comes from the transfer of several road sections from GHA to DFR (see above in the paragraph on “Road Classification”). The “non maintainable” sections are basically roads in poor to very poor condition.

It should be noted that “Non-Maintainable” roads that have been engineered in the past have been neglected in terms of maintenance over the years. Very often these roads do not require a lot of work to return them to good “Maintainable” roads.

There is a systematic programme for the expansion of the “Maintainable” feeder road network, which extends to about 1,500 km/year. It is expected that “maintainable” roads would amount to 22,000 km in length by the year 2005. This expansion is achieved either by rehabilitation or by spot improvements and mobilises 80% of the road rehabilitation budget and 60% of the road spot improvements budget.

Integrated Road Maintenance Management System: the MPBS

The Department of Feeder Roads started in 1994 to set up and implement a road maintenance management system called “Maintenance Performance Budgeting System” (MPBS) developed as a part of the National Feeder Roads Rehabilitation and Maintenance Project (NFRRMP)

The MPBS was developed to provide the necessary standard methods and procedures to achieve the ultimate goal of providing an adequate level of maintenance service on the maintainable network of feeder roads.

The MPBS is a maintenance management system defining annual maintenance needs on a programmed basis. The MPBS uses “performance budgeting” to make budgeting an effective management tool. Using this method, budgets reflect the financial requirements needed to accomplish specific work programmes based on developed levels of maintenance service and performance standards.

Control measures are then applied to field operations to assure adherence to standard work methods and to the work programme objectives.

When maintenance funds are limited it becomes increasingly important that maintenance programmes are based on sound planning, work-related budget documentation, timely and condition-responsive intervention and effective operational control. These interventions will ensure efficient utilisation of available funds. It is the purpose of the Maintenance Performance Budgeting System to ensure this happens.

The MPBS provides DFR management with sufficient data to allow them to make decisions regarding work programming taking the following two main points into consideration:

- ▲ The available financial and other resources, and
- ▲ The expanding network of roads to be maintained.

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Moreover, the MPBS makes it possible to carry out a true decentralised decision making in the regions within an overall national framework of standards, planning values and procedures reflecting DFR maintenance policy.

In this respect, the responsibility of the regional staff is to apply standard procedures in order to manage operations in the region. At the central level it is the responsibility of HQ staff to set national standards and work quantity objectives and to see that the MPBS procedures are applied consistently and uniformly throughout the country.

The main elements of a performance budgeting system are:

- ▲ Work activities.
- ▲ The road inventory.
- ▲ Quantity standards.
- ▲ Work Programmes
- ▲ Performance Budgets.

Hence the major components of the MPBS implemented within DFR are the following (see Figure 2):

- ▲ Collection of planning data.
- ▲ Preparation of input for MPBS computer program.
- ▲ Run MPBS computer program.
- ▲ Analysis/Policy decision.
- ▲ Maintenance implementation documents.
- ▲ Monthly instructions.
- ▲ Monitoring (assessing performance).

In order for a performance budget to be *useful*, it must be applied uniformly throughout the road network and the management organisation, which is the case for all regions where the MPBS has been installed, however, the detail of which regions are using the MPBS is not known at present.

Structure of the MPBS

A simplified overview of the MPBS in the form of an activity flow chart is shown in Figure 2.

Within the MPBS, traffic data collection as well as road inventory and road condition survey procedures are defined.

Once these data have been obtained, they are processed to set an annual maintenance works programme priced to get a preliminary budget. If the budget falls within the allocated funds (from the Road Fund) it can be implemented, otherwise a new processing is required after modifying the annual quantity standards.

The MPBS includes procedures to prepare the contracts, bill of quantities etc, for the accepted annual work programme, as well as a set of procedures for the monitoring of the works and establishing contractor's payment certificates.

The system has been gradually introduced in the regions and as of 2000, the MPBS is in use in all regions. Five regions started to use the system in 2000, whilst the other five started earlier, the Eastern Region having been the pilot for the MPBS. The following table indicates the schedule of MPBS implementation within the regions.

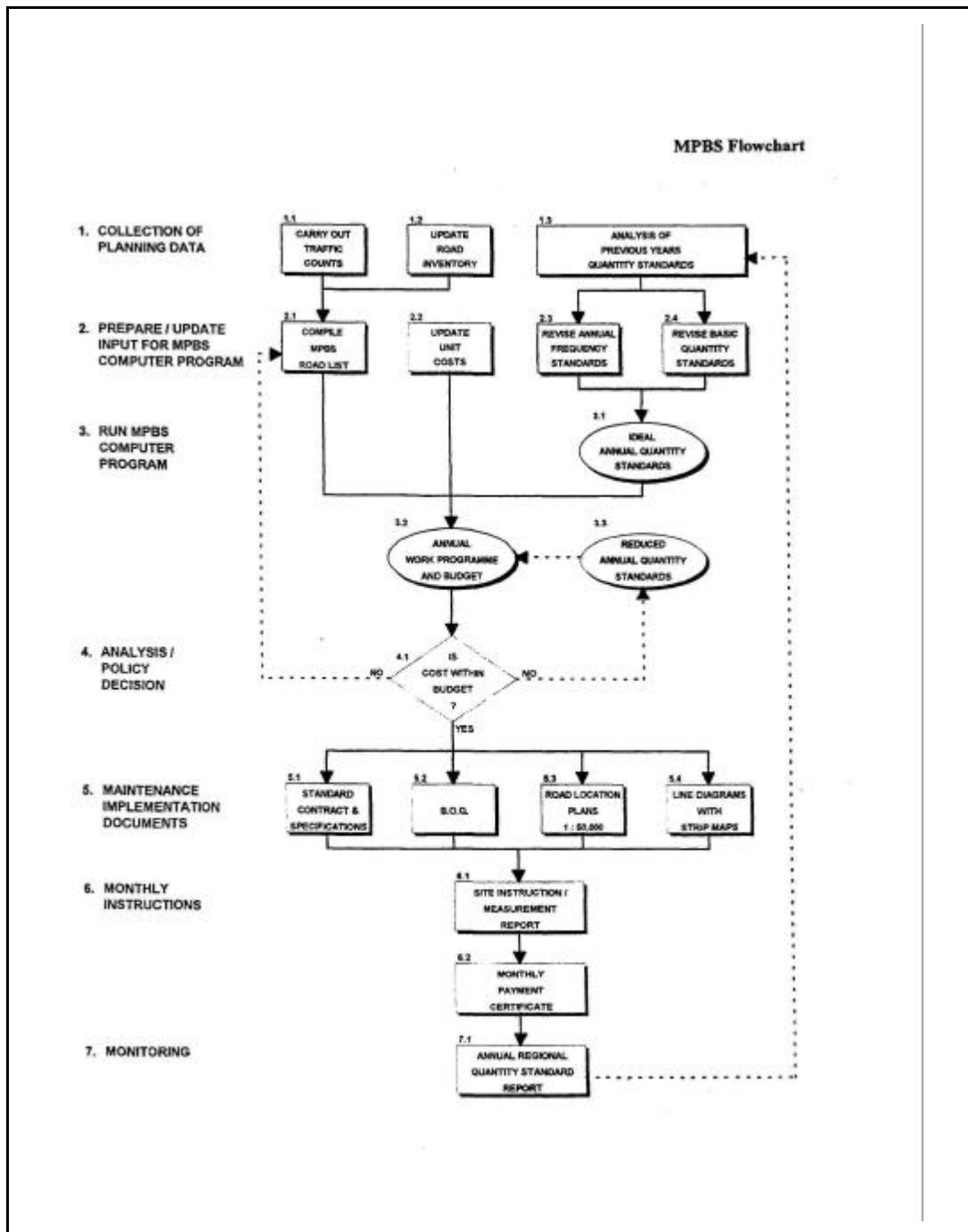
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Table 9 Schedule of MPBS implementation

Region	Year of implementation
Eastern	1994
Western	1995
Central	1996
BA	1997
Ashanti	1997
Tamale	2000
Upper West	2000
Upper East	2000
Volta	2000
Greater Accra	2000

Source: DFR officials

Figure 2 MPBS Structure and Organisation



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Current Practice

At present, DFR is handling all feeder road maintenance activities from its ten regional offices. Each Regional Office is in charge of a network averaging 2000 km. At the various levels within DFR, people are using the forms and procedures devised by the MPBS in order to:

- ▲ Assess the road condition and level of traffic.
- ▲ Define the type and quantities of unit tasks required for maintenance activities.
- ▲ Prepare road maintenance contracts.
- ▲ Monitor work performed by contractors.

At present 100% of the routine maintenance is contracted out to so-called “Single Man Contractors” (SLC) and/or “Local Private contractors” (LPC). These contractors are generally using Labour Intensive Technology for all the activities that are part of their contract under the label “SMC works”, as indicated in Appendix A.

The local DFR staff (District area engineers and/or foremen) carries out the road condition surveys and the traffic census using the MPBS (forms and procedures).

Physical Achievements

The DFR has performed quite well by lowering the length of the section in poor condition from 13% down to 4% (500 km) and by raising the length of the sections in good and fair condition from 51% to 52% and 36% to 44% respectively.

Table 10 DFR Road condition mix (all road surfaces) for the period 1997-1999

	GOOD		FAIR		POOR		TOTAL
	Km	%	Km	%	Km	%	Km
1997 (total)	5,001	51%	3,530	36%	1,275	13%	9,805
1998 (total)	No data available						
1999 (total)	6,500	52.0%	5,500	44.0%	500	4.0%	12,500
1997 revised	5,001	21.2%	3,530	15.0%	15,075	63.9%	23,605
1999 revised	6,500	26.9%	5,500	22.8%	12,123	50.3%	24,123

Source: Road Condition Study – Final Report, WSA, 1998

Table 11 DFR Road condition mix (paved roads) for the period 1997-1999

	GOOD		FAIR		POOR		TOTAL
	Km	%	Km	%	Km	%	Km
1997 (paved)	8	6%	94	71%	31	23%	133
1998 (paved)	No data available						
1999 (paved)	373	67.2%	152	27.3%	31	5.5%	555

Source: Road Condition Study – Final Report, WSA, 1998

Table 12 DFR Road condition mix (gravel roads) for the period 1997-1999

	GOOD		FAIR		POOR		TOTAL
	Km	%	Km	%	Km	%	Km
1997 (gravel)	5,001	51%	3,530	36%	1,275	13%	9,805
1998 (gravel)	No data available						
1999 (gravel)	4,600	36.8%	7,588	60.7%	313	2.5%	12,500

Source: Road Condition Study – Final Report, WSA, 1998

3.4 Department of Urban Roads

Introduction

The Department of Urban Roads has received assistance from consultants (WSA) in order to implement a maintenance management system (MMS). However, the proposed system was not found satisfactory and up to now, the system has not been put to work.

Several issues need to be worked out in order to implement such a system:

- ▲ Availability of a good city map enabling the elaboration of a street database (use of a GIS is nowadays mandatory).
- ▲ A traffic census system (could be real time for future implementation of a centralised traffic management system).
- ▲ A road condition inventory system.

Several steps have been taken by DUR recently in order to address these issues:

- ▲ Consultants have been engaged to carry out a street condition survey.
- ▲ An aerial survey of the cities under DUR jurisdiction⁸ is under way.
- ▲ Plans are made to carry out a new street inventory but pending on technical assistance availability.

It is expected that the road condition mix and a list of all urban road sections will be available before the end of year 2000.

Besides, the Department of Urban Roads has requested technical assistance within the RSSIP to make the MMS operational.

Road standards and Road classification

Road standards

DUR is using the same standards as GHA ("Standard details for Urban and Trunk Roads", MRH, March 1991).

Road classification

The urban street network is divided in four classes:

- ▲ Major arterial.
- ▲ Minor arterial.
- ▲ Collectors.
- ▲ Local roads.

At present, it seems that there is no really usable street inventory/analysis enabling determination of the distribution of the network into these four categories: so far it has not been possible to get any document/registry showing a city streets inventory.

However there is some sort of road section databank established in 1997 under the MMS project, but no condition is recorded for each element of the inventory.

Road Condition Survey

DUR received technical assistance from Wilbur Smith Associates in 1997 and a Road Condition Survey was carried out using the same supporting documents as GHA. However, in 1998 and 1999, road condition was estimated by quick visual inspection

⁸ Accra, Tema, Kumasi, Tamale, Takrasi and Ga region.

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without using a systematic and more “scientific” approach. In 2000, the road condition survey was contracted out with two teams in each city supervised by at least one DUR staff member. These teams are using a procedure based on GHA manuals.

Maintenance Management System

DUR is not currently using any procedural system for maintenance management of its network. Therefore, the planning of street maintenance works is pragmatic: City offices prepare a list of street maintenance projects and add to this list the extra works requested by local authorities

This list, once priced, is submitted to the Road Fund and, according to the budget made available by the Road Fund for DUR, this department removes as many projects as necessary to meet the available budget. The exercise is not systematic and does not involve any procedural process.

Presently, DUR is looking for a Maintenance Management System, not for a Pavement Management System. This is why Wilbur Smith Associates proposals of the PMMS were not found adequate.

At present, 95% of periodic maintenance and 65% of routine maintenance works are contracted out. It is expected that by 2004, 90% of routine maintenance works will be contracted out. Generally, the routine maintenance works contracted out are allotted as “big” SMC (Single Man Contract), which means that the contracts are signed with small companies using mostly labour force.

An “emergency” crew with a staff of 15-20 carries out the remaining routine maintenance work. These emergency crews are in charge of:

- ▲ Blockage clearing.
- ▲ Pothole patching.
- ▲ Grading works.
- ▲ Drainage repairs.
- ▲ Signs replacement.
- ▲ Daily road inspection and reporting.
- ▲ Traffic data collection.

Physical Achievements

The physical achievements are indicated in the tables below. Between 1997 and 1999, the DUR network increased from 2,211 km to 2,909 km and the sections in good conditions increased in length from 24% (530 km) to 35% (1,030 km) while the lengths of the sections in fair and poor condition remained stable with an increase of only 100 km for the fair and poor section lengths. Globally the DUR is halfway towards achieving objectives in terms of clearing the road maintenance backlog.

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Table 13 DUR Road condition mix for the period 1997-1999

Total network	GOOD		FAIR		POOR		TOTAL	
	Km	%	Km	%	Km	%	Km	%
1997 (total)	530.6	24%	574.9	26%	1,105.5	50%	2,211.0	100%
1998 (total)	No data available							
1999 ⁹ (total)	1,030.6	35.4%	677.5	23.3%	1,200.9	41.3%	2,909.0	100%

Source: Road Condition Study – Final Report, WSA, 1998

Table 14 DUR Paved roads condition mix for the period 1997-1999

Paved Network	GOOD		FAIR		POOR		TOTAL	
	Km	%	Km	%	Km	%	Km	%
1997 (paved)	486	31%	439	28%	643	41%	1569	100%
1998 (paved)	No data available							
1999 (paved)	894	54.2%	454	27.5%	302	18.3%	1,649.2	100%

Source: Road Condition Study – Final Report, WSA, 1998

Table 15 DUR Gravel roads condition mix for the period 1997-1999

Gravel Network	GOOD		FAIR		POOR		TOTAL	
	Km	%	Km	%	Km	%	Km	%
1997 (gravel)	32	5%	128	20%	482	75%	642	100%
1998 (gravel)	No data available							
1999 (gravel)	137	10.85%	224	17.78%	899	71.37%	1,259.8	100%

Source: Road Condition Study – Final Report, WSA, 1998

It should be noted that between 1997 and 1999, the DUR network increased from 2,211 km to 2,909 km. The real reason of this increase is not known. Most probably, as towns expand, new roads are added and another possibility is the handover by GHA of some city roads.

3.5 Transport Regulations

Background

Over the past decade, the volume of traffic and the axle loads have increased significantly on the Ghana road network.

Traffic has become heavier than would be expected and axle loads have often exceeded the designed capacity of the pavements. Heavy loading significantly accelerates the rate of deterioration of roads and, even with optimal maintenance, the average life cycle of the roads decreases with heavier axle loads.

At present, the law regarding axle loads limits the weight of a single axle to 10 metric tons and the weight of a tandem axle to 18 metric tons.

⁹ Source: Road Sub-Sector Strategy and Investment Programme, Appendix C3

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The stated policy of the Ministry of Roads and Transport is to enforce the existing regulation of axle load limits in order to enable the re-establishment and protection of the road capital base without spending more money than is necessary and without over-designing pavement thickness.

In order to achieve this objective (enforce existing regulation of axle load limits), a master plan for axle load controls has been drawn up. This plan aims 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 is being installed on National Road 10 from Tamale to the Burkina Faso border, a few kilometres north of Tamale and should start operation in early June 2000. Besides these 3 permanent weighbridges, GHA has also in stock 5 mobile weighbridges being used to monitor Axle Load control activities and perform on the spot checks.

The implementation of the master plan has very recently been speeded up with the following:

- ▲ Two (2) new weighbridges financed by the EU sited between Bogoso and Bawdia in the Western Region and on the access road to the port of Tema, should be ready for operation within the next 12 months.
- ▲ One (1) new GHA-funded weighbridge located at Yapei in the Northern region is being built and should be ready in less than 12 months.
- ▲ Six (6) new weighbridges financed by IDA are also being built and should be in operation before the end of 2001. IDA is also financing the acquisition of 10 mobile weighbridges.

It means that before the end of 2001, twelve (12) weighbridges should be in operation throughout the country out of a total of 27 and GHA would need an additional 16 permanent and 6 mobile weighbridges in order to meet the objective of the master plan for the Axle Load Control Programme. Presently, GHA is looking for funding assistance from the Japan International Co-operation (JICA) in order to be able to procure the remaining weighbridges.

Present operations

A combined staff of GHA and the Police is manning the two existing permanent weighbridges. The strength of the staff at each station is 5 personnel consisting of 2 people from GHA and 3 from the police. The weighbridge stations operate from 05:00 to 18:00 on Mondays to Fridays and from 05:00 to 12:00 on Saturdays.

The *theoretical* enforcement at each station includes the following:

- ▲ Weighing of each of the axles of a Heavy Goods vehicle invited to stop by police officers.
- ▲ Calculating the gross weight of the vehicle by summation of the load of each axle.
- ▲ Off-loading of excess load; and
- ▲ Booking offenders for prosecution in the Law Courts (police officers sequester the vehicle documents).

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Independent teams using mobile weighbridges monitor activities at sites other than the permanent weighbridges sites.

Actually, it appears from the Consultant's own inspection at Ofankor station, that:

- ▲ Not all trucks are systematically weighed, police officers often letting trucks go.
- ▲ The operation schedule seems 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 in order to better record the type of truck and its axle pattern (there is no need for light vehicle code value, as they are not weighed).

The Evaluation Team has been able to obtain detailed data from the two operating stations near Kumasi and near Accra for the month of February.

The outline of the results are provided in the two tables below.

Table 16 Summary of axle weighing near Accra (February 2000)

Ofankor Station (near Accra)								
Date	No of vehicles weighed	Vehicles with axles over 10 tons	Range of axle loads					
			Axle 1	Axle 2	Axle 3	Axle 4	Axle 5	Axle 6
01-feb	10	10	8-11	14-16	5			
02-feb	10	10	8-10	13-16	5-15	16	13	
03-feb	10	10	7-12	13-16	5-15	13	15	
04-feb	8	8	8-12	12-19	10-15			
07-feb	9	9	8-11	10-19	9-16			
08-feb	20	20	8-14	13-20	6-18	12-19	17-19	
09-feb	17	16	9-12	11-21	10-15	9-18	15-17	
10-feb	12	12	7-16	12-19	11-17	11-15	14-18	
11-feb	19	19	8-10	11-18	5-12	11-12	11	10
14-feb	10	10	7-10	13-15	12-13			
15-feb	12	12	6-11	12-18	5-13	12	10-12	
16-feb	17	17	8-11	11-14	5-13			
17-feb	15	15	7-11	10-16	5-14	13-15		
18-feb	16	16	6-11	10-17	10-13	14-15	14-15	
21-feb	10	10	6-11	11-15	13-15	12-15		
22-feb	10	10	7-12	11-19	5-15	15		
23-feb	15	15	7-10	12-20	5-15	10-17	10-16	
24-feb	13	13	5-11	11-19	13-15	12-18	15-16	
25-feb	10	10	7-10	11-15	5-15	14	13	
28-feb	14	14	8-10	13-15	5-12	13		
29-feb	10	10	7-11	13-18	5-18	14	13	
Totals	267	266						

Source: Compilation of weighbridge weight recording logs by the Evaluation Team

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Table 17 Summary of axle weighing near Kumasi (February 2000)

ASUOYEBOAH Station (near Kumasi)								
Date	No of vehicles weighed	Vehicles with axles over 10 tons	Vehicles with axles over 11 tons	Range of axle loads				
				Axle 1	Axle 2	Axle 3	Axle 4	Axle 5
01-feb	20	2	-	5-7	8-11	7-11	8-10	8-9
02-feb	12	2	-	4-6	8-11	9-11		
03-feb	Missing							
04-feb	16	3	1	4-6	8-11	8-15	8-9	
05-feb	12	4	-	3-7	8-11	8-11		
07-feb	25	7	-	2-7	5-11	8-11	8-11	
08-feb	23	3	-	4-6	8-11	7-11	7-11	
09-feb	13	3	-	4-7	7-11	8-11	10-11	
10-feb	19	2	-	3-6	9-11	9-11	7-10	7-10
11-feb	10	1	-	4-6	6-10	9-11	9-10	
12-feb	10	2	-	4-6	9-10	9-11	9-10	
14-feb	14	2	-	3-6	7-11	7-11	7-10	
15-feb	23	5	1	4-7	7-11	7-15	8-10	
16-feb	15	1	1	4-6	7-12	7-10	7-10	7-9
17-feb	18	5	1	4-7	7-13	7-10	7-10	8-10
18-feb	18	1	-	4-6	7-11	7-11	9-10	8-9
19-feb	20	1	-	3-6	9-11	7-11	7-11	
21-feb	22	3	-	4-7	8-11	7-11	7-10	
22-feb	17	3	1	4-6	6-12	6-19	7-9	
23-feb	19	5	2	3-7	7-15	7-15	7-11	7-9
24-feb	20	4	2	3-7	8-11	8-13	8-11	
25-feb	17	3	-	3-6	8-11	7-10	7-10	
26-feb	17	4	-	4-6	8-11	9-11	9-10	
28-feb	18	6	-	4-7	8-11	7-11	7-10	
29-feb	19	6	1	3-7	7-11	7-11	7-10	7-9
Totals	385	74	1					

Source: Compilation of weighbridge weight recording logs by the Evaluation Team

The results from the two weighbridges are very different

The results from the Accra weighbridge indicate that:

1. Almost 100 % of trucks weighed were overweight.
2. Weight of even the first axle is very high at Ofankor, which indicates that there might be a problem of methodology in the weighing of the trucks or a default of calibration.
3. Empty trucks are not weighed.
4. They operate a 5-day working week.

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5. The readings do not add up with respect to the trucks that come from the Kumasi weighbridge.
6. Experienced manpower is short.
7. More training is required especially in the treatment of tandem axles. Is it not possible that some of the high weights on the 3rd and 4th axles are tandem?
8. Results from the May reading suggest that even though most of the vehicles weighed exceeded 10 tonnes, unlike the Feb. readings they ranged between 10 - 13 tonnes.

The results from the Kumasi weighbridge indicate that

1. Several trucks show axle weights between 10 and 11 tonnes eliciting suspicion that some truck drivers may be offering bribes.
2. Weight of the first axle is reasonable i.e. 3-6 as compared to 10-14 tonnes in Accra.
3. Weights are fairly consistent with that from earlier years e.g. 1996 except that there has been marked improvements.
4. Empty trucks are not weighed.
5. They operate a 6-day working week.
6. Experienced manpower is short.
7. More training is required especially in the treatment of tandem axles.

Further to these observations, some explanations by GHA officials have been made available:

- ▲ Only suspected trucks are weighed which explains why all trucks are not systematically weighed.
- ▲ Permanent weighbridges are calibrated twice a year and erroneous readings are not supposed to happen.

The fact that not all trucks are weighed does not allow the creation of sound statistics as to the overall improvement of the situation regarding axle overloading. The existing procedure aims only at bringing the maximum number of offending trucks to court, which is some kind of policy but does not help in ascertaining whether the overall situation is improving or not.

As for calibration, it would be easy to weigh daily a standard vehicle whose weight is well known to be sure that the weighbridge readings are correct; this is a simple and easy way to check the calibration of the weighbridge.

3.6 Contractors

Within the framework defined by the policy adopted by the Government of Ghana, which aims at contracting out to private contractors 90% of the road maintenance works, the Ministry of Roads and Transport has devised a Classification Register for the Road and Bridges Contractors.

The classification table shown below defines four categories of works and within each category four classes depending on the ability of a contractor to cope with a larger amount of work within that category.

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As of September 1998, 257 contractors in the road sector were registered under MRT:

- ▲ 9 contractors in Class 1.
- ▲ 13 contractors in Class 2.
- ▲ 84 Contractors in Class 3.
- ▲ 151 Contractors in Class 4.

Presently (as of December 31st 1999), 570 contractors are registered, most of them being in class 3 or 4 which indicates they are small companies. Only 12 companies are in class 1 for roads and bridges construction and 1 company is in class 1 for bridges only (be it concrete or steel). Seventeen companies are in category “C”, which means that they can perform road construction, maintenance and spot improvements using labour based methods as trained by the Department of Feeder Roads.

The quality of the works carried out by the contractors does not seem to be questioned: we did not find any indication of a specific problem in the monthly progress reports for the dozen of contracts that we examined. However, many problems were found with regard to the contract duration and variation orders but this point is dealt with in the “Contract Management” group.

The biggest problem that contractors are currently facing is securing the cash flow to operate in a sound fashion. Without a sound financial basis and cash received in a quick and easy manner, quality of work can never be assured. This issue is closely related to the arrears problem and the way payments to contractors are handled (see contract management group and financial matters).

However, the twofold increase in the number of registered contractors is a good sign of the dynamism of the sector and demonstrates the interest and the commitment of the private sector to the Government of Ghana policy of involvement of the private contractors in the road maintenance activities.

Labour-based maintenance activities

In 1983 because of adverse conditions, it was difficult for GHA to maintain its entire labour force and this was the time they introduced the so-called “Single Man Contractor” (SLC) concept.

Under this concept, a contract is concluded with an individual who is responsible for the routine maintenance (mainly grass cutting) of a 5 km stretch of road. In some rare cases, contracts were signed with registered companies, which employed several people in order to maintain sections up to 20km or so. The concept was applied only to the paved roads network

Furthermore, DFR also started a programme to promote the labour-based maintenance activities for its road maintenance needs. The programme included a training component for small contractors and it appears to be quite successful.

Presently, for GHA, most of the routine maintenance activities are contracted out in the framework of the SLC scheme where the works (grass cutting, ditch cleaning, culvert desilting) are carried out by hand. For DFR, the situation is similar with the objective of

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100%¹⁰ of routine maintenance contracted out using merely trained contractors operating under labour intensive technology.

It should be noted that labour-based activities are dedicated to routine maintenance only. For GHA these activities involve roughly 1,000-1,200 people on a full time basis. For DFR, no estimate could be obtained.

Table 18 Classification of Contractors

¹⁰ This objective is already achieved in a certain number of regions and particularly in the Eastern region.

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MINISTRY OF ROADS AND TRANSPORT GUIDELINES FOR THE CLASSIFICATION OF CONTRACTORS FOR ROAD AND BRIDGE WORKS

CLASSIFICATION TABLE FOR ROAD CONTRACTORS BY CATEGORY AND CLASS

CLASS	CATEGORY A	CATEGORY B	CATEGORY C	CATEGORY S
	ROADS AIRPORTS & RELATED STRUCTURES	BRIDGES, CULVERTS & OTHER STRUCTURES	LABOUR BASED ROADWORKS	STEEL BRIDGES AND STRUCTURES: CONSTRUCTION, REHABILITATION AND MAINTENANCE
4	Spot improvement and reshaping, 80km and regravelling, 20km a. Tender figure up to cedi equivalent of US\$250,000 b. Total value of work on hand up to cedi equivalent of US\$400,000	Pipe culverts up to 1.2m diameters and non-reinforced concrete structures, drains - 0.5km a. Tender figure up to cedi equivalent of US\$100,000 b. Total value of work on hand up to cedi equivalent of US\$150,000	ROAD CONSTRUCTION MAINTENANCE AND SPOT IMPROVEMENT USING LABOUR BASED METHODS AS TRAINED BY THE DEPARTMENT OF FEEDER ROADS	This Class not applicable
3	Work in Class 4 plus resealing up to 20km and resurfacing up to 10km a. Tender figure up to cedi equivalent of US\$650,000 b. Total value of work on hand up to cedi equivalent of US\$1,000,000	Work in Class 4 plus single box culverts and other minor reinforced concrete structures including short retaining walls a. Tender figure up to cedi equivalent of US\$250,000 b. Total value of work on hand up to cedi equivalent of US\$400,000		Sand blasting, cleaning, jacking, changing of members and parts, tightening of bolts and nuts, other repairs including painting. a. Tender figure up to cedi equivalent of US\$250,000 b. Total value of work on hand up to cedi equivalent of US\$400,000
2	Work in Class 3 plus improvements, rehabilitation and minor construction works a. Tender figure up to cedi equivalent of US\$1,250,000 b. Total value of work on hand up to cedi equivalent of US\$2,000,000	Work in Class 3 plus major box culverts on bridges and reinforced concrete, steel or composite reinforced structures a. Tender figure up to cedi equivalent of US\$500,000 b. Total value of work on hand up to cedi equivalent of US\$750,000		Work in Class 3 plus minor construction a. Tender figure up to cedi equivalent of US\$500,000 b. Total value of work on hand up to cedi equivalent of US\$750,000
1	Work in Class 2 plus major construction of roads and airports. No limit on tender.	Work in Class 2 plus bridges and other major structures No limit on tender.		Work in Class 2 plus major steel construction No limit on tender.

4 EVALUATION

4.1 Relevance

Clearing the backlog

The main objective of the Government is clearly stated in its policy letter: "... to clear the large backlog of maintenance on a sustainable long-term basis"

So all actions that contribute to improving the overall condition of the road network fits this policy, that is likewise heavily endorsed by the donors.

From the technical viewpoint, it is clear that within each agency, all actions implemented are aimed at helping to clear the maintenance backlog and can be declared relevant with respect to the stated policy.

Private sector participation and financing

The heavy involvement of the private sector in road maintenance activities (90% of the routine works contracted out by GHA, 100% by DFR) fits perfectly into the privatisation scheme of the Government of Ghana as it has promoted many companies to work into the sector. The distribution of the works into small packages (like grass cutting or ditch cleaning) appears to be efficient and well in line with the policy. The fact that nearly 600 contractors are registered today is a success and proof of the interest and ability of the private sector to take on road maintenance activities.

The maintenance activities reserved for labour-intensive technology such as grass cutting, ditch and culvert cleaning, gravel road patching, etc. have undoubtedly encouraged many individuals to start their own business and make a living out of it. This responds well to the stated policy and goes even beyond it by helping individuals to create their own jobs.

Road transport regulations

The Axle Load Enforcement Programme as defined is perfectly in line with the objectives for the road sector as stated by the Government that intends to enforce axle weight regulations. The programme is also supported by donors (EU-TRIP II project and HSIP)

4.2 Effectiveness

Clearing the backlog

Presently, the situation can be summarised in the two following tables which present the proposed downsized programme amounting to US\$ 1.56 billion for the period 1996-2000 and the achievements for the period 1997-1999, compiled from the various reports (sometimes contradictory or vague) issued by the three agencies and the Ministry of Roads and Transport: annual reports, donors conference, RSSIP review, etc.

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Table 19 Scaled down maintenance programme for 1996-2000

Sub-Programme	MRH	Trunk Roads		Feeder Roads		Urban Roads		Total
		(Ghana Highways Authority)		(Department of Feeder Roads)		(Department of Urban Roads)		
		Km	US\$ Million	Km	US\$ Million	Km	US\$ Million	US\$ Million
		Total / p.annum		Total / p.annum		Total / p.annum		
Routine Maintenance		11,600	69	18,800	31	830	13	113
Periodic Maintenance		7,600	330	8,490	89	400	74	493
Rehabilitation		360	48	4,980	84			132
Reconstruction		920	427	89	12	134	148	587
Administration	10		59		9		5	83
Arrears			53		4		18	75
Totals	10		986		229		258	1,483

Source: Staff Appraisal Report, HSIP, April 1996, The World Bank

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Table 20 Overall achievements for the three agencies over the period 1996-2000

Achievements	Trunk Roads (Ghana Highways Authority)		Feeder Roads (Department of Feeder Roads)		Urban Roads (Department of Urban Roads)		Total US\$ Million
	Km Total / p.annum	US\$ Million	Km Total / p.annum	US\$ Million	Km Total / p.annum	US\$ Million	
1996							
Routine Maintenance	6,000	2.43	2,000	2.06	510	1.66	6.15
Periodic Maintenance	471.2	18.93	3,716	45.53	60	5.98	70.44
Rehabilitation	35	4.45			14	2.56	7.01
Reconstruction	250	91.84	8	0.43	18	40.97	133.24
1997							
Routine Maintenance	5,400	6.4	4,550	3.7	600	2.18	12.28
Periodic Maintenance	333	19.6	478	7.2	25.2	1.5	28.3
Rehabilitation	95	11.9	1,394	13.1	19.4	4.2	29.2
Reconstruction	250	96.85	6	0.1			96.95
1998							
Routine Maintenance	8,415	10.86	9,500	5		3.3	19.16
Periodic Maintenance	482	38.41	930	15.69	120.6	14.9	69
Rehabilitation	53		693	9.42	20.6	35.13	44.55
Reconstruction	170	62.73	0	0			62.73
1999							
Routine Maintenance	4,897	6.75	11,570	4.5	1,600	4	15.25
Periodic Maintenance	1,062.4	43.01	1,945	6.55	61.72	10.19	59.75
Rehabilitation			250	3.14	14.93	4.56	7.7
Reconstruction	197	105.7	7	0.27		30.28	136.25
2000 (estimation based on 80% of objective achievements)							
Routine Maintenance	9,280	11.2	9,440	7.296	1,066.4	6.4	24.90
Periodic Maintenance & Rehabilitation	1,072	44.8	3,597.6	39.12	236.8	23.68	107.60
Rehabilitation (Upgrading)	48	5.6	0	0	0	0	5.60
Reconstruction	96	56	16	0.504	19.2	17.6	74.10
Total 1996-2000							
Routine Maintenance	6,798.4	37.64	7,412	22.556	944	17.54	77.736
Periodic Maintenance	3,420.6	164.75	10,666.6	114.09	504.32	56.248	335.088
Rehabilitation	231	21.95	2,337	25.66	68.93	46.452	94.062
Reconstruction	963	413.12	37	1.304	37.2	88.85	503.274
Total spent		637.46		163.61		209.09	1,010.16

Sources: Road Sub-Sector Strategy and Investment Programme, 1997, 1998 and 1999 Review reports

Note: For the sake of comparison an estimated achievement for 2000 is used. It remains to be seen whether actual achievement will be near the estimated 80 percent.

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Total expenditures according to the above table for the period 1996-2000 (five full years) amounts to 1,010 million US\$, compared to 1,483 million US\$ envisioned for the period 1996-2000.

Agency by agency the physical achievements are as follows:

GHA

- ▲ For routine maintenance, the objective was 11,600 km per annum and the achievement is an average of 6,800 km per annum, which is slightly above 58%,
- ▲ For periodic maintenance and rehabilitation, the objectives were 8,490 km and only 3,650 km were completed (43%),
- ▲ For reconstruction, the objective was set at 920 km and 963 km were completed (104%)

With due respect to the objectives set forth in the “Scaled down Maintenance Programme for the period 1996-2000”, it is clear that achievements missed the goals for all maintenance activities and more precisely for periodic maintenance and routine maintenance. The various reasons for this underachievement are not technical but rather financial and are detailed in the Annex VIII (GHA spent only 637 Mio US\$ for an overall scheduled disbursement of 986 Mio US\$, including reconstruction works for 413 Mio US\$)

DFR

- ▲ For routine maintenance, the objective was 18,800 km per annum and the achievement is an average of 7,400 km per annum (39%). This amount is fairly close to the length of the “Maintainable” network however.
- ▲ For periodic maintenance and rehabilitation, the objectives were 8,490 km and 4,980 km respectively or 13,470 km in total. So far, 13,003 km has been completed (96,5%).
- ▲ For reconstruction, the objective was set at 89 km and 37 km has been achieved.

Again in clearing the backlog, DFR is behind schedule for routine maintenance because of the ‘Non maintainable part of the network’ but the situation is more favourable than for GHA, particularly for periodic maintenance and rehabilitation where the achievements are close to 100%. No specific technical reasons besides perhaps slow implementation of the MPBS seem to justify the delay in the achievement of the objectives. The main reason again is financial: DFR spent roughly 164 Mio US\$ out of a forecast of 229 Mio US\$.

DUR

- ▲ For routine maintenance, the objective was 830 km per annum and the achievement is an average of 944 km per annum (114%).
- ▲ For periodic maintenance and rehabilitation, the objective was 400 km. So far, 573 km has been completed (143%).
- ▲ For reconstruction, the objective was set up at 134 km and about 37 km have been achieved but the situation is not fully clear because there is sometimes a mix between rehabilitation and reconstruction figures in the results made available to the evaluation team.

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DUR performed quite well in routine maintenance activities where the objectives were exceeded and also in periodic maintenance, rehabilitation and reconstruction. DUR spent roughly 209 Mio US\$ out of a forecast of 258 Mio US\$

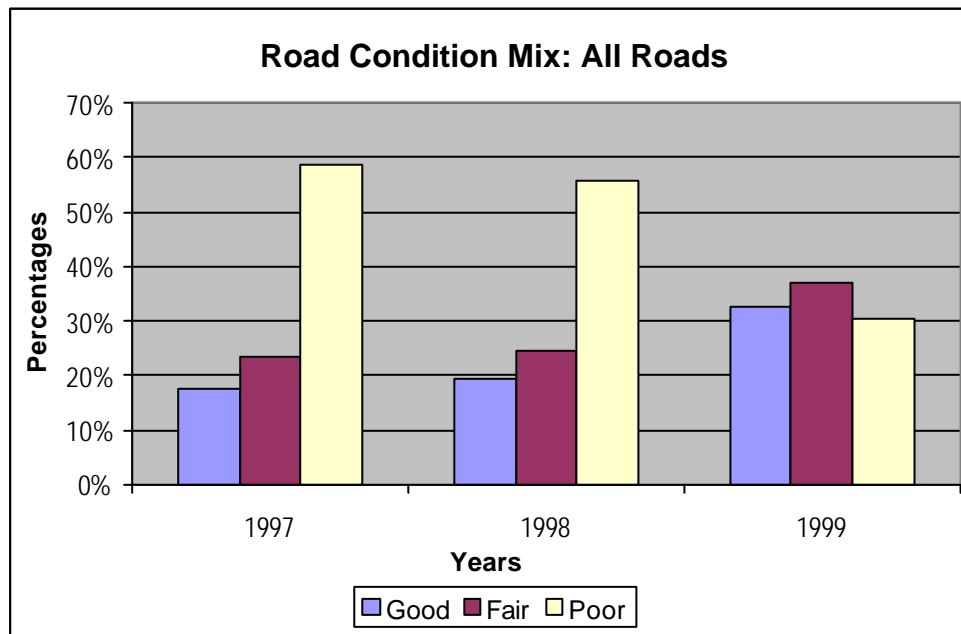
From these figures it is clear that the programme objectives were close to full achievement except for GHA which showed an overall 50% achievement in all maintenance activities. It can thus be said that programme implementation was quite effective. The achievement gaps are linked to several causes that are not technical in character.

Despite GHA underachievement in purely maintenance activities, and after careful examination it appears that somehow the global objective of having 70% of the network in good condition, 20% in fair condition and only 10% in poor condition might be achieved by 2005 if there are improvements in several groups of activities related to the road maintenance environment such as:

- ▲ Sound and robust contract management procedures,
- ▲ More efficient and swift budgeting in order to enable the maintenance activities to start earlier each year,
- ▲ For GHA to get rid of its debt to contractors so as to enable the full release of the approved budget for work actually done and prevent partial achievements of programmed work.

The evolution of the road condition mix for GHA is summarised in the following graph.

Figure 3 Road Condition Mix 1997-1999

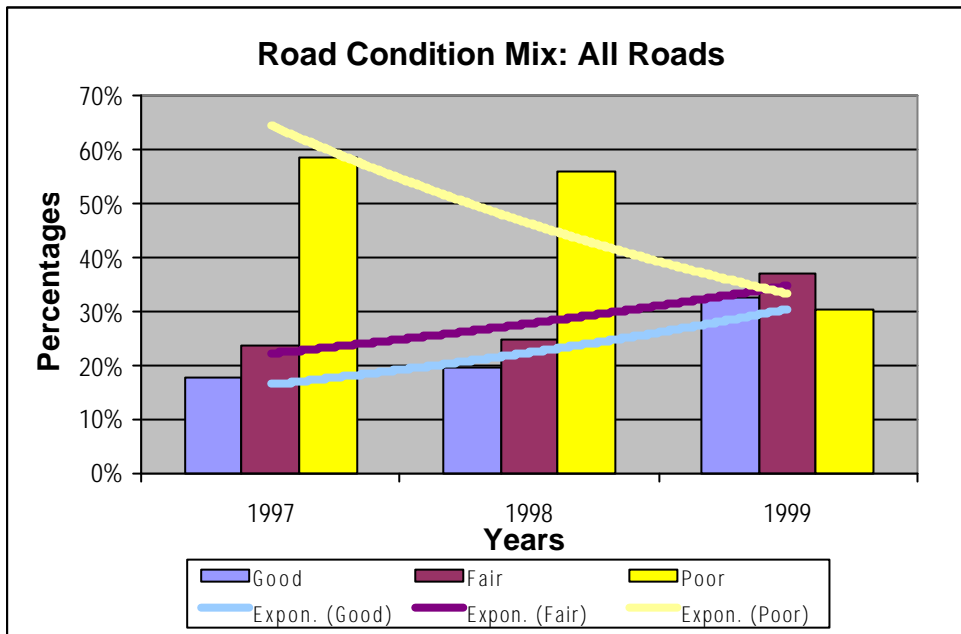


Source: Road Condition survey reports

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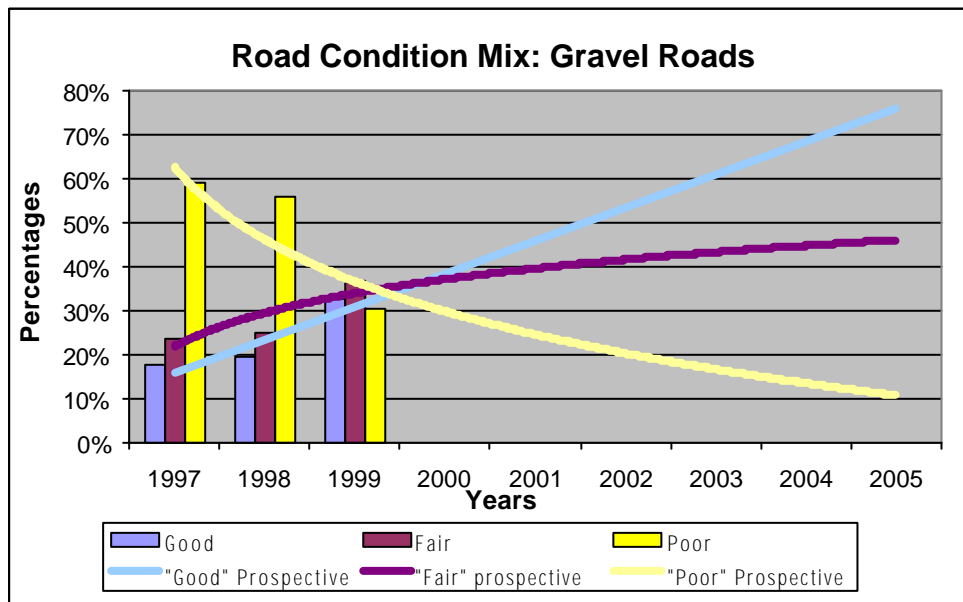
And the trends that can be identified are presented on the graph hereafter. On this graph it is perfectly clear that there is a definite trend towards a drastic reduction in the length of road sections in poor condition in par with an increase in length for fair and good condition sections.

Figure 4 General Trend for Road Condition Mix 1997-1999



Source: Road Condition survey reports and Evaluation Team estimations

Figure 5 Trend extrapolation for Road Condition Mix 1997-1999



Source: Road Condition survey reports and Evaluation Team estimations

However, it is impossible to state whether the 2005 objective of 70-20-10 will be achieved because of many uncertainties. However, if present trends are maintained for

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the next five years, the objective is within reach, at least for the 10% in poor condition. The remaining 90% will be a mixture of “good” and “fair” without a definite distribution forecast at present.

As far as the road condition is concerned it can be questioned whether the surveys were fully reliable. In order to answer that question, a random check was made in May 2000 of the road condition survey in the Accra, Kumasi and Tamale areas. It appeared that generally there was no problem in the way the survey was performed, although from time to time it seems that the road condition was underestimated. It should be noted however that the check was done during the rainy season and that especially on gravel roads, the condition can be clearly worse than only one month before. Most of the problems encountered also deal with inaccurate section lengths. In conclusion, it can be said that the quality of the survey is generally good and that the Road Condition Mix obtained from the road condition survey results performed since 1997 by the regional staff of GHA are trustworthy.

The following table presents the results of the controls carried out by the evaluation team:

Table 21 Road condition survey control, Ashanti Region

Description From/To	Route No.	Type		Date of original survey	Date of NEI survey	Quality of Survey	Remarks (if any)
		Km Paved	Km Gravel				
Kumasi - New Offinso	R52/01	25	13	20-Mar-00	10-May-00	OK	Further deterioration in gravel section
Kumasi - Ahenkro	N10/05	28		23-Mar-00	10-May-00	OK	
Agona - Ahenkro	R43/03	4	21	21-Mar-00	10-May-00	OK	
Kumasi - Agona	IR4/01	53		28-Mar-00	11-May-00	OK	
Agona - Effiduase	R43/02	2	14	21-Mar-00	11-May-00	Fair	Further deterioration in gravel section
Effiduase - Ejisu	R104/02	20		22-Mar-00	11-May-00	OK	Ravelling understated, Distance on map incorrect
Ejisu - Kumasi	N6/05	18		21-Mar-00	11-May-00	OK	
Ejisu - Kuntanase	R104/01	3.2	16	22-Mar-00	12-May-00	?	Cannot find section on gravel roads
Kuntanase - Kumasi	R106/01	24		15-Mar-00	12-May-00	Fair	More prevalent than localised
Kuntanase - Bekwai	R104/01	17		22-Mar-00	12-May-00	Fair	Rutting & Alligator cracks understated. Culverts silted
Kumasi - Anwiankwanta	N10/04	28		30-Mar-00	12-May-00	OK	Under construction
Anwiankwanta - Manso	R105/01	18	12	29-Mar-00	13-May-00	Fair	Distances incorrect and gravel section not well surveyed
Manso - Toase	R108/01		25	29-Mar-00	13-May-00	?	Distance incorrect, Width overstated, gravel thickness overstated, Serious deterioration
Nkawie - Abuakwa	IR5/01	15		15-Mar-00	13-May-00	OK	

Source: Evaluation team Road Condition Random Survey

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Table 22 Road condition survey control, Northern Region

Description From/To	Route No.	Type		Date of original survey	Date of NEI survey	Quality of Survey	Remarks (if any)
		Km Paved	Km Gravel				
Tamale - Daboya	R109/01	6	57	12-Apr-00	14-18 May-00	OK	Daboya not accessible by car due to the White Volta
Tamale - Fufulsu Jn	N10/O9	58		12-Apr-00	14-18 May-00	OK	Higher overgrowth due to elapsed time and rains
Fufulsu Jn - Busunu	N7/01	0.4	28	12-Apr-00	14-18 May-00	OK	
Busunu - Daboya	IR10/01		54	12-Apr-00	14-18 May-00	OK	
Tamale - Savelugu	N10/10	26		12-Apr-00	14-18 May-00	OK	Km don't add up
Nanton - Karaga	R90/01		60	13-Apr-00	14-18 May-00	OK	
Karaga - Gushiegu	R107/01		25	13-Apr-00	14-18 May-00	OK	
Gushiegu - Sakpeigu	N2/09		44	15-Apr-00	14-18 May-00	OK	
Tamale - Jerigu	N9/02	10		13-Apr-00	14-18 May-00	OK	
Jerigu - Salaga	IR4/06	36	23	13-Apr-00	14-18 May-00	Fair	Slight understatements. 40 km under construction (Taysec)
Salaga - Bimbila	R29/02	1	59	13-Apr-00	14-18 May-00	Fair	Slight understatements.
Yendi - Pusuga	N2/07		55	14-Apr-00	14-18 May-00	OK	
Tamale - Yendi	R201/01			12-Apr-00	14-18 May-00	OK	Under construction
Fufulsu Jn - Buipe	N10/08	48		12-Apr-00	14-18 May-00	OK	Under construction
Pusuga - Bimbila	N2/06		14	14-Apr-00	14-18 May-00	Fair	Slight understatements
Savelugu - Nanton	R91/01		15	12-Apr-00	14-18 May-00	OK	
Tamale - Nanton	R90/01		18	12-Apr-00	14-18 May-00	OK	
Sakpeigu - Yendi	N2/08		12	15-Apr-00	14-18 May-00	OK	

Source: Evaluation team Road Condition Random Survey

The comments that can be formulated after the controls are as follows:

- ▲ Survey was generally carried out in the rainy season so there were understandable differences due to deterioration.
- ▲ Survey showed that graveling in several areas was understated.
- ▲ Since the rains had generally started the dust level s and base gravel seemed better than would be in the dry season.
- ▲ The issue of flushing and patching is subjective with respect to the operator.
- ▲ My personal opinion was that it had in several areas being understated.
- ▲ Road widths were inspected to make estimations. Overstated in some cases.
- ▲ In most cases gullies and corrugations which had been described as localised and slight were found to be more prevalent and moderate. Attributed to rains?
- ▲ Kumasi - Ejisu is Asphaltic concrete. Can there be ravelling?

Finally, in terms of road condition mix, the situation appears to be more favourable because the trends that derive from what has been accomplished today compared to the initial condition in 1996-1997, bring the hope that the final objective is in reach for 2005 at least from a technical viewpoint although some mistakes have been made. Was it, for example, necessary to try to implement two maintenance management systems, the PMMP and the MPBS within DFR when one (MPBS) was already in the course of being developed for almost three years and people were getting used to it?

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It is therefore anticipated that although “Clearing the Backlog” has not yet reach its mid-term objectives, it could be possible to achieve the 2005 objectives, provided a few bottlenecks be suppressed.

Prioritisation process

Another point to consider at least for GHA and DUR is the prioritisation process for maintenance activities:

- ▲ Within GHA, so far, the PMMP does not seem to be fully operational although its implementation process started in 1996. This is not effective and is hindering a sound project selection, slowing down the path to the achievement of the objectives.
- ▲ Within DUR, no system has been put in operation yet.

This situation is not sound and prevents a good planning and preparation of maintenance works, leading to ineffective choices in terms of budget allocation for maintenance works. It explains partially why GHA has performed badly in terms of periodic maintenance activities (it seems rather that reconstruction works have been favoured).

Traffic Counts

According to general opinion, the results are not fully reliable because of supervision problems caused by the lack of experienced personnel:

According to GHA Planning Division (1998 Annual Traffic Report), the following problems are hindering routine traffic surveys:

- ▲ Inadequate numbers of Regional Traffic Officers.
- ▲ Insufficient Road Overseers (Enumerators).
- ▲ Lack of automatic traffic counters.
- ▲ Continuous reliance on outdated daily adjustment factors.

In order to cure these problems, the planning division is suggesting the following:

- ▲ The entire Census Points system should be reviewed to reflect the current status of the trunk road network.
- ▲ The existing daily adjustment factors need to be revised.
- ▲ Automatic Traffic Counters should be provided for use by the Planning Division.
- ▲ Qualified personnel should be recruited, trained and posted to the regions as Regional Traffic Officers.
- ▲ The idea of contracting traffic data collection to private entities should be given a very serious attention.

If the reliability of the routine traffic surveys is genuinely questionable, which is, under the conditions of the present study impossible to verify, the proposals of the Planning Division are worth considering. It is actually mandatory to review the census points in order to match the new road classification system in such a manner as to have at least one census point for each link (between two Link Nodes, see above). Secondly, the use of automatic traffic counters at carefully selected locations and operating all year long (permanent counts) would be very helpful to evaluate revised daily adjustment factors. And third the eventuality of contracting out the traffic census to private entities could bring reliability and sustainability to the system, as it has been the case in many countries because of the lack of enough personnel within road administrations and agencies. This is important because a good and reliable knowledge of the magnitude of the traffic flows is critical in deciding upon the type of maintenance work required by a road section in a certain condition.

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PMMP

The PMMP has been put into operation since 1998 in the Maintenance Division of GHA after Wilbur Smith Associates tested it in 1997. However, this software is actually not fully functional. According to GTZ people who are currently providing technical assistance to GHA for the use of the PMMP there are a few glitches in the programme that are hindering its proper use as can be understood from the following except:

Quote from “Experience in use of PMMP from the 1999 Road Condition Report and 2000 preliminary Maintenance Budget as well as frontiers for modification/review”:

As a budgeting tool, the PMMP uses the data from the visual road condition survey and roughness of the road to determine a condition state of the road and then recommends a maintenance option. 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-dependes on Roughness Measurements for the evaluation of the road condition score and without correlation or prediction curves or equations the system cannot be used if the roughness measurement equipment breaks down
- ▲ 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 recommended maintenance options in PMMP would need to be reviewed to conform to GHA maintenance options. This means that the decision tree have to be studied and modified accordingly. The programme cannot accept text or characters as route numbers as it is the case now with the new network classification system

Another important issue with the software is the determination of the gravel road condition score: the gravel road condition is determined using Roughness Measurement. According to (Claros G., 1997), this gravel condition should have been calculated in a similar fashion to the paved network. Although the condition score is calculated for gravel roads, it is not used for condition determination. It appears then that the use of Roughness Measurement and the ranges set for “Good”, “Fair” and “Poor” did not result from any detailed study of gravel road condition. This is introducing a bias in the overall evaluation of the gravel road condition. Since for example, a road recently graded but with a very thin layer of good quality material may be classified as “Good” because of low roughness index but its roughness (i.e.; condition) can change tremendously to a worse state after a heavy rain and the passage of a few vehicles.

Private sector participation and financing

In terms of achievements of the participation of the private sector in the road maintenance activities it seems that the objectives have been reached since the policy stated that by 1999, 90% of maintenance works would be contracted out. This is presently the case for the three agencies although not quite for DUR, which has specific activities and has reached only 65% for routine maintenance and 95% for periodic maintenance.

Until the situation regarding the arrears due to the contractors is cleared, it will be difficult to assess whether private contractors are really efficient in road maintenance activities.

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It is clear that labour-based maintenance activities permit achieving specific objectives whenever these activities are pertinent. The achievements in that domain have always been high according to the figures received for grass cutting activities or ditch cleaning and presented in the following tables for years 1997 and 1998 (only years for which the information was available):

Regarding routine maintenance, the 1997 achievements were about 67%

Table 23 Labour-based activity achievements for GHA in 1997

1997	ACTIVITY	Unit	Approved Programme	Achievement	% Achievement
SMC Activities	Grass cutting		25,000	22,351	89.40%
	Ditch Cleaning	Km	7,794	5,066	65.00%
	Culvert Cleaning/Desilting	No	18,357	9,546	52.00%
LPC (Gravel)	Grading	Km	20,112	11,148	55.43%
	Patching		68,408	75,470	110.32%
	Ditch cleaning (machine)		10,186	4,804	47.16%
LPC (Paved)	Pothole patching	M ³	10,871	5,979	47.16%
Average achievement					66.64%

Source: GHA 1998 Annual Report

Regarding routine maintenance, the 1998 achievements were about 80%

Table 24 Labour-based activity achievements for GHA in 1998

1998	ACTIVITY	Unit	Approved Programme	Achievement	% Achievement
SMC Activities	Grass cutting		22,987	22,698	98.74%
	Ditch Cleaning	Km	No figure available	No figure available	80.00%
	Culvert Cleaning/Desilting	No	No figure available	No figure available	77.40%
LPC (Gravel)	Grading	Km	No figure available	No figure available	74.99%
	Spot Improvement/Culverting	Cedis Mio	No figure available	No figure available	81.00%
LPC (Paved)	Pothole patching	Km	2,626	2,065	78.64%
Average achievement					79.76%

Source: GHA 1998 Annual Report

Road transport regulations

When examining the operation conditions and the results obtained from the two existing weighbridges, it is obvious that there are problems and that action should be taken. While for example nearly 100% of the weighed trucks near Accra are above the axle load limit it cannot be stated that the system is performing well and fulfil the objective of decreasing the number of offending trucks travelling on the roads. The main issue in our view is the evaluation of the effectiveness of the axle load control programme, which

requires specific statistics that cannot be made available with the existing weight control procedures.

Moreover, we feel that the programme as it is designed presents drawbacks as it is mainly repressive and lacks educational features. In that respect it is unlikely that this programme will be effective as there is no obvious trend that shows a decrease in the number of offending trucks. Therefore it is strongly felt that without carefully thought amendments, the programme will not permit fulfilment of the objectives of Government of Ghana.

4.3 Efficiency

Clearing the backlog

For this specific objective we have seen that various activities aiming at fulfilment are not very effective (roughly 50% of physical achievement) and it appears also that some of these activities are not efficient, which tends to amplify the lack of effectiveness.

This is the case for the Maintenance Management Systems at GHA and at DUR, which still do not operate satisfactorily; this is also the case for the traffic census system at GHA, which is notoriously deficient and provides unreliable data.

However, the measurement of road conditions is now working quite efficiently in all agencies, with the possible exception of DUR, which is now contracting out these activities. Within each one of the three agencies, road conditions are measured using a visual inspection method devised back in 1997 by consultants Wilbur Smith Associates, and supported by appropriate manuals and training. The method is now well on track and according to random checks performed by the evaluation team (see above), it seems reliable.

Road transport regulations

In terms of efficiency the results presented above speak for themselves: the system as it stands right now is not efficient. Even worse, it seems that the situation is deteriorating as can be seen from the comparative table below, the percentage of offending trucks being at its peak in the year 2000. Several reasons have been identified for this situation:

- ▲ The enforcement is difficult to perform because not all people recommended for prosecution for excessive axle weight actually go to court.
- ▲ In some cases guilty offenders are acquitted in court.
- ▲ In 1994, after an intensive campaign was launched, overweight vehicles were offloaded but the truckers did not come back to pick up their goods, leaving piles of materials and goods around the weighbridge station without proper security and shelter.
- ▲ Officials at the weighbridges can deliberately record higher weights than is the case in order to collect bribes despite the fact that they have been changed several times.

Table 25 Evolution of the number of offending trucks

Locations	Period	Station Weighed	No. of offenders	% offenders
OFANKOR (Accra-Kumasi Road)	1994-1995	4,984	49	0.98%
	1997	3,080	1,864	60.52%
	Feb. 2000	267	266	99.63%
ASUOYEBOAH (Kumasi-Sunyani Road)	1994-1995	8,199	350	4.27%
	1997	6,208	165	2.66%
	Feb. 2000	385	74	19.22%

Source: GHA Environment and Safety Division Memorandum on overloaded trucks

This lack of efficiency translates into a situation where there are more and more offending trucks.

4.4 Impact

Road transport regulations

The impact of the present situation is heavy on road maintenance activities. Whenever a pavement has been designed to carry a certain number of 10 ton axles (**N**) over a period of time (**P**), if 75% of the axles are overweight at, say for example 11 tons, the number of 10-ton axles increased by 10%; if the axle load becomes 12 tons, the same number will increase by 50%. In both cases the lifespan of the pavement decreases significantly, and the periodic maintenance interventions become more and more frequent. Instead of rehabilitating a road every 7 or 10 years, it may become 5 years, increasing sharply the overall costs of road maintenance in general.

4.5 Sustainability

Clearing the backlog

The sustainability of maintenance activities can be achieved if agencies responsible for implementation have enough funding, adequate human resources and when the systems in place are tuned and implemented properly by the entire staff involved. The final answers to this question depend on the results of other evaluation group investigations but, with regard to the road maintenance management systems, the conditions are satisfied for DFR, are still under implementation for GHA and, to the best of our knowledge, are still under consideration for DUR.

Road transport regulations

A certain number of steps have been taken in order to introduce a comprehensive Axle Load Enforcement Programme and it seems that if the system is well tuned and in full operation, it could remain so for the long term.

It should be noted that the Ghana Standards Board checks existing weighbridges at least twice a year and certifies these for use. The weighbridges are serviced and repaired by Avery Ghana Ltd as and when they are called by the GHA. There are proposals for a

ANNEX VI-TECHNICAL FOCUS

permanent agreement between Avery Ghana Ltd and the GHA in order to enable that company to carry out the maintenance of the weighing equipment on a sustainable basis.

5 LESSONS LEARNED

Axle Load Enforcement Programme

In order to improve the relevance and effectiveness of Axle Load Enforcement, several measures must be taken:

- ▲ Educating the trucking industry and freight companies.
- ▲ Introducing incentives for staff manning the stations, so they are less inclined to bribery.
- ▲ Request for private weighbridges at main loading locations such as harbours, quarries, cement factories, etc in order to make the industry more responsible and prevent them overloading trucks.
- ▲ Obligation for truckers when found overweight to either unload part of their cargo or immobilise the truck at the weighstation until further action, besides taking them to court.

Appendix A DFR MPBS sample excerpts

Performance Budgeting

The system defines the methodology by which a work programme, expressed in quantity of work per classified activity, is presented as a budget requirement to execute the work, activity by activity.

Work programmes and performance budgets are separate entities, but they are combined into a single presentation. When management is planning and identifying work loads, the financial implications thereby become immediately apparent.

This approach allows for the preparation of feasible work programmes within proper budgetary restraints and available resources. It facilitates the application of policy priorities by allowing the choice of different maintenance service levels (weighting factors) and different activities when preparing the work programmes.

There are three main **characteristics** that define performance budgeting and distinguish it from other maintenance systems:

- i) It classifies work and budgets in terms of standard work activities.
- ii) It develops standards of performance by expressing work and cost data in standardised measurable units.
- iii) It uses these standards of performance to guide financial allocation, work scheduling and performance evaluation.

Any performance budgeting system requires that the elements used in the preparation of the work programmes and budgets are clearly defined

Maintenance service levels are the quantities of work applied to the roads. Maintenance service levels are measured in terms of the frequency that work is done on the network.

To implement the performance budgeting system, the following planning inputs are required:

- ▲ The list of roads to be maintained is established and the extent of each road is clearly defined.
- ▲ The activities to carry out are clearly defined, and
- ▲ Expected production rates and unit costs be developed.

Work Activities

Performance budgeting is dependent on established production rates, unit cost of work and standard work methods, (activity specifications). These data must be up-dated annually to reflect changes in work methods or in average productivity actually achieved in the field. It is important that the work is executed by means of established and defined activities and that these are actually performed according to specified quality standards and standard work methods. Without standards of performance, wide variations in work methods will occur, and often result in work of inferior quality and unpredictable productivity.

Maintenance Feature Inventory

A maintenance work programme must be related to the actual road network that the authority executing the work programme is responsible for.

This is done by first identifying the list of roads to be maintained under the budget provision. Then conducting a road maintenance feature inventory by:

- ▲ Surveying the km of paved (bituminous surfaced) roads.
- ▲ Surveying the km of unpaved (earth and gravel surfaced) roads.
- ▲ Recording the number of culverts.
- ▲ Recording the number of bridges.

Although not as a part of the Maintenance Feature Inventory; the Climatic Zone, the ADT (traffic level) and the IRI (International Roughness Index), are together with the above mentioned four points the minimum key information required for operating the MPBS.

A maintenance feature is a distinct part of the road system on which one or more activities must be performed. A maintenance feature inventory is the counting and recording of the units of each maintenance feature. Maintenance feature inventories are provided and updated for each road in a *Road Area*. Subsequently, they are summarised into regional and national inventories or data lists. Annual updating is required to add inventories of new roads to the list of roads to be maintained.

The maintenance feature inventory is a critical component of the planning process. It is the basis for actual maintenance responsibility.

<u>Maintenance Features</u>	<u>Inventory Units</u>
Paved roads	Kilometres
Unpaved roads	Kilometres
Culverts	Numbers
Bridges	Number

Although the original proposal for roads to be included in the programme may come from the Regional Engineer, The DFR HQ management must clearly define the maintenance responsibility of each Regional Engineer. This is done in two steps:

- ▲ First, the criteria for roads to be included into the programme are defined.
- ▲ Second, a list of approved roads is prepared in each region that the work programme will be applied to funds available and national maintenance plans, according to the mentioned criteria.

If this is not done, planned levels of service will not be achieved.

Quantity Standards

Quantity standards are planning values used in estimating the amount of work planned for each activity for one year. This establishes the quantity of maintenance work to be carried out and the resources and finance required. Once the work programmes are finalised, quantity standards eventually define the level of maintenance to be provided.

Quantity standards are expressed in annual numbers of units of work per the applicable inventory unit of each activity (cu. m. per km, km graded per km, culverts cleaned per

ANNEX VI-TECHNICAL FOCUS

culvert etc.). When multiplied by the road network maintenance feature quantity for a particular activity they produce the planned work quantity to be accomplished under that activity.

QUANTITY STANDARD EXAMPLE:

On the 613.4 km maintainable roads in Eastern Region there are a total of 1,292 culverts. The maintenance feature quantity concerning culvert cleaning is therefore 1,292 and the need for cleaning of these culverts is as follows:

	Culverts Cleaned per year
250 culverts are self cleansing	250x0= 0
534 culverts need cleaning once a year	534x1= 534
508 culverts need cleaning twice a year	<u>508x2= 1,016</u>
Total number of culverts cleaned per year	1,550
Annual quantity standard is then: 1,550 /1,292 = 1.2 culv. cleaned per culv. per year	

In principle: [Maintenance feature quantity] x [annual quantity standard] = [annual work quantity]

1. Quantity standards do not reflect the needs of any specific road or group of roads. They represent the average needs of a system of roads, or a category of roads, which may have a variety of age and condition.
2. Quantity standards may vary by broad geographic zones - when justified by significant differences in conditions and work needs.
3. After work performance data has been reported and evaluated for a period of time, realistic bases are provided to adjust quantity standards to reflect actual conditions and needs.

The senior management at DFR HQ has the responsibility for developing and updating quantity standards.

During the MPBS Pilot Project, work was done and scheduled close to the actual physical requirement of each road. Interventions were recorded and later formed the basis for the quantity standard. The quantity standard reflects the near ideal input of funds and other resources at the time and is therefore called The Ideal Quantity Standard. Due to the exceptionally high level of backlog maintenance in the Eastern Region, additional modifications needed to be introduced to make it more suitable for normal requirement. This resulted in the Ideal Quantity Standard for Normal Requirement, which after further adjustments, are being used today.

In practice however, financial and other constraints must often be considered when preparing the work programme. Weighting factors have therefore been introduced as a simple and effective means of regulating the overall input for each individual road or group of roads.

ANNEX VI-TECHNICAL FOCUS

Work Programmes and Performance Budgets

Once preliminary quantity standards are established, up-dated standard unit costs are calculated and the road inventory is accomplished, the development of an annual work programme is in principle a simple arithmetic procedure.

For each work activity the quantity standard is multiplied by the appropriate units of road inventory, this establishes the total work quantity of each activity to be included in the work programme.

Activity	Weighted Annual Quantity Standard	Maintenance Feature Quantity	Annual Work Quantity
12F Patching gravel roads	4 cu. m gravel per km unpaved road	400 km	1,600 cu. m gravel placed
31F Grass cutting (hand)	3,000 sq. m grass cut per km ail roads	420 km	1,260,000 sq. m grass cut
41F Culvert cleaning	1.2 culverts cleaned per culvert	Total 800 culverts	960 culverts cleaned

Carrying out this exercise for all maintenance activities in principle leads to a complete work programme. Before this can be finalised, however, a cost estimate is prepared and compared to the expected budget allocation (see below for an example of cost estimate).

The cost calculations are carried out as shown in the example below:

Activity	Weighted Annual Work Qty	Std. Unit Cost (Cedis)	Total Annual Cost (Cedis)
12F Patching gravel roads	1,600 cu. M	15,800 per cu. m	10,880,000
31F Grass cutting (hand)	1,260,000 sq. m cut	18 per sq. m	8,820,000
41F Culvert cleaning	960 culverts cleaned	10,500 per culvert.	5,280,000

Usually, adjustments are needed to reflect budgets allocated for maintenance. The adjustments are normally handled by using weighting factors when preparing the Performance Budget.

At the regional level, it is possible to prepare the work programme or Performance Budget manually. However, in order to enable the Regional Engineer to work more expediently, a small spreadsheet program has been developed. Furthermore, at national level where the number of roads is high, a new MPBS Database Computer Program has therefore just been introduced to facilitate planning operations. Preparing the performance budget is a major duty of senior DFR HQ engineers, who at national level prescribe average weightings for the different regions. This defines levels of service applied to the network. In case the allocated budget is substantially below actual needs, the size of the MPBS road network may have to be reduced.

Crucial engineering decisions will also have to be taken at this stage by the Regional Engineer to produce the most effective regional work programme possible.

DFR: Routine Maintenance Contracts

The Routine Maintenance contract provides for:

SMC WORKS

- a) Desilting of culverts and drainage channels to ensure adequate drainage.
- b) Grass cutting.
- c) Ditch cleaning.
- d) Culvert cleaning.

LPC WORKS

- a) Grading of Gravel Surfaces.
- b) Patching of gravel *sections* without Rolling.
- c) Patching of Gravel sections with rolling.
- d) Ditch cleaning by Grader.

The list of tasks included in the MPBS is indicated in the table overleaf.

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ACF	ACTIVITY
	SURFACE MAINTENANCE
11F	Patching bitumen surface
12F	Patching gravel surface
13F	Filing of potholes and gullies
14F	Dragging
15F	Blading by towed grader
16F	Blading by motor grader
17F	Reshaping road surface (excl. Ditches)
18F	Sectional regravelling
19F	Compact road surface
	DRAINAGE MAINTENANCE
21F	Ditch cleaning (hand)
22F	Ditch cleaning (machine)
23F	Re-excavate ditches (hand)
24F	Re-excavate ditches (machine)
25F	Scour repair
26F	Repair / replace scour checks
27F	Cleaning culvert inlet / outlet ditches
29F	Other drainage maintenance
	ROADSIDE MAINTENANCE
31F	Grass cutting (hand)
32F	Tree and bush clearing
33F	Grubbing
39F	Other roadside maintenance
	STRUCTURE MAINTENANCE
41F	Culvert cleaning
42F	Culvert erosion protection
43F	Mass concrete culvert repairs
44F	Reinforced concrete culvert repairs
45F	Minor bridge repairs
49F	Other structure maintenance
	TRANSPORT OF MATERIALS
51F	Hauling of gravel (0-5km.)
52F	Overhaul of gravel
	MINOR REHABILITATION WORKS
61F	Local reshaping & raising of road
62F	Excavating new ditches (hand)
63F	Excavating new ditches (machine)
64F	Construction of culverts
69F	Other minor rehabilitation works

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1 INTRODUCTION

1.1 Contents of evaluation group

Within this evaluation group the main focus is the money-related issues. The basis of analysis is the financial flows, i.e. the annual budgets, the sources of financing of the expenditure programs, etc. From that basis, related issues such as the prioritisation system used to allocate funds are dealt with. The evaluation fields¹ that are covered in this group are the following:

<i>Evaluation fields</i>	<i>Sub-items</i>
(part of) clearing the backlog	▲ Actual funding, expenditure program.
cost recovery	▲ Road Fund performance. ▲ Source of balance maintenance funds.
(part of) investment priorities	▲ Investment criteria. ▲ Prioritisation methods.
(part of) private sector participation and financing	▲ Private sector targets achieved. ▲ Private financing/operating of roads.

The above mentioned subjects are presented in the following order (financial flows-cost recovery-investment priorities-private sector participation and financing) in this annex. This results in an integrated assessment of economic-financial matters including closely related issues, such as arrears.

1.2 Relation to other evaluation groups

The financial-economic group is closely related to the contract management group, at least in terms of financial flows and when it comes to the issue of arrears. Private sector participation, dealt with in financial terms in this section, comes back in other sections as well, such as the Technical group (organisation of the private sector-contractors) and the Contract Management group (contract management-contractors). In addition, there is a clear link between investment priorities and the use of Pavement Management Systems, as described in the Technical group.

¹ The evaluation fields correspond with the scope of work elements, as defined in the Terms of Reference.

2 OBJECTIVE OF EVALUATION GROUP

In this section the objectives of the relevant aspects covered in this evaluation group are presented. The objectives presented below are a combination of the text taken from the February 1996 policy letter and the scope of work as defined in the Terms of Reference. The two combined can be regarded as the starting point for this evaluation.

2.1 Financial flows: expenditures and funding

Although not an objective in itself, the road sector expenditure programme within HSIP for the period 1996-2000 is presented in this section. In chapter 3 the actual performance will be compared with this programme. In table 1 the reduced road sub-sector expenditure programme, together with the financing sources, is presented. More details can be found in appendix A.

Table 1 1996-2000 reduced road sub-sector expenditure programme (million US\$)

	Total	1996	1997	1998	1999	2000
Expenditure:						
Routine maintenance	112.5	19.4	21.5	23.5	24.0	24.1
Periodic maintenance	493.3	83.1	98.0	104.7	105.0	102.4
Rehabilitation	131.9	36.5	32.1	21.9	22.4	19.0
Reconstruction	586.0	125.6	134.2	142.5	84.2	90.5
Development budget	1,323.7	264.6	294.8	292.6	235.6	236.0
Recurrent budget (Admin)	82.8	12.5	13.3	14.3	15.3	17.4
Arrears	75.0	40.0	17.0	8.0	5.0	5.0
Total budget	1,471.5	317.1	325.1	314.9	255.9	258.4
Financing:						
External sources	741.0	144.0	182.0	172.0	123.0	120.0
Road Fund	376.2	45.6	59.5	74.4	90.3	106.4
Government budget	354.3	127.5	83.6	68.5	42.6	32.0

Source: Staff Appraisal Report, HSIP, April 1996.

Note: Ministry of Roads and Transport is not included in this overview.

2.2 Cost recovery

Policy letter

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 the Ghana Road Fund (GRF). To meet the high financial requirements of the road stabilisation programme, Government will gradually increase road user charges to ensure that all routine and periodic maintenance costs can be financed from the GRF. 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 they 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 Found will need to mobilise at least US\$45 million in 1996, US\$71 million in 1997,

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US\$99 million in 1998, US\$116 million in 1999 and US\$126 in 2000. This will be achieved by rationalising and increasing the GRF levy on fuel annually to achieve these stated targets. We expect this outlay of GRF 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 GRF 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. During the 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.

Terms of Reference

- ▲ Assess the performance of the GRF as the main source of funding for maintenance.
- ▲ Assess the extent to which the balance of maintenance funds has been forthcoming from external sources as well as from GoG's consolidated revenues.

HSIP: detailed program

The key elements of cost recovery and restructuring of the GRF have been clearly addressed in the HSIP SAR. The following objectives are mentioned:

- 1 Putting the administration and management of the GRF under the MRH Advisory Board on which road users are represented.
- 2 Increasing revenues paid into the GRF through road user charges.
- 3 Ensuring that the first charge on the GRF is for preservation of existing road assets (i.e. maintenance).
- 4 Managing the GRF in a pro-active manner using clear and consistent procedures for dividing funds between the various road agencies, disbursing funds, and auditing work financed through the GRF.

Ad 2)

The majority of GRF revenue is generated through fuel taxes. In 1996 the GoG raised the fuel levy from Cedis 18 to 60, equalling some US\$0.04. In order to further increase the revenue base of the GRF more fuel levy increases were agreed. An overview of fuel levies and consumption, together with foreseen revenues and expenditures is presented in table 2.

Table 2 Fuel: planned levies, consumption, revenues and expenditures.

Year	Fuel levy ² (US\$/l/100)	Consumption (billion l)	Revenue (million US\$)	Maintenance Expenditures (million US\$)	Recovery (%)
1996	4.00	1.14	46	102.5	44.9
1997	5.00	1.19	60	119.5	50.2
1998	6.00	1.24	74	128.2	57.7
1999	7.00	1.29	90	129.0	69.8
2000	8.00	1.33	106	126.5	83.8

Source: Staff Appraisal Report, HSIP, April 1996.

Note: The maintenance expenditures (sum of routine and periodic maintenance) are derived from the 1996-2000 reduced expenditure programme as presented in the SAR of the HSIP.

² The fuel levy is based on an average levy on petrol and diesel.

2.3 Investment priorities

Policy letter

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).

Terms of Reference

- ▲ Assess the investment criteria used and their implications for obtaining an equitable regional distribution of road access – including the Gateway Concept.
- ▲ Assess the methods used for prioritisation of maintenance and reconstruction works – to what extent are economic benefits used as a basis for prioritisation?

HSIP: detailed program

No concrete reference is made to setting investment priorities. In annex 4-1 (Economic Analysis of 1996-2000 Road Sector Expenditure Programme) the economic analysis of periodic maintenance, rehabilitation and reconstruction works agencies under HSIP for all three are presented.

2.4 Private sector participation and financing

Policy letter

The 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 in 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.

Terms of Reference

Assess the progress of the on-going plans for private sector involvement in investing and subsequent operation of selected roads.

3 OVERVIEW OF PERIOD 1996-2000

3.1 Financial flows: expenditures and funding

In this section an overview is presented of the financial flows. Both the expenditures and the sources of funding are graphically presented on the next pages.

Regarding the expenditures the following remarks could be made:





- ▲ A distinction is made between programmed-approved-released and actual expenditures:
 - programmed HSIP expenditures;
 - programmed RSEP expenditures (annually determined);
 - approved budget;
 - released budget;
 - achieved/actual expenditures.
- ▲ In addition the following distinction is made:
 - routine maintenance;
 - periodic maintenance and rehabilitation;
 - reconstruction and development.
- ▲ Expenditures on administration and arrears payments (unless included in the expenditures mentioned above) are not included in the overview.
- ▲ The expenditures are presented per year. For the year 2000 so far only the programmed HSIP expenditures are included.

Regarding the sources of funding the following remarks can be made:

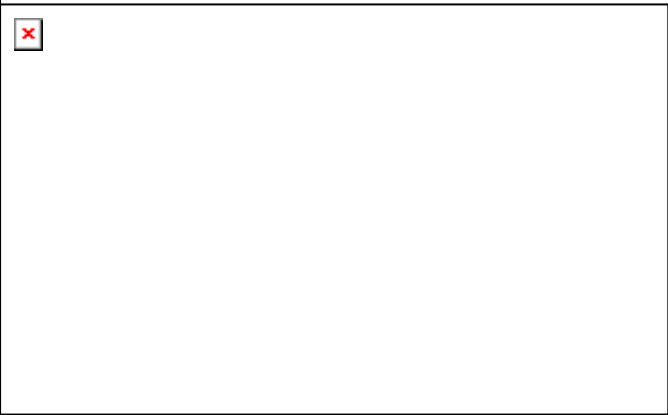
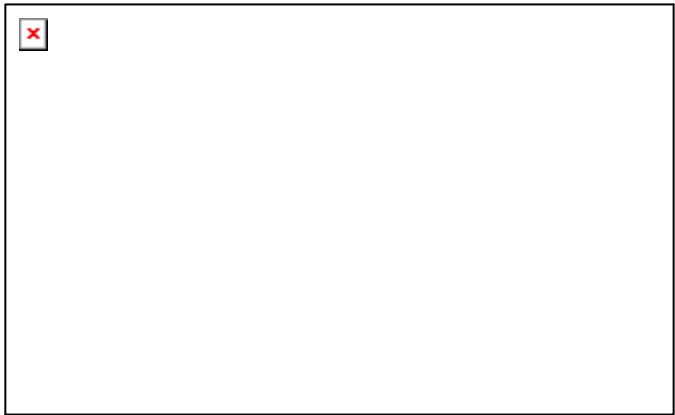
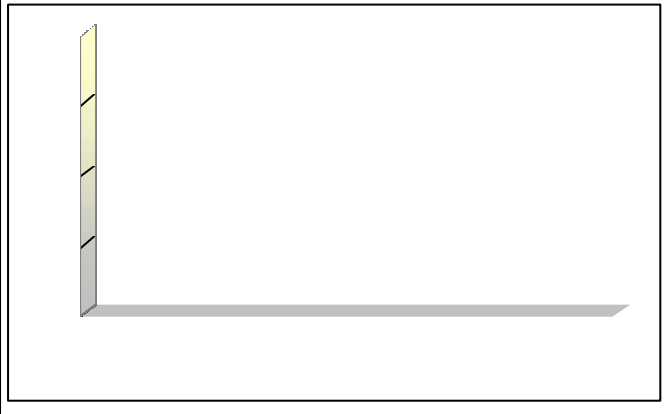

- ▲ Included in the tables are the funds released. In most cases this amount differs from the funds approved (see appendix A). Also the released funds are not per definition actually spent on road works for that given year. It is also used to pay outstanding bills from previous years.
- ▲ A distinction is made between funds made available by the GoG and the donors.
- ▲ The releases are presented per year. For the year 2000 no releases are included.

In appendix A, the underlying tables are presented. Sources used to compile the tables are the Review Reports (1997-1998-1999) and the annual reports of MRT and the agencies.





Ghana Highway Authority expenditure

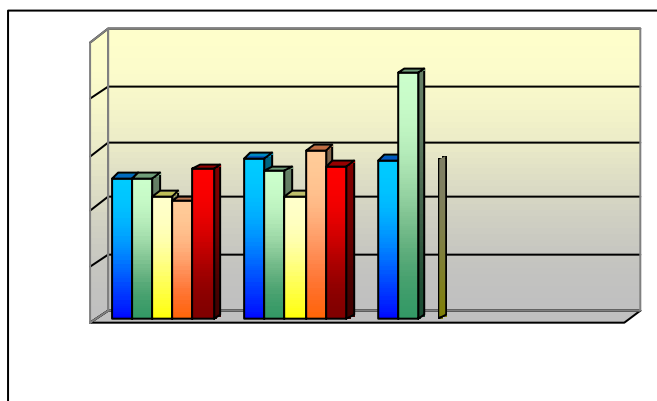
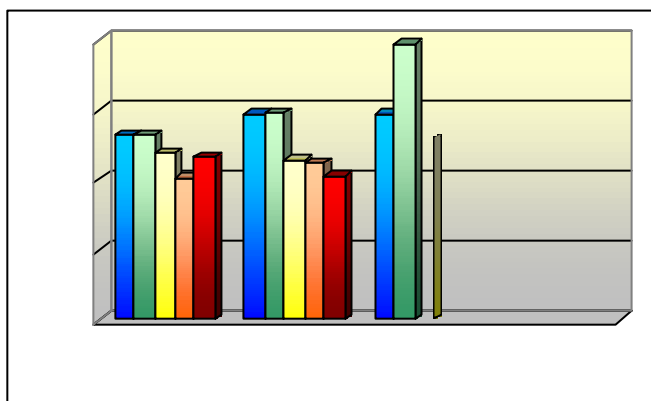
<p>Routine maintenance</p> 	<p>Periodic maintenance and rehabilitation</p> 
<p>Reconstruction and development</p> 	<p>Total</p> 
<p>Remarks:</p> <ul style="list-style-type: none"> ▲ Policy regarding priority allocation, e.g. maintenance-rehabilitation-(re)construction, is only partly met. Maintenance expenditures are short of programmed levels, while reconstruction and development expenditures exceed the programmed levels (partly the latter can be explained by arrears payments on outstanding debts from previous years). ▲ Total expenditure is more or less in line with programmed levels. ▲ A discrepancy exists between released levels and actual-achieved expenditures, most likely causing arrears in payments. ▲ Maintenance releases and expenditures are increasing 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. 	

Department of Feeder Roads expenditure

Routine maintenance	Periodic maintenance and rehabilitation
	
Reconstruction and development	Total
	
<p>Remarks:</p> <ul style="list-style-type: none"> ▲ Policy regarding priority allocation, e.g. maintenance-rehabilitation-(re)construction, is met. Maintenance expenditures are close to programmed levels, while reconstruction and development expenditures are limited. ▲ Total expenditure is somewhat below programmed levels, this is especially the case in 1999. ▲ No discrepancy exists between released levels and actual-achieved expenditures, consequently the amount of arrears are expected to be minimal within DFR. ▲ Maintenance releases and expenditures are increasing 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. 	

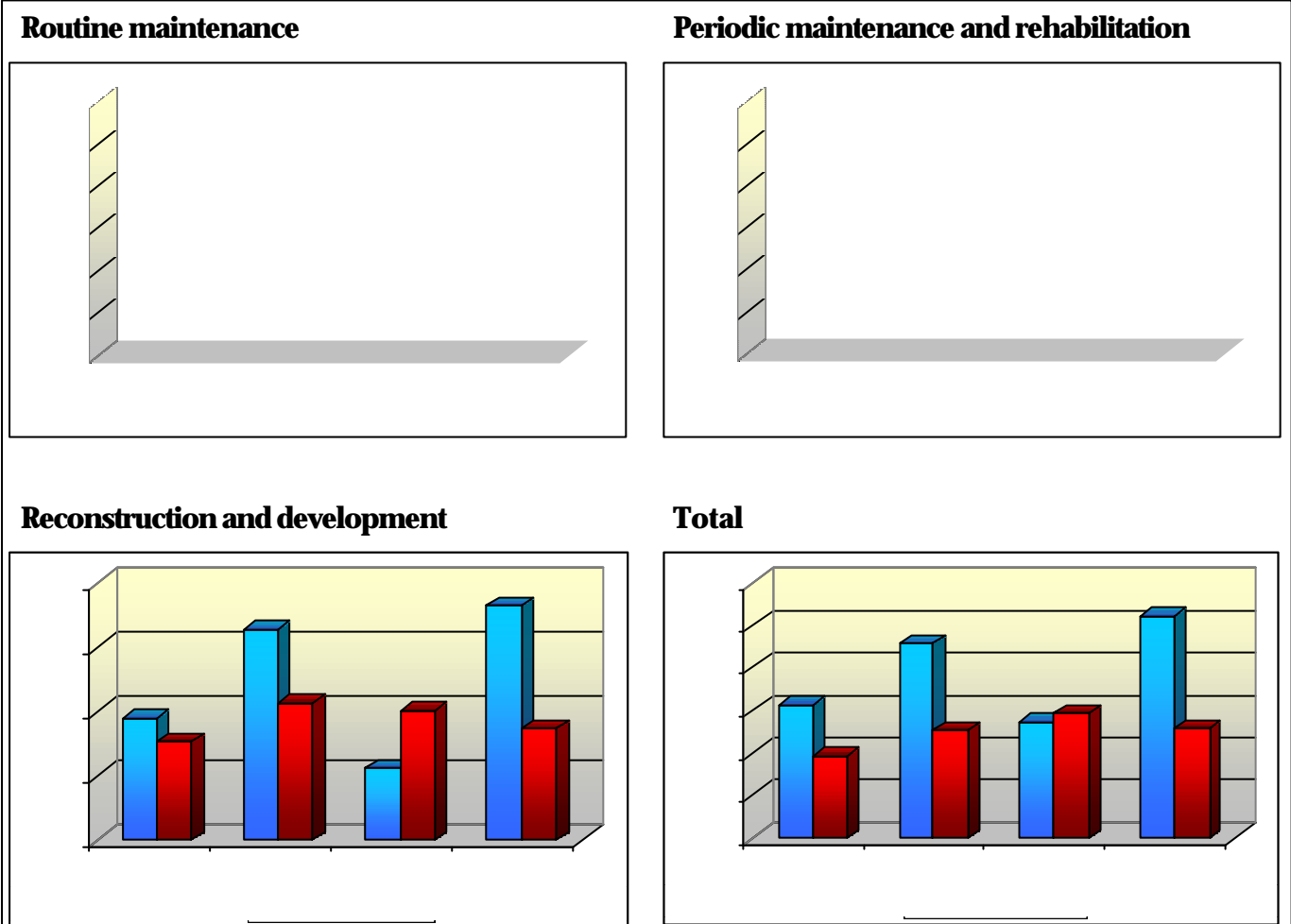
Department of Urban Roads expenditure

<p>Routine maintenance</p> 	<p>Periodic maintenance and rehabilitation</p> 
<p>Reconstruction and development</p> 	<p>Total</p> 
<p>Remarks:</p> <ul style="list-style-type: none"> ▲ Policy regarding priority allocation, e.g. maintenance-rehabilitation-(re)construction, is only partly met. On average, maintenance expenditures are close or even above to programmed levels, however reconstruction and development expenditures are in general well above programmed levels. Again, arrears payments on outstanding debts from previous years may have a distorting effect. ▲ Total expenditure is somewhat below programmed levels in the period 1996-1997. In the following period (1999-1999) expenditure exceeds programmed levels, especially in 1998. ▲ A large discrepancy exists between released levels and actual-achieved expenditures. Actual expenditure is on a structural higher level than the releases. ▲ Maintenance releases and expenditures are increasing in 1998 as a result of the functioning of the Ghana Road Fund (GRF). However, 1999 shows a fallback, especially in periodic maintenance and rehabilitation expenditures, caused by the fact that releases to the GRF were frozen in the 4th quarter. 	

Total expenditure**Routine maintenance****Periodic maintenance and rehabilitation****Reconstruction and development****Total****Remarks:**

- ▲ 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.

Ghana Highway Authority funds releases by source



Remarks:

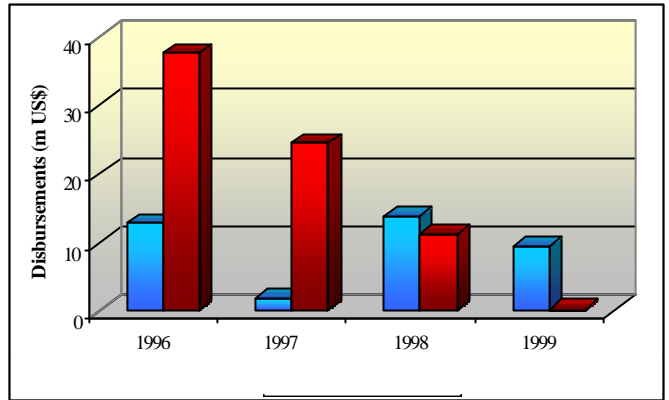
- ▲ Routine maintenance is fully funded and the majority of periodic maintenance and rehabilitation is funded by the GoG.
- ▲ High amounts of funds were released for reconstruction and development by the GoG in 1997 and 1999. 1998 was considerably lower. The pattern looks somewhat unstable. Releases made by donors are more stable.
- ▲ Routine maintenance releases strongly rose in 1998 but dropped in 1999. Expectations are that levels will grow again in 2000 if problems with GRF are solved.

Department of Feeder Roads funds releases by source

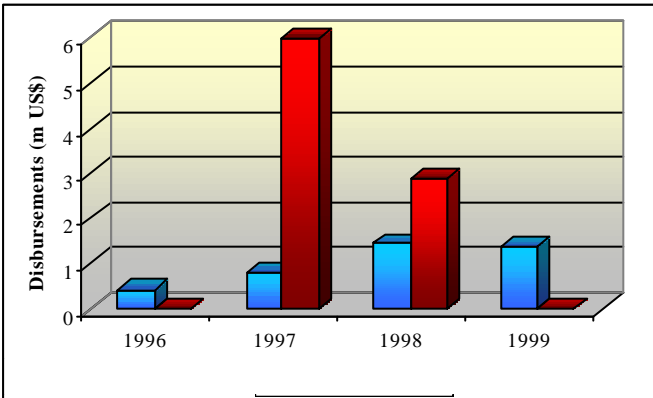
Routine maintenance



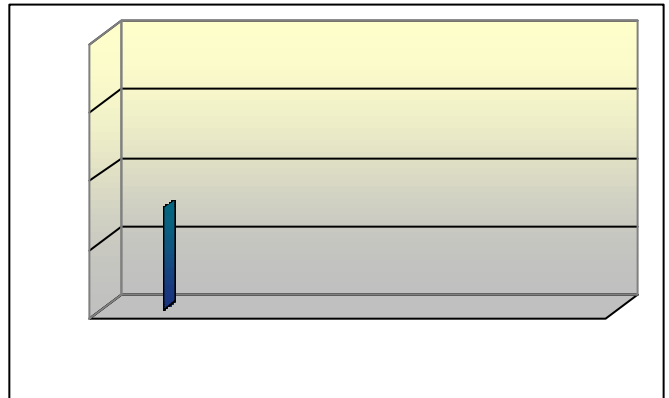
Periodic maintenance and rehabilitation



Reconstruction and development



Total

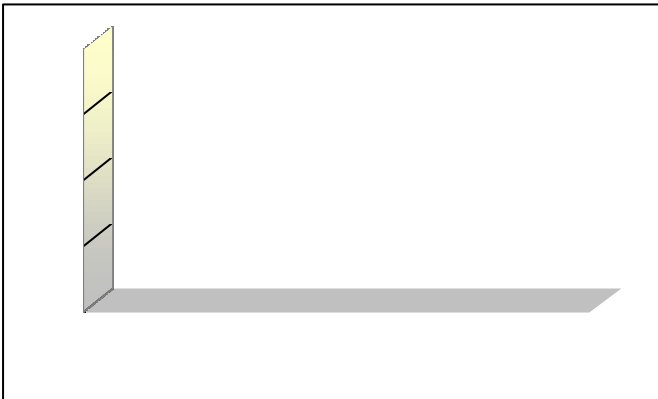


Remarks:

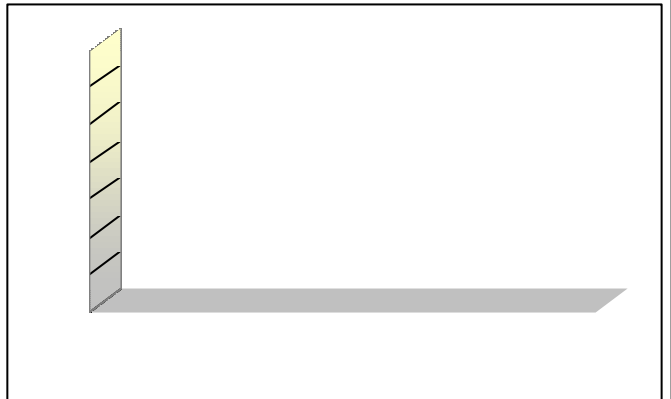
- ▲ Routine maintenance is fully funded by the GoG. The majority of periodic maintenance and rehabilitation is funded by donors, at least in the first two years. This picture changes after 1998 when the GRF becomes operational.
- ▲ Limited amounts of funds were released for reconstruction and development by the GoG. Releases made by donors are high in 1997 and moderate in 1998.
- ▲ Routine maintenance releases strongly rose in 1998 but slightly fell in 1999.
- ▲ Releases by donors have slowed down. It is striking that apparently no, or very limited, releases were made in 1999.

Department of Urban Roads funds releases by source

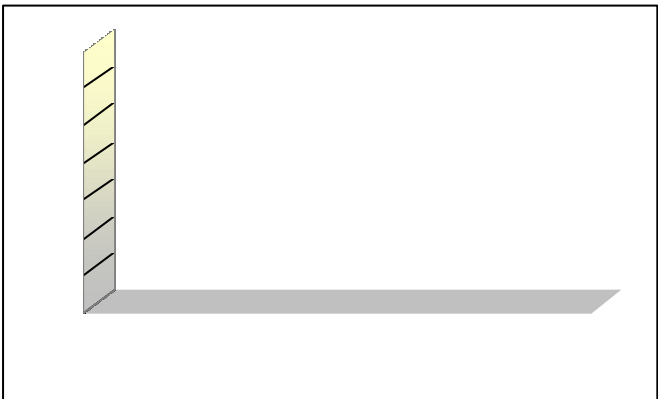
Routine maintenance



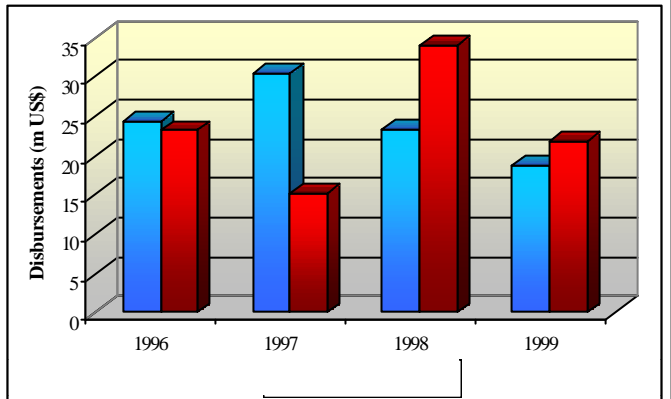
Periodic maintenance and rehabilitation



Reconstruction and development



Total

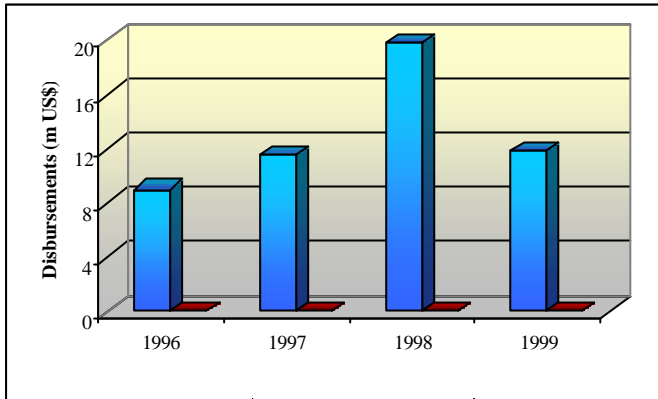


Remarks:

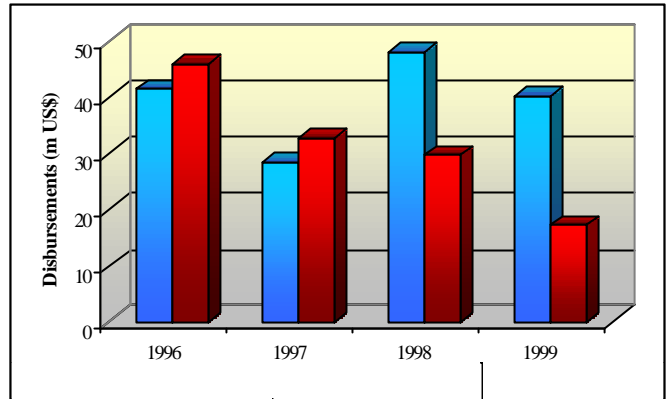
- ▲ Routine and periodic maintenance is fully funded by the GoG. Released levels increase in 1998 and drop in 1999.
- ▲ Limited amounts of funds were released for reconstruction and development by the GoG. Releases made by donors are considerable, however, the majority of these releases were part of the Interchange Development Project (Coface-AFD). Given the fact that this is a (commercial) loan the amounts disbursed should not be regarded as donor contributions. The financial overviews prepared by the GoG put these disbursements under the donor heading, so in terms of consistency it is kept this way.
- ▲ Releases by donors show a changing pattern.

Total funds releases by source

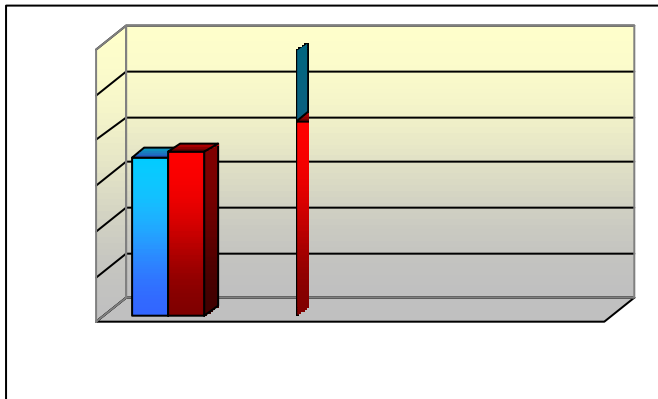
Routine maintenance



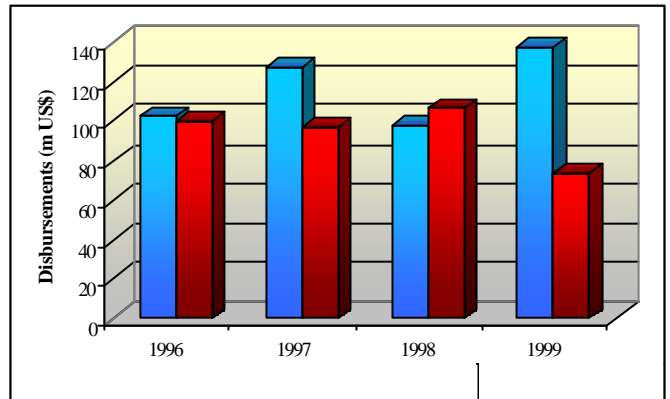
Periodic maintenance and rehabilitation



Reconstruction and development



Total



Remarks:

- ▲ 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.

3.2 Cost recovery

Background

After independence the road network in Ghana deteriorated rapidly. In order to stop this process, a first Road Fund was established in 1985 by the Provisional National Defence Council (PNDC). The aim was to secure funding for road maintenance through the following sources:

1. Fuel levy on petrol, kerosene and diesel.
2. Road, bridge and ferry tolls.
3. Vehicle inspection fees.

The fund was managed by the Minister of Finance, the Minister of Roads and Highways and Controller and Accountant General. GHA, DFR and DUR received funds on a 50:30:20 basis.

The fund was facing major problems. There were no clear responsibilities defined between MoF and MRH and other managing parties, there was no day-to-day management, there was no Oversight Board, there were delays in payment and leakage of funds, there was no accounting system or auditing and working disbursement procedures in place. Revenue received from the fund covered less than 35 percent of the total funding needs for road maintenance.

Audit reports revealed amongst others that '(1) certain vehicle examination and licensing fees have been paid to unauthorised accounts, (2) transfers from certain commercial banks have failed to appear in the bank statement and (3) payments made to the district treasuries and commercial banks have not been transmitted to the fund account'.

Towards the new Road Fund

As a result of above-mentioned fund performance there was limited public support for required increase in fuel levy rate and other user fees. Plans were made to reform the fund. In 1996 under the HSIP (1996-2000) it was agreed to restructure the fund so that it could operate according to sound accounting principles. The proposed key changes were:

1. To develop a comprehensive legal framework.
2. To establish a public-private Road Fund Board to oversee management.
3. To establish a secretariat to manage day-to-day operations of the fund according to sound commercial principles.

In addition to these changes it was also mentioned that the revenues paid into the GRF needed to be increased (see policy statement in previous section) and that the first charge on the GRF is the preservation of the existing road assets. In the initial stage the GRF should be used exclusively for routine and periodic maintenance of roads and road safety.

Vision of the Ghana Road Fund

The vision of the GRF is to ensure the regular maintenance of Ghana's road network by the provision of adequate and sustainable resources for the financing of road projects, through efficient and effective management of the fund, with the view to improving the quality of Ghana's road network.

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In the sections below the legal framework, the GRF Board and the GRF secretariat will be described.

Road Fund Act 1997, Act 536

The Road Fund Act 1997, Act 536, was enacted on 29th of August 1997 to establish a Fund to be known as the GRF to finance routine and periodic maintenance and rehabilitation of public roads; to provide for the management of the Fund and to provide for related matters. The Road Fund Act consists of three main sections: (I) establishment of the GRF, (II) management of the GRF and (III) financial provisions and administration. Under the first heading the objective and the financial resources are covered. Under the second heading the establishment and the responsibilities of the Board, the annual expenditure programme and the disbursement and withdrawal procedures are placed. Finally, under the third heading the accounts and audits, as well as the secretariat and the reporting are covered.

Road Fund Board

The Board consists of thirteen members and is private sector driven as eight members are from the private sector and five are from public sector. The private sector are nominees of road users³:

1. Association of Road Contractors (Mr Twumasi-Mensah).
2. Ghana Private Road Transport Union (Mr Tetteh Hago).
3. Ghana Private Enterprise Foundation (Mr Ebenezer M. Boye).
4. Ghana Road Haulage Association (Mr Robert K Moses).
5. Ghana Institute of Engineers (Mr Kwakwa).
6. Ghana Association of Farmers and Fishermen (Mr Odzeyem).

Two other private sector persons are nominated by the Minister:

7. Representative of the General Public (Mrs Anastasia).
8. Representative of the General Public (Mr Nortey).

The public sector members represent relevant Government Ministries:

9. Roads and Transport (Hon. Edward Salia).
10. Finance (Major M S Tara).
11. Mines and Energy (Mr Isaac K Mintah).
12. Local Government and Rural Development (Mr George Cann).
13. Accountant General (Mr Roland Achadi).

The chairman is the Minister of Roads and Transport. The Minister being the chair provides comfort to the Government. Also, this has an advantage – the Minister has access to the top persons in the government and can get work done quickly. This may change in future and the Chairman may come from the private sector.

³ Presented between brackets are the members as of October 1999.

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The main functions of the Board

The main functions are:

- ▲ Arrange for collection of funds and improve arrangements for allocation of revenues to reduce evasion and avoidance.
- ▲ Recommend level of fuel levy and other road user charges.
- ▲ Review annual budgets of road agencies.
- ▲ Establish certification procedures to ensure work is completed according to specification.
- ▲ Prepare and publish procedures for disbursement.

Road Fund secretariat

The Board is assisted in its functions by a secretariat. The GRF secretariat consists of a Director, Engineer, Accountant, Secretary and two drivers. The staff is paid competitive market rates. Currently, the staff of the secretariat is paid from the World Bank Highway Credit. After the end of HSIP (2000) the GRF needs to pay for the secretariat from its own income.

The secretariat implements the policies of the GRF Board and provides effective management of the GRF by undertaking the following:

- ▲ Collection and banking of all revenues.
- ▲ Disbursing funds to and monitoring the use of the funds by the road agencies.
- ▲ Providing sound and timely accounts and reports.
- ▲ Facilitating the financial and technical auditing of the GRF.

Sources of revenues

According to the Road Fund Act the GRF will receive its funds through following sources:

1. Such proportion of government levy on petrol, diesel and refined fuel oil as may be determined by the Cabinet with the approval of Parliament.
2. Bridge, ferry and road tolls collected by GHA.
3. Vehicle license and inspection fees.
4. International transit fees collected from foreign vehicles entering the country.
5. Such monies as the Minister responsible for finance in consultation with the Minister may determine with the approval of Parliament.

In Table 3 an overview is presented of the revenues from the various above-mentioned sources. In addition Figure 1 presents the build up of fuel levies and other revenue sources.

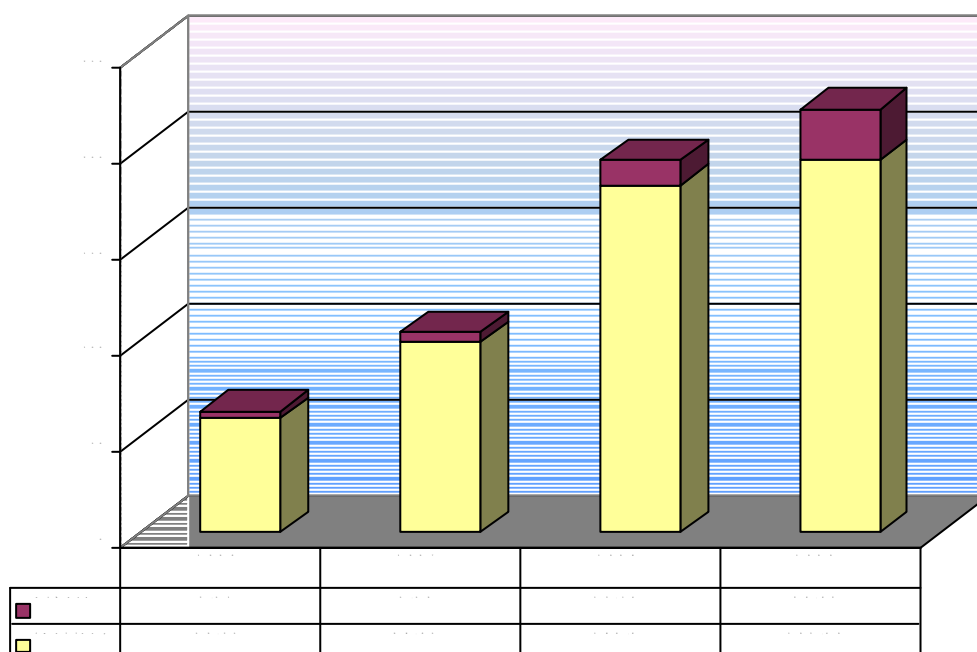
Table 3 GRF revenues from various sources (billion Cedis)

	1996	1997	1998	1999
Fuel levy	59.35	98.65	180.6	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.

Figure 1 GRF revenues (billion Cedis)

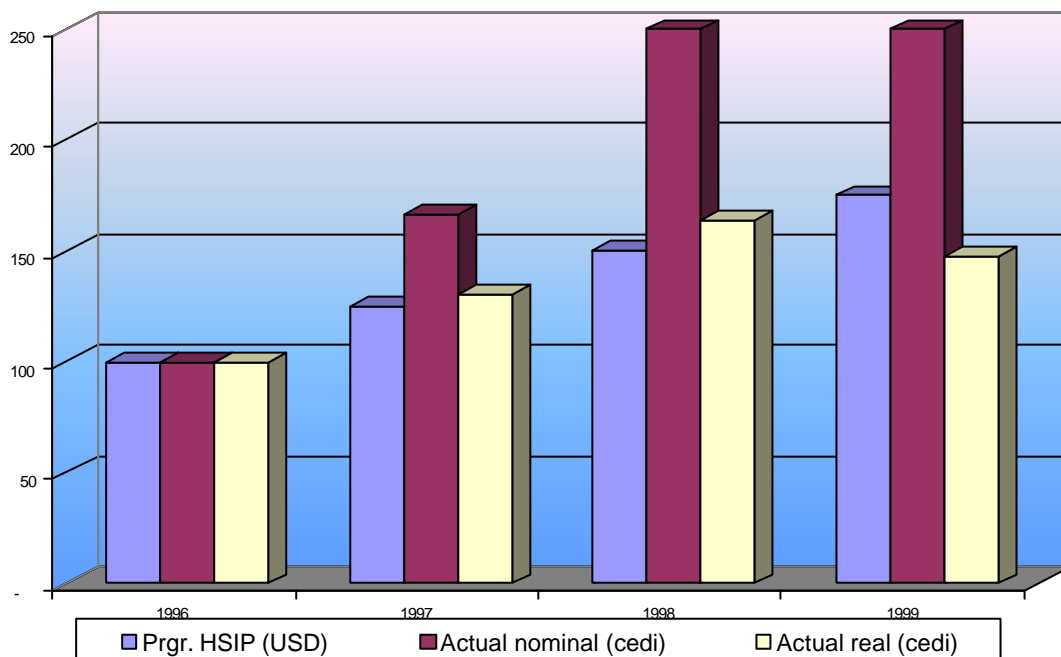
ANNEX VII-ECONOMIC-FINANCIAL FOCUS

Given the importance of fuel levies as a revenue-generating factor, additional analysis regarding the development of the level of fuel levies, the fuel consumption and the revenues from fuel is presented in this section.

Fuel levies

As indicated in table 3 fuel levies are the main source of revenues for the GRF. The GoG has agreed upon increasing the fuel levies levels in the HSIP period. The programmed increased fuel levies are presented in table 2 (see previous section). In figure 2 the indexed-programmed levels of fuel levies (in US\$) are compared with the actual nominal levels (in Cedis) and the actual real levels (in Cedis).

Figure 2 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 seems reluctant to further increase the fuel levies. Prices of fuel have steadily gone up recently, amongst others as a result of higher oil prices and the slide of the Cedi against the US\$. In table 4 an overview is presented of the development of fuel price at the pump, the fuel levies and the ratio between fuel levies and pump prices.

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Table 4 Development of fuel prices, levies and the levy/pump price ratio

	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 team analysis

Note:

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

Table 4 presents a development of increasing fuel prices and fuel levies. In most recent years the fuel price increases have been stronger than the fuel levy increases. The levy/pump price ratio has dropped consequently. The overall level of the levy/pump price ratio is relatively high compared to neighbouring countries⁴. This can be explained by the relatively low fuel prices in Ghana.

In table 5 an overview is presented of fuel levels in neighbouring countries. In addition, the fuel levels are related to the countries' GDP.

Table 5 Fuel prices per litre and fuel prices 'adjusted' for GDP in neighbouring countries (1998)

	<i>Super Gasoline (US\$ cents/litre)</i>	<i>Diesel (US\$ cents/litre)</i>	<i>GDP per capita (billion US\$ per million population)</i>	<i>Ratio super/GDP per capita</i>	<i>Ratio diesel/GDP per capita</i>
Benin	39	31	389.8	10.00	7.95
Burkina Faso	68	50	243.0	27.98	20.58
Cote d'Ivoire	74	45	758.6	9.75	5.93
Ghana	32	30	407.6	7.85	7.36
Guinea	68	56	514.3	13.22	10.89
Kenya	70	54	395.9	17.68	13.64
Mali	77	48	273.6	28.14	17.54
Mauritania	59	31	396.0	14.90	7.83
Niger	76	52	198.0	38.38	26.26
Nigeria	13	10	341.6	3.81	2.93
Senegal	71	48	533.3	13.31	9.00
Tanzania	63	57	246.1	25.60	23.16
Togo	42	47	340.9	12.32	13.79

Source: GTZ Fuel Prices and Taxation (May 1999) and World Bank (GDP/capita)

⁴ See levy and price at pump of diesel (figure 2) in African Road Funds-What Works and why, Ian Heggie and Anne Balcerac de Richecour (1995).

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Note:

- ▲ The fuel prices and the GDP per capita levels are 1998 figures. Recently fuel prices in Ghana were raised to 1,420 Cedis for one litre of petrol and 1,325 Cedis for one litre of diesel. Given an exchange rate of 4,100 Cedis per US\$ this is US\$0.35 and US\$0.32 for petrol and diesel respectively. The ratios super/GDP per capita and diesel/GDP per capita based on 2000 fuel prices would be 8.59 and 7.85 respectively⁵.

Based on table 5 it can be concluded that Ghana has modest fuel prices relatively to other African countries, both in nominal terms as in relation to GDP per capita. Table 5 indicates average ratios of 17.15 and 12.84 for super and diesel respectively. Ghana is well below these averages. In conclusion, although fuel prices have gone up recently and short-term action does not seem advisable, there seem to be room for further increase in fuel prices, especially on the medium and long-term.

Fuel consumption and revenues

In this section fuel revenues are presented. Combining the fuel levies with annual consumption gives insight in the annual revenues. In table 6 an overview is presented of levies, consumption and revenues.

Table 6 Fuel: actual levies, consumption, revenues

Year	Fuel levy ⁶ (US\$/l/100)	Consumption (billion litre)	Revenues (million US\$)
1996	4.00 (4.00)	1.03 (1.14)	41.2 (46)
1997	5.00 (5.00)	1.02 (1.19)	50.9 (60)
1998	6.00 (6.00)	1.15 (1.24)	69.1 (74)
1999	7.00 (7.00)	1.29 (1.29)	90.4 (90)

Source: Data provided by the GRF, February 2000

Notes:

- ▲ The programmed HSIP fuel levies, consumption, revenues and expenditures are presented between brackets.
- ▲ The fuel levies expressed in US\$ provide an unstable basis for calculations as the Cedi is losing its value against the US\$ at a rapid pace. The development of fuel levies in nominal and real terms as presented in figure 2 presents a clearer picture. For comparison reasons the actual fuel levies in US\$ are used. These figures are taken from Road Fund statistics⁷.

⁵ The 1998 GDP per capita figures are used.

⁶ Data are provided by the GRF. The fuel levy is based on an average levy on petrol and diesel. It should be noted that these figures differ from the development in fuel levies in Cedis as presented in figure 3. For the sake of comparison the actual fuel levies in USD are used.

⁷ Nevertheless, the levels are questionable. Based on June 2000 exchange rate of approximately 5,000 Cedis against the US\$, the fuel levy in 2000 of 230 Cedis would now be worth 4.6 US\$ cents).

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Although consumption is somewhat behind on schedule and the fuel levies expressed in US\$ are not increasing at the programmed rate (especially given the current 'fall' of the Cedi as elaborated in the footnote below), revenues are steadily increasing.

Allocation

The Road Fund Act defines the objective of the GRF as (1) to finance routine and periodic maintenance and rehabilitation of public roads in the country. (2) The GRF shall also be used to assist the Metropolitan, Municipal and District Assemblies in the exercise of their functions relevant to public roads under any enactment.

In addition, the Road Fund Act stipulated that the GRF will 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.
5. Such other relevant matters as may be determined by the Board.

In table 7 and figure 3 an overview is presented of the expenditures of the GRF to the various authorities in the period 1996-2000.

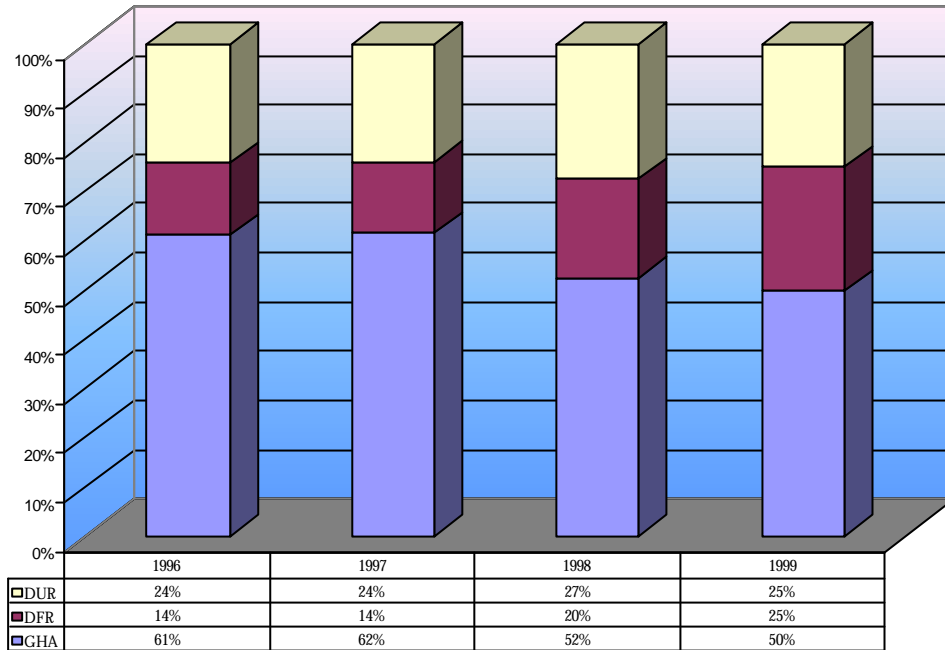
Table 7 Expenditures of GRF to authorities (billion Cedis)

	1996	1997	1998	1999
GHA	24.9	46.9	93.9	77.9
DFR	5.9	11	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	2.7	0.4	1.3
NRSC	0	0	0	0.3
Total	40.7	78.9	180	158.2

Source: GRF, 2000

Notes:

- ▲ From the time that the GRF became effective (1997) expenditures have steadily increased. 1998 showed a huge increase, more than doubling the previous year. In 1999 expenditures fell back because fourth quarter revenues were not made available to the GRF. This delay in payment is expected to be recovered in the year 2000, resulting in high expenditures in that year.
- ▲ The allocation to the authorities is constant for the period 1996-1997 (60-15-25) and for the period 1998-1999 (50-25-25) for respectively Ghana Highway Authority, Department of Feeder Roads, Department of Urban Roads. In figure 3 this allocation is graphically distributed.

Figure 3 Allocation of GRF resources to the road authorities

Disbursement procedures

The road agencies are required to submit roads programmes, which are reviewed by the secretariat and approved by the Board. The road agencies prepare the budgets and prioritise the roads according to their maintenance needs (see section on investment priorities). Money from the Road Fund is disbursed only for goods and services that form the Annual Expenditure Programme.

A new disbursement system was agreed with the road agencies in January 1998 for both routine and periodic maintenance. This system provides for the release of funds to the agencies to pay for certificates approved for periodic maintenance during the month. In the case of routine maintenance, a month's equivalent of the agencies' annual allocation has been paid to the agencies' head office for redistribution to the regional or district offices. In both cases, the agencies have to report back to the GRF on how they had applied the funds released to them.

Auditing

According to the Road Fund Act's section on accounts and audits, the following auditing related elements should be respected:

1. The Board shall keep books of accounts and proper records in relation to them and the books of account and records shall be in such form as the Auditor-General may approve.
2. The books of account of the GRF shall be audited by the Auditor-General or by an auditor appointed by him within 3 months after the end of each financial year.
3. An audit report on the GRF will specify whether in the opinion of the Auditor-General:
 - a. proper accounts have been kept in respect to the GRF;
 - b. the financial statement of the GRF is correct;

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- c. payments made from the GRF were in conformity with the disbursement procedures;
 - d. the accounting procedures and internal control procedures were accurate.
4. In addition to the annual audit, technical audits will be conducted on a selective basis by the Auditor-General or by an auditor appointed by the Auditor-General on the recommendation of the Board.

The secretariat performs financial and technical audits of the work done. Given the limited capacity of the secretariat a very thorough financial and technical audit is impossible. In addition, the accountancy firm Benning, Anang and Partners has since 1997 prepared a 'Financial statement and management report'.

3.3 Investment priorities

Introduction

In this section the two closely related issues of investment prioritisation and allocation mechanism 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 8.

Table 8 Investment priorities for road works

Activity	Funding	Investment criteria	Method for prioritisation	Allocation mechanism
Maintenance and rehabilitation	Ghana Road Fund (GRF) and donors (especially for rehabilitation)	GRF: technical, based on road conditions, traffic levels and road categories Donor: economic, based on VOC savings vs investment and maintenance costs	GRF: through technical maintenance needs are determined. This, together with a regional/political veto, is used for prioritisation. Donor: Take GoG suggested priority as basis, in addition often apply their own criteria (e.g. poverty-gender impact)	GRF: programmes prepared by road agencies and funding approved by GRF Donor: Agencies lobby for projects, projects selected and approved by donors
Reconstruction and development	Consolidated Fund and donors	CF: no objective investment criteria. Donor: 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 often apply their own criteria (e.g. poverty-gender impact)	CF: political. Donor: Agencies lobby for projects, projects selected and approved by donors

Investment criteria

The above distinction between maintenance and rehabilitation on the one hand and reconstruction and development on the other hand is followed in the description below.

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Maintenance and rehabilitation

The investment criteria for maintenance and rehabilitation are generally to a large extent based on technical grounds. The approach differs to some extent per organisation. In GHA investment criteria on maintenance for trunk roads are based on road conditions, traffic and a road categorisation. These criteria are input for a Pavement Management System (PMS). Details on the functioning of the PMS are described in annex VII. Although technical by nature there is an economic linkage in the sense that traffic levels and the road categories are indicators for economic development. The investment criteria are robust and simple and are frequently used world-wide.

DFR has got a slightly different system. In NFRRRMP the producer surplus approach is followed based on reduced transport costs and increases in value added due to additional production. By doing so, the potential benefits of improved production are taken into consideration as well, creating a wider economic basis. Furthermore, DFID is in the process of developing a new prioritisation system for rehabilitation (see next section) in which elements are included such as agriculture and marketing, informal public transport and the women trader and ethnicity and cycling behaviour. Clearly, this is shifting away from the purely technical approach. The investment priorities at DUR are technically oriented. Maintenance needs do not limit its focus on pavement but also need to focus on additional issues, such as traffic lights.

Besides the technical criteria there is also a regional-political element involved in setting investment priorities. More on this subject can be found in the section on prioritisation.

Reconstruction and development

For reconstruction and development there are no clear objective investment criteria set. There is a no mechanism in place through which national policy, such as agricultural development or import-export promotion (e.g. Gateway Policy) is translated into investment needs. A master plan that would take this aspect into consideration would be beneficial. At the start of HSIP there was no master plan. However, during the HSIP period the following developments have taken place:

- ▲ The EC has as preparation for TRIP-3 for the south-eastern region developed a zone study in which HDM is used as a method to prioritise the activities. The World Bank has followed up by dividing the remainder of the country in three additional zones. Also for these zones HDM is used for setting investment priorities. A side effect of this zoned approach is that the regional distribution can be more easily facilitated.
- ▲ Japan is developing a master plan for trunk roads. There are no clear economic criteria used in this master plan. Instead, current population and traffic levels, combined with a growth factor are used to determine future investment needs.

In conclusion it can be said that it is a positive development that master planning activities are now being prepared. At the same time, the master plans are still missing a top-down approach, from national policy through investment criteria to road interventions.

Role of the donors

Donors have their own set of criteria that are not necessarily the same as the criteria of the GoG. As an illustration, table 9 presents Danida's main economic criteria for supporting rehabilitation of different road types⁸.

⁸ Danida, Transport Infrastructure, Danida Sector Policies 1999.

Table 9 Danida's economic criteria for supporting rehabilitation

Type of roads	Main economic criteria
Main roads	Economic viability and maintenance financing plan available and realistic
Regional/district road	Economic viability, socio-economic viability and maintenance plan available and realistic
Feeder roads, tracks and paths	Socio-economic viability and people's willingness to participate and provide labour or cash

Each potential donor project is subject to a feasibility study. In table 10 an overview is presented of some characteristics of feasibility studies done on behalf of donors within the HSIP period. Table 10 indicates that the majority of the feasibility studies are based on HDM. However, the input differs per feasibility study, making the outcomes of the study rather subjective. On the benefit side, VOCs are included in all studies. In addition a wide variety of additional benefits are included, such as time savings, maintenance costs savings, accidents costs savings and economic development benefits (e.g. increased agricultural output and production). On the cost side there is a strong doubt to whether comparable unit cost rates are used for construction and maintenance. Also, cost of capital differs per study (10-12-15 percent). In conclusion it can be said that there is not a common approach among donors towards assessing the feasibility of the projects.

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Table 10 Characteristics of a selection of feasibility studies

Consultant	Fund	Project	HDM-model/VOC - source	Safety/enviroment	Socio-economic benefits	Accident costs	Cost of capital	ERR	Benefits
NEI	NL	Gyata Zongo-Prang-Yeji	Yes, supplier and data from Tanzania	Yes, qualitative	Yes, qualitative	No, qualitative	12%	-0.9	VOC/VOT-savings
SAPS	Japan	Anwiankwanta-Yamoransa	Yes, GHA Planning division	Yes, qualitative	no	No, qualitative	15%	24 and 17.5	VOC-savings, maintenance cost savings, crew time savings, passenger time savings
Renardet	KFW, Germany	Tema-Aflao	Yes, 1997 Brazilian data	no	no	no	15%	>30	VOC-savings, maintenance cost savings
Wilbur Smith	EU	South-west Ghana	Yes, consultant's estimates	Yes, environmental	no	no	15%	289< >15	VOC/VOT and maintenance cost savings
Ramboll/Comptran	Danida, Denmark	Berekum-Sampa, Tamale-Makango, Tamal townships	Yes, GHA	no	yes	yes	15%	-	VOC-Savings, maintenance cost-savings, time-savings, accident cost-savings and economic development benefits
United Consultancy LTD	Gov. of Ghana	Selected feeder roads; Bekwai, Cape coast, Sunyani	?	no	yes	No	10%	12 OUT OF 30 < 10%, OTHER 18 >10% OF WHICH 8 >50%	VOC-savings and increased agricultural output
United Consultancy LTD	Gov. of Ghana	2 nd TRP Northern region pilot infrastructure scheme	yes	no	-	no	10%	22	VOC-savings, increased agricultural output
Ghanexim	IDA/ USAID/ Danida/ OPEC/ Japan	Ayerede-Donkronkwanta, Dalive-Amerdome	?	no	yes	no	10%	10<>75	Transport costs/ton, increase in production

Method for prioritisation

Also regarding prioritisation the distinction between maintenance and rehabilitation on the one hand and reconstruction and development on the other can be made. The GoG has clearly set its priorities in the order maintenance-rehabilitation-upgrading and finally (re)construction. As can be seen in the boxes in the section on financial flows: expenditures and funding (section 3.1) this priority was only partly or not followed during the HSIP period. Maintenance and (to some extent) rehabilitation have not fully received the programmed expenditure levels while reconstruction and development have received more than the programmed levels (partly as a result of arrears payments).

Maintenance and rehabilitation

At the start of HSIP 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 and a 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 annex VII), 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 on a central level, the decentral level (regions-municipalities) is given some 'room to manoeuvre' and makes adjustments to the proposed list of projects (see section allocation mechanism).

The prioritisation system is organised on a bottom-up basis (see allocation mechanism). 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 needs. The Evaluation Team suggests that one of the criteria for a prioritisation system to be developed is to keep the system simple.

A prioritisation issue that is especially relevant for feeder roads is the limited VOC savings benefits that can be calculated on low volume roads. Many of the benefits can not be easily quantified. Currently a discussion is taking place on a new prioritisation system for feeder roads. More information on this issue can be found below (under the heading role of donors).

Reconstruction and development

Whereas the priority setting of maintenance and (to certain extent) rehabilitation is a bottom-up technical process, the prioritisation process of reconstruction and development should follow a top-down approach and should be based on nationally defined higher-level policies (e.g. an equitable regional distribution, to stimulate the export position of Ghana, to promote foreign investment, etc.). A master plan would be the most appropriate place for such a prioritisation. The previous section indicates that efforts are made to develop an integrated master plan approach, however, the investment criteria used are not derived from a wider national objective.

Role of donors

Donors do not use a complicated prioritisation system. Agencies propose projects for donor financing. If interested, the donor commissions a feasibility study and based on the outcome the donor finances the project. Donors do prioritise between agencies. There is a tendency among donors to be more attracted to feeder road projects, as typical

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donor criteria such as poverty reduction and gender impact are more easily met. Based on the same reasoning urban road projects receive less donor attention.

Recently, the DFID intervention “Support to Rural Feeder Roads” (Project Submission Report 23 March 1999) is elaborating prioritisation methods. Conventional methods to estimate economic benefits through either consumer or producer surplus approaches are rejected. The results of current research (initiatives by World Bank, more specifically Transport Research Laboratory in Ghana), featuring “... the relationship between improved accessibility and agriculture and marketing, informal public transport and the women trader and ethnicity and cycling behaviour...” are proposed for prioritising feeder road rehabilitation. The system, working along two lines (i) a formal “model” of quantifiable indicators and (2) participation of local population using “stated preference” techniques, indeed complies with criteria of rural poverty alleviation policies. However, in terms of the requirement of a straight tool for supporting prioritisation decisions, to be applied systematically by DFR throughout the feeder road network, the Evaluation Team doubts whether the proposed system is practical and cost efficient.

Allocation mechanism

The allocation mechanism can be approached on three levels: allocation to MRT- allocation to the agencies and allocation within the agencies All three levels are closely interrelated and start with the preparation of annual budgets. This approach follows a set of GoG procedures similar to those of other countries. A provisional estimate (of around 25% of expected budget) is agreed and allocated around the beginning of the year. Budgets are prepared and negotiated annually before the end of the current calendar year (based on an estimate by MRT of likely development). They are presented to Parliament for approval between January and February. This is notified in a “general memorandum” detailing the agreed budget for the year. This is broken down into 4 sections:

- ▲ *personal emoluments* budget is generally calculated on current in-post values plus credit for increments in currently in-post staff, and not establishment.
- ▲ *administrative expenses* budget, as well as including stationery, vehicle maintenance, fuel, water, electricity etc. also includes provision for training.
- ▲ *Service*: the maintenance activities of the MRT on roads, bridges etc.
- ▲ *Investment*: the amount to be spent on new road development.

Resources cannot be freely shifted between budget headings (only on application to MRT who themselves need the permission of the Ministry of Finance).

Maintenance and rehabilitation

Maintenance is financed through the GRF. The road agencies determine their annual maintenance budget. This process involves quite a number of steps and starts with the collection of data (traffic and road conditions) on a decentral (regional-local) level. These data are input for a technical assessment at the central level (headquarters) of the road agencies, resulting in a list of projects. This list is sent to the decentral level for two purposes:

- ▲ Quality control, checking for mistakes, inconsistencies, etc.
- ▲ Adjustments in priorities: there is room on decentral level to adjust the list of projects according to regional-local needs in co-operation with local minister.

The list of selected projects is sent back to the central level where some of the projects can be removed and a preliminary maintenance budget is prepared which is supposed to

fit into the resources allocated by the GRF. Again, the list of projects is sent back to the decentral level where a project level analysis is carried out to refine the cost estimate. This is done in close co-operation with headquarters. The final budget, which is usually ready around August, is submitted for approval to Parliament. During the process, some projects can be selected for external financing. Finally, the approved list of projects is sent to the regions where the preparation of the tendering process takes place with contract advertisement at regional tender Boards.

Reconstruction and development

Currently, with very limited Consolidate Fund resources available, reconstruction and development work is made via requests to donors. Payment is made directly from the donor to the contractor. The Medium Term Expenditure Framework is a 3-year rolling budgetary framework (first year fixed) which attempts to set short term planning expenditure ceilings linked to development. This is a fairly newly instituted system and should give the opportunity for more consistency between strategic, operational and in-year objectives.

3.4 Private sector participation and financing

In this section two issues are dealt with:

- ▲ Private sector participation: to what extent have the private sector targets been achieved?
- ▲ Private sector financing: to what extent has the private sector been involved in road infrastructure financing?

Private sector participation

The GoG has defined the policy target of having 100 percent of all major roadwork and 90 percent of all maintenance work carried out by the private sector. The rationale behind this is to ensure cost-effective and efficient implementation of the road sub-sector programme.

In the beginning of the HSIP period a strong effort was made to train the local contractors. Therefore training programmes, seminars were organised at various levels for national contractors by MRT and the road agencies. In addition dialogue was stimulated between the road agencies and the contractors.

In the 1999 Review Report it was mentioned that 95 percent of the road works are executed by the private sector. MRT and the road agencies regularly engage consultants for studies, engineering designs and work supervision. Local consultants also associate with foreign firms to carry out consultancy services on behalf of MRT.

Local contractors through national competitive bidding mainly execute routine and periodic maintenance. Major works are rewarded through international competitive bidding and foreign firms participate and are all executed by the private sector.

The consequence of outsourcing work to the private sector is that the road agencies could reduce their staff accordingly in line with the reduced workload. Although some of the agencies' staff may have been transferred to the private sector, there is still a vast

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amount of personnel previously involved in force account maintenance employed at the road agencies, notably at GHA.

Private sector financing

In the 1996 policy letter GoG it is stated that the shortage of public revenues limits the ability to meet road sector's requirements. Therefore, it is intended to bring in the private sector to invest in, and operate, selected roads under concession agreements. A proposed Roads & Highways Act would provide the enabling legislation to permit the GoG to do this.

The GoG has created the basic legislation for the private sector. Furthermore, the GoG has identified several Build, Operate and Transfer (BOT) and Maintain, Operate and Transfer (MOT) schemes. In addition a brochure has been developed to attract interested foreign parties for financing. These efforts have so far not resulted in any private sector financing activities.

4 EVALUATION

4.1 Relevance

Cost recovery

The subject of relevance will be looked at from two angles, first from the Government of Ghana perspective and second from the donor perspective.

According to Vision 2020 the long-term objective of the Government of Ghana is 'to develop a co-ordinated network of roads to serve as arteries and veins of the economy of Ghana... The principle objective in the immediate future is to clear the large backlog of maintenance work on the road network and put management and financing of road maintenance on a sustainable long-term basis.' The Road Fund philosophy of providing a sufficient and reliable flow of financial resources fits perfectly into the above-stated GoG vision.

In general, donor contribution to the road sub-sector focuses on development works or in some cases technical assistance. Maintenance works are considered the responsibility of the recipient country. However, in some cases lack of financial discipline in allocating resources for maintenance results in under-spending on maintenance and growing backlog. Newly constructed, reconstructed or rehabilitated roads quickly deteriorate resulting in renewed needs for rehabilitation that come with high costs. Road Funds can provide a safeguard against this process by providing sufficient funds on a frequent basis. Consequently, the main donor attitude towards a Road Fund is positive. The World Bank has emphasised the importance of a Road Fund and has established the concept of a 'second generation' Road Fund, based on charging road users directly by putting roads on a fee-for-service basis, depositing the proceeds into an off-budget account and setting up a Road Fund Board with public and private sector representatives. The GRF is an example case of such a 'second generation' Road Fund and generally fits the donors' policy, in fact within HSIP the World Bank has stressed the importance of restructuring the Road Fund.

Investment priorities

Creating a prioritisation mechanism through which the national policy objectives can be realised is a very relevant issue. Currently efforts are being made to develop a trunk road master plan and to set up integrated-zoned studies, potentially allowing for a translation of national aims into road interventions. At this stage, such a translation is still premature.

In prioritising their activities, donors tend to favour feeder road projects through which poverty and gender-related objectives can be met, issues traditionally high on the donors' list. In a to be developed prioritisation system for feeder roads, these socio-economic criteria are included.

Private sector participation and financing

Private sector participation and financing both fit into the GoG's policy as the GoG has adopted the vision to improve the implementation of the road programme through private sector participation. At the same time, the GoG is promoting private financing in

road infrastructure and is trying to create a favourable environment to attract foreign investment.

In general, donors have a positive attitude towards increasing the private sector involvement in the implementation of the road programme. Donors may be somewhat sceptical towards private sector financing, as it is doubtful whether the basic conditions for private sector financing are fully in place.

4.2 Effectiveness

Cost recovery

In order to assess the effectiveness in the period 1996-2000 one has to take the GRF objectives in 1996 as a starting point. The 1996 restructuring-plan was based on:

- ▲ Putting the administration and management of the GRF in place.
- ▲ Increasing the revenues paid into the GRF through road user charges.
- ▲ Ensuring the priority spending (maintenance).
- ▲ Managing the GRF in a pro-active manner.

Administration and management

The Board of the GRF has been put in place and the first sitting took place on 31st of January 1997 (6 months prior to the Road Fund Act becoming effective). Meetings have taken place on a regular basis (first monthly, later on a bi-monthly basis).

The GRF secretariat is also put in place and is functioning fully in accordance with the Road Fund Act.

Increasing the revenues paid into the GRF

Fuel levies

The SAR of the HSIP strongly focuses on to increasing the revenue-basis of the GRF by increasing fuel levies. According to the SAR, the GoG has agreed to raise the level incrementally in real terms by one US\$ cent/litre per year up to a level of 9.5 US\$ cents/litre in 2002⁹.

Based on figure 2 it can be concluded that actual fuel levies are in line with programmed levels. In all years except 1999 actual fuel levies increase was above the programmed HSIP increase. In terms of US\$ the fuel levies fall short of programmed levels as a result of the devaluation of the Cedi against the US\$.

Fuel revenues

Combining the fuel levies with annual fuel consumption gives insight in the annual revenues. Table 6 in the previous section provides an overview of fuel levies, consumption and revenues. Based on table 6 it can be concluded that fuel consumption was behind schedule in the period 1996-1998. For 1999-2000 consumption is in line with programmed consumption. As a result revenues are behind programmed levels in 1996-1998 and are back on track in 1999. For the year 2000 revenues are expected to fall back due to absence of increase in fuel levies.

⁹ Starting from a level of 4 US cents in 1996.

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Non-fuel revenues

Besides the increased revenues from fuel levies, the GRF has made a strong attempt to broaden its revenue basis. Figure 1 indicates the growing share of non-fuel revenues. In 1999 12 percent of GRF revenues were non-fuel related. The increased revenues from road user fees (since 1998) and vehicle registration fees are contributing factors. In 2000 increased revenues from tolls are expected through the privatisation of toll collection. The SAR does not set any quantified targets for the non-fuel revenues. In terms of effectiveness it is considered a good development to broaden the revenue-basis. Besides, the introduction of a road user fee enables a more direct charging system, based on vehicle weight or axle loads. Fuel levy does not allow for this differentiation. In terms of efficiency there is a case for keeping the charging system simple and focus on fuel levies (see section efficiency).

Ensuring the priority spending (maintenance)

The Road Fund has spent almost 100 percent of its revenues on maintenance activities. Table 7 presents an overview of the allocation of the GRF. Starting in 1997 some money was transferred to MRT and from 1999 on some money was spent on road safety. These however are only small amounts. The majority of the funds are transferred to GHA, DFR and DUR to finance their routine and periodic maintenance activities.

Looking at Ghana on an aggregate level, including resources of the consolidated fund and donor resources shows a different picture. Maintenance targets have not been met.

Managing the GRF in a pro-active manner

Charging system

In Ghana a clear arrangement is in place to separate the fuel levy from general taxes. The fuel levy is collected by Ghana National Petroleum Company and deposited directly into the road fund account at the Bank of Ghana. Licensing and examination fees are collected by MRT. Tolls for roads, bridges and ferries are collected by GHA. The agencies are not paid any collection fees.

During the fourth quarter of 1999 the GRF's bank account was 'frozen', and no funds released. As a result the GRF was unable to disburse funds to the agencies. Meanwhile, the situation has been resolved and funds are becoming available again, although there are still arrears in payments. In order to get a more thorough grip on the funds, a discussion started on starting an account at a commercial bank. Finally, it was decided at a GRF Board meeting to keep the account at the Bank of Ghana with guarantees from the Bank of Ghana to avoid interruptions of releases. In addition, the GRF now has a statutory status.

Disbursement procedures

The disbursement procedure is clear. As previously described, a routine maintenance budget is provided on a monthly basis and for periodic maintenance a certificate system is in place. A more or less fixed percentage seems to be in place regarding the allocation to the three road agencies. For the moment, given the lack of sufficient funds, the system is acceptable. However, on the long run, when sufficient funds for maintenance become available, a system based on actual maintenance needs would be preferable.

Auditing

Auditing procedures are in place. The GRF secretariat is undertaking technical and financial audits on maintenance projects (to the extent possible given the size of the staff

- one accountant and one engineer). The GRF performance is annually audited by an independent auditor, the firm Benning, Anang¹⁰ and partners.

Investment priorities

Investment criteria for maintenance projects are mainly based on technical grounds, more specifically on traffic levels, road conditions and road categorisation. Results are communicated with and possibly adjusted through regional-local participation, making the process less transparent but at the same time creating more support for the maintenance programme. For reconstruction and development works financed through the Consolidated Fund no clear investment criteria are set. Donors tend to incorporate poverty and gender impact in their investment priorities. Normally an economic feasibility study is done for each project. Although the large majority of these studies are based on the same HDM system, input can strongly differ per donor/feasibility study.

Maintenance prioritisation is done through an iterative process between the central and decentral level of road agencies. The process is becoming more objective as maintenance systems are used as input for the process. Further progress can be made with harmonisation of unit cost rates. No clear prioritisation method is in place for reconstruction and development works. A top-down process through which national policies are translated into road interventions would be justified, but is currently lacking.

Private sector financing

The objective of involving the private sector in the implementation work has been fully realised. According to the 1999 Donor Conference Review Report, 95 percent of maintenance activities and 100 percent of major works are executed by the private sector.

Regarding private sector financing the GoG has not been able to attract any investors to the road sector. The GoG is trying to put the appropriate conditions in place, e.g. by creating a legislative basis and by identifying some projects for BOT and MOT schemes. So far this has not resulted in any concrete projects.

4.3 Efficiency

Cost recovery

For efficiency there are no direct objectives set. Assessing efficiency therefore needs to be based on best practice references or expert judgement. In order to assess the efficiency of the GRF the following issues are focused on:

- ▲ Management of GRF.
- ▲ Charging system.
- ▲ Disbursement procedures.

Management of GRF (Board and secretariat)

The GRF Board initially met each month. Recently the meeting schedule was changed to every other month. Meetings take some 4-5 hours in which quite some ground needs to

¹⁰ That is at least for the years 1997 and 1998 for which a financial statement and management report is available.

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be covered. Given the key role of the GRF Board, it is the consultant's opinion that this is a reasonable meeting frequency and duration.

The tasks of the GRF secretariat are substantial. Besides preparing and participating in Board meetings, there is a vast amount of tasks, such as monitoring activities, technical and financial auditing, fund collection and disbursement procedures and reporting. The secretariat currently consists of a director, an engineer, an accountant, a secretary and two drivers. According to the World Bank a medium sized country needs to employ not more than 5 to 10 staff trained in planning and accounting. The GRF secretariat's staff size is well below this World Bank guideline.

Charging system

GRF revenues, as presented in table 3, are collected in various ways. The approach of depositing fuel levies directly from the Ghana National Petroleum Company into the road fund account at the Bank of Ghana is considered an efficient one. The route is direct, avoiding detours through customs or Ministry of Finance, and the process is transparent. The collection of toll revenues and vehicle registration fees is done through GHA and DVLA respectively, without charging a collection fee. Both organisations should consider charging the GRF for collecting these revenues as this gives insight in the 'net revenues'. It should be mentioned, however, that both organisations are getting some compensation from the GRF. GRF has started to privatise toll collection, private contractors are paid though the revenues generated. First results are promising and therefore the GRF envisages extending the privatisation of toll collection to other roads as well.

The process of broadening the revenue-basis of the GRF comes with additional transaction costs. Putting a strong effort in improving the revenues from for example international traffic may turn out to be counterproductive, as revenues may not cover (additional) transaction costs. Raising fuel levies (periodically) has a greater impact and comes with relatively low costs.

Disbursement procedures

The GRF resources are allocated to the agencies based on predetermined criteria and the work programme of the three recipient agencies, subject to availability of funds and approval by the Board. The system of transferring funds for routine maintenance on a monthly basis is considered a practical approach. The certificate system with a number of required signatures from the recipient agencies could be streamlined, avoiding delays in payments to the contractors.

Investment priorities

The maintenance prioritisation system is quite time consuming, as it is a consensus driven process with frequent rounds of communication. The maintenance systems in use at the three agencies have in common that they are rather robust and simple and do not need extensive input. Changing the maintenance systems, such as at DFR, especially more than once, is considered quite inefficient.

Private sector participation and financing

With regard to private sector participation a key question is whether private sector operations are more efficient than force account. In general, literature indicates potential efficiency gains through outsourcing. From this perspective the evaluation team would

suggest an efficiency gain in the long run as a result of outsourcing of activities. However, in the short run a rather inefficient transition period is in place in which many of the staff previously involved in the implementation of the road programme are still employed by the road agencies.

On private sector financing not too many remarks can be made as very limited concrete progress has been made in this field. It could be feasible to assess to what extent private sector financing in roads is a serious option. Based on the outcome of this assessment future efforts can be efficiently planned.

4.4 Impact

Cost recovery

The condition of Ghana's road network is improving (see technical section). Obviously, road users are benefiting. The functioning of the GRF has certainly been a contributing factor in this process. The other side of the story is that fuel levies (and other road user charges, e.g. road tolls) have been increased and are expected to be further increased in the future. This clearly affects the road user in financial terms. Further increasing road user charges may touch a threshold of acceptability to pay. Increasing fuel prices may lead to side effects, such as decreased fuel consumption and increased inflation. It is the consultants opinion that given the current level of charging a critical point in terms of acceptability has not yet been reached.

The staff of GHA, DFR and DUR are very happy with the GRF and GRF Board even though the Board has imposed stringent guidelines on the road agencies for disbursement of funds. For the road agencies, the major constraint for maintenance was lack of resources. With the establishment of Roads Board to oversee allocation and disbursement of funds, the agencies are getting money for maintenance on time. The backlog is so huge that it will take time for all maintenance needs to be met. People are seeing results and have stopped complaining.

Investment priorities

National policies, such as regional development and stimulation of the export position, are not taken into consideration in an explicitly structured method. This especially applies to reconstruction and development works. However, for rehabilitation works on feeder roads a new system is under development, specifically addressing local production, poverty and gender issues.

Private sector participation and financing

Private sector participation, especially in relation to small contractors and labour-based maintenance, can have a positive impact on poverty reduction. No direct impact is expected from private sector financing.

4.4 Sustainability

Cost recovery

From a road programme perspective the 'new style' GRF has made a tremendous impact. As stated above funds are becoming available for maintenance. For the development of the road programme in the long run a well functioning GRF is vital.

In the Road Fund prior to 1997, management was in hands of MoF, MoRH and the Accountant General. In this situation the executive branch of the GoG enjoyed substantial discretionary power to divert funds for other use. With the 1997 Road Fund Act the executive branch's power was limited by establishing an institutional mechanism independent of the executive branch. In recent Board meetings the autonomy of the GRF was put in question. Nevertheless, it remains the question to what extent the GoG's discretionary power is limited in practice. Although there are currently no indications in that direction, with current poor macroeconomic performance the GRF could be in for a test.

Investment priorities

The GRF has started a more structured maintenance planning and prioritisation process within the road agencies. It is believed that this process could continue to develop towards a sound and transparent system. For reconstruction and development works the situation is different. Donor-financed projects are always subject to a feasibility study, in most cases based on economic principles. Currently, the GoG has defined no objective investment criteria for reconstruction and development works. It remains to be seen to what extent the GoG will use economic criteria in the future.

Private sector participation and financing

The efforts made within HSIP to train the private sector contractors are contributing to a better developed and educated private sector work force and has created a sustainable basis for the implementation of the road programme.

5 LESSONS LEARNED

Road Fund performance

Conclusions

The GRF 'new style' has shown good performance since becoming operational in 1997. Revenues have shown a rapid increase and are close to the programmed levels as set in 1996. Funds are being allocated to the road agencies and used for maintenance activities. The combination of the Board, with road user representatives, and the secretariat has provided a good management structure. The GRF can be regarded as a good example of the second generation Road Fund.

Lessons learned

The fourth quarter of 1999 saw heavy delays in disbursements to the GRF. The GRF bank account at the Bank of Ghana was 'frozen', thus slowing down the maintenance process. From a perspective of supplying a sufficient and reliable flow of resources the delays were difficult to accept. Measures have been taken to avoid this situation in the future.

Recommendations

The first recommendation would be to continue to develop the GRF in the current way. Emphasis should be on further increasing GRF revenues. This in order to cover all maintenance and rehabilitation activities and a selection of safety projects in the future. An interesting question is what other activities the GRF should cover. Raising this question to stakeholders in the Ghana road sub-sector results in many suggestions, ranging from strictly focusing on maintenance to financing the entire road programme, including development activities. It is suggested to start a debate on the activities the GRF should cover and communicate this to the general public, creating support for the GRF and potentially increases in road user charges in the future.

Another recommendation is to increase the importance of the road use fee, allowing for a differentiated charge between type of vehicles. By doing so, the relation is more direct between damage caused and funds attributed.

A final recommendation is to increase the size of GRF staff. Given the importance of the tasks and the current pressure on the engineer and accountant, it seems appropriate to add one or two staff members, e.g. one (junior) engineer and one (junior) accountant.

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Appendix A Financial flows**1996**

GHA Sub-programme	scaled down								
	Prgr. HSIP	Prgr. RSEP	Approved total	GoG	Donor	Released total	GoG	Donor	Achieved
Routine Maintenance	12.4	12.4	3.6	3.6	0.0	5.3	5.3	0.0	2.4
Periodic Maintenance	50.2	50.2	32.1	14.9	17.2	23.4	19.6	3.8	23.4
Regravelling					0.0			0.0	
Resealing					0.0			0.0	
Resurfacing					0.0			0.0	
Rehabilitation	13.6	13.6			0	4.5	0.0	4.5	
Drainage works (bridges and culverts)	0.0	0.0	9.1	2.7	6.3	0.0	0.0	0.0	10.7
Reconstruction (development)	74.5	74.5	65.2	17.8	47.5	68.7	38.0	30.7	91.8
Administration	10.1	10.1	5.9	5.9	0.0	7.2	7.2	0.0	7.2
Arrears	28.0	28.0			0.0	26.9		26.9	53.1
Total	188.8	188.8	115.9	44.9	71.0	136.0	70.1	65.9	188.7

Source: MRT, 1997 review report

DFR Sub-programme									
	Prgr. HSIP	Prgr. RSEP	Approved total	GoG	Donor	Released total	GoG	Donor	Achieved
Routine Maintenance	4.4	4.4	2.4	2.4	0.0	2.1	2.1	0.0	2.1
Periodic Maintenance	14.9	15.0	63.3	13.2	50.0	45.5	11.3	34.2	45.5
Regravelling					0.0			0	
Resealing					0.0			0.0	
Resurfacing					0.0			0.0	
Rehabilitation	22.9				0.0			0.0	
Drainage works (bridges and culverts)		1.0	6.8	0.9	5.9	4.9	1.5	3.4	4.9
Reconstruction (development)	4.5	4.5	0.5	0.5	0.0	0.4	0.4	0.0	0.4
Administration	1.4	1.4	1.4	1.4	0.0	1.1	1.1	0.0	1.1
Arrears	2.0	2.0	0.0		0.0	2.0		2.0	1.5
Total	50.1	28.3	74.4		55.9	56.0	16.4	39.6	55.5

Source: MRT, 1997 review report

ANNEX VII-ECONOMIC-FINANCIAL FOCUS

DUR									
Sub-programme	Prgr. HSIP	Prgr. RSEP	Approved total	GoG	Donor	Released total	GoG	Donor	Achieved
Routine Maintenance	2.6	2.6	2.1	2.1	0.0	1.7	1.7	0.0	1.7
Periodic Maintenance	18.0	15.0	9.2	9.2	0.0	9.0	9.0	0.0	8.5
Regravelling					0.0			0.0	
Resealing					0.0			0.0	
Resurfacing					0.0			0.0	
Rehabilitation	0.0				0.0			0.0	
Development	46.6	46.6	44.4	8.7	35.7	36.9	13.7	23.2	41.0
GOG			20.1	6.2	13.9	18.0	11.3	6.7	19.1
URBAN II			7.1	0.5	6.7	4.0	0.8	3.2	12.8
UTP			17.1	2.0	15.1	14.9	1.6	13.3	9.1
Minor works					0.0			0.0	0.5
Administration	1.0	1.0	0.6	0.6	0.0	0.5	0.5	0.0	0.5
Arrears	10.0	10.0			0.0	4.7		4.7	16.3
Total	78.2	75.2	56.2		35.7	52.8	24.9	27.9	68.5

Source: MRT, 1997 review report

ANNEX VII-ECONOMIC-FINANCIAL FOCUS

1997

GHA Sub-programme									
	Prgr. HSIP	Prgr. RSEP	Approved total	GoG	Donor	Released total	GoG	Donor	Achieved
Routine Maintenance	13.3	13.0	10.0	10.0	0.0	6.9	6.9	0.0	6.4
Periodic Maintenance	64.6	65.0	54.7	33.9	20.8	25.8	17.6	8.2	19.6
Regravelling			10.4	8.1	2.3			0.0	5.2
Resealing			9.9	3.8	6.1			0.0	2.5
Resurfacing			30.3	17.9	12.4			0.0	10.5
Overlay			2.0	2.0	0.0			0.0	-
maint. of town roads			2.1	2.1	0.0			0.0	1.4
Bridge and Culverts Maint.		9.0	2.0	2.0	0.0	1.6	1.6	0.0	0.0
Rehabilitation	12.7	13.0	7.4	4.6	2.8	0.0		0.0	11.9
Development	89.9	81.0	62.6	15.4	47.2	108.2	65.4	42.8	101.5
Construction					0.0			0.0	
Reconstruction	89.9		60.0	14.9	45.1	105.6	64.9	40.7	96.9
bridge construction			2.6	0.5	2.1	2.6	0.5	2.1	4.7
Administration	10.8	11.0	8.6	8.6	0.0	8.6	8.6	0.0	
Arrears	10.0	10.0			0.0			0.0	
Total	201.3	202.0	145.3	74.5	70.8	151.1	100.1	51.0	139.4

Source: MRT, 1998 review report.

DFR Sub-programme									
	Prgr. HSIP	Prgr. RSEP	Approved total	GoG	Donor	Released total	GoG	Donor	Achieved
Routine Maintenance	5.5	5.0	4.5	4.5	0.0	2.6	2.6	0.0	3.7
Periodic Maintenance	15.4	15.0	8.1	2.1	6.0	6.9	1.1	5.8	7.2
Regravelling					0.0			0.0	
- NFRMP			6.6	0.6	6.0	6.1	0.3	5.8	
- GOG					0.0			0.0	
spot impr./culverting			0.8	0.8	0.0	0.5	0.5	0.0	
resealing/resurfacing			0.5	0.5	0.0	0.3	0.3	0.0	
drainage structure			0.3	0.3	0.0			0.0	
Rehabilitation	19.4	19.1	20.5	2.4	18.2	19.6	0.8	18.8	13.1
NFRMP		16.8	12.1	1.1	11.0	14.5	0.6	14.0	6.5
GOG		2.0	0.6	0.6	0.0			0.0	1.5
2nd cycle institution		0.3	0.2	0.2	0.0	0.2	0.2	0.0	0.3
Stabex			6.3	0.3	6.0	4.5	0.1	4.3	4.8
TRP-2			1.3	0.2	1.1	0.5	0.0	0.5	
Bridge development		2.0	6.0	1.6	4.4	6.6	0.6	6.0	1.4
Steel bridges					0.0			0.0	
- JICA			0.8	0.8	0.0	0.3	0.3	0.0	
- Spanish			0.8	0.8	0.0	0.3	0.3	0.0	
Composite bridges					0.0			0.0	
- JICA			4.4		4.4	6.0		6.0	
Reconstruction	4.0	2.0	0.4	0.4	0.0	0.2	0.2	0.0	0.1
Administration	1.5	2.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0
Arrears	2.0	2.0			0.0			0.0	0.0
Total	47.8	47.1	40.5	11.9	28.6	36.9	6.3	30.6	25.5

Source: MRT, 1998 review report

ANNEX VII-ECONOMIC-FINANCIAL FOCUS

DUR Sub-programme									
	Prgr. HSIP	Prgr. RSEP	Approved total	GoG	Donor	Released total	GoG	Donor	Achieved
Routine Maintenance	2.7	3.0	3.0	3.0	0.0	2.1	2.1	0.0	0.8
Periodic Maintenance	18.0	18.0	1.7	1.7	0.0	7.3	7.3	0.0	3.5
Regravelling					0.0			0.0	
Resealing					0.0			0.0	
Resurfacing					0.0			0.0	
Overlay					0.0			0.0	
maint. of town roads					0.0			0.0	
Bridge and Culverts Maint.		3.7	2.9	2.9	0.0			0.0	
Rehabilitation	0.0	0.0	3.4	3.4	0.0	0.0		0.0	4.5
Development	49.3	47.0	40.7	6.3	34.4	36.3	21.1	15.2	35.1
Construction					0.0			0.0	
Reconstruction	49.3				0.0			0.0	
bridge construction					0.0			0.0	
Administration	1.0	1.0	0.7	0.7	0.0	0.6	0.6	0.0	0.6
Arrears	5.0	5.0			0.0			0.0	
Total	76.0	77.7	52.4	18.0	34.5	46.3	31.1	15.2	44.5

Source: calculated based on MRT 1998 review report

ANNEX VII-ECONOMIC-FINANCIAL FOCUS

1998

GHA Sub-programme	Prgr.	Prgr.	Approved total	GoG	Donor	Released total	GoG	Donor	Achieved
	HSIP	RSEP							
Routine Maintenance	14.0	13.0	10.9	10.9	0.0	10.9	10.9	0.0	10.1
Periodic Maintenance	72.1	64.0	41.0	17.3	23.7	38.4	20.0	18.4	24.0
regravelling			5.9	3.7	2.2			0.0	
resealing			10.9	2.2	8.7			0.0	
resurfacing			21.6	7.8	13.8			0.0	
overlay			0.9	0.9	0.0			0.0	
Maint. of town roads			1.8	1.8	0.0			0.0	
Bridge and Culverts Maint.		9.0	2.0	2.0	0.0	1.6	1.6	0.0	
Rehabilitation	6.8	15.0	7.6	3.7	3.9	0.0		0.0	7.6
Development	110.3	17.0	95.9	62.0	33.9	62.7	22.3	40.4	108.2
construction					0.0			0	
Reconstruction	110.3	15.0			0.0			0.0	
Bridge construction					0.0	3.5	3.5	0.0	
Administration	11.6	14.0	14.0	14.0	0.0	14.0	14.0	0.0	14.0
Arrears	5.0	10.0			0.0			0.0	
Total	219.8	142.0	171.3	109.8	61.5	127.6	68.7	58.9	163.8

Source:MRT 1999 review report

DFR Sub-programme	Prgr.	Prgr.	Approved total	GoG	Donor	Released total	GoG	Donor	Achieved
	HSIP	RSEP							
Routine Maintenance	6.8	5.0	5.0	5.0	0.0	5.0	5.0	0.0	5.0
Periodic Maintenance	17.9	13.0	16.5	6.1	10.4	15.7	10.4	5.3	15.7
Regravelling			10.0	1.5	8.5	12.5	5.3	7.1	12.5
spot improvement			4.9	3.0	1.9	2.9	2.3	0.6	2.9
Surfacing			1.6	1.6	0.0	0.3	2.7	-2.4	0.3
Rehabilitation	15.1	19.0	16.7	3.7	13.0	9.4	3.4	6.0	9.4
NFRMP			3.7	0.6	3.1	5.0	1.0	4.1	5.0
GOG			3.1	3.1	0.0	2.5	2.5	0.0	2.5
2nd cycle institution			0.0		0.0	0.0		0.0	0.0
Stabex			10.0		10.0	1.9		1.9	1.9
Bridge development		14.0	5.0	2.1	2.9	4.3	1.5	2.9	4.3
Steel bridges					0.0			0.0	
- JICA Ph. 1			1.1	1.1	0.0	1.0	1.0	0.0	1.0
- JICA Ph. 2			2.9		2.9	2.9		2.9	2.9
- Spanish			1.0	1.0	0.0	0.4	0.4	0.0	0.4
Reconstruction	2.0	2.0			0.0			0.0	
Administration	1.7	1.0	0.8	0.8	0.0	0.4	0.4	0.0	0.4
Arrears	0.0				0.0			0.0	
Total	43.5	54.0	44.0	17.7	26.3	34.8	20.7	14.2	34.8

Source: MRT 1999 review report

ANNEX VII-ECONOMIC-FINANCIAL FOCUS

DUR Sub-programme									
	Prgr. HSIP	Prgr. RSEP	Approved total	GoG	Donor	Released total	GoG	Donor	Achieved
Routine Maintenance	2.7	4.5	4.0	4.0	0.0	4.0	4.0	0.0	3.3
Periodic Maintenance	14.7	15.0	13.6	13.6	0.0	12.6	12.6	0.0	14.9
Regravelling		0.2	0.2	0.2	0.0	0.1	0.1	0.0	0.1
Resealing		1.0	0.9	0.9	0.0	0.1	0.1	0.0	0.3
Resurfacing		3.1	2.9	2.9	0.0	1.6	1.6	0.0	2.7
drainage structures		4.7	4.5	4.5	0.0	3.0	3.0	0.0	4.6
Others		1.7	0.8	0.8	0.0	6.8	6.8	0.0	0.7
Rehabilitation	0.0	4.5	4.3	4.3	0.0	1.0	1.0	0.0	6.5
Reconstruction	30.2								
Reconstruction (URBAN II-project)		4.4	4.4	1.2	3.2	8.8	0.0	8.8	16.8
road rehab. in Accra		0.0	0.0		0.0	4.4		4.4	9.8
kejeta development		3.5	3.5	1.0	2.6	1.6		1.6	4.3
office/workshop		0.6	0.6	0.1	0.6	0.9		0.9	1.3
Others		0.2	0.2	0.2	0.0	2.0		2.0	1.4
Urban Transport Project		29.8	29.8	5.0	24.8	29.3	4.0	25.3	44.7
road rehab. in Accra		8.1	8.1	1.4	6.8	10.7		10.7	22.8
road rehab. in Sekondi		1.1	1.1	0.2	0.9	0.6		0.6	2.5
Depr. Areas in Accra		5.0	5.0	0.8	4.2	3.8		3.8	7.9
NMT		3.8	3.8	0.6	3.2	2.8		2.8	2.8
Terminals		8.4	8.4	1.4	7.0	5.1		5.1	6.2
Others		3.4	3.4	0.6	2.9	2.3		2.3	2.5
Kumasi city roads project		1.0	1.0	1.0	0.0	0.8	0.8	0.0	1.2
Accra city roads project		4.0	4.0	4.0	0.0	1.9	1.9	0.0	10.7
Interchange									
Kanda			0.0		0.0	0.0		0.0	0.3
Sankara		5.6	6.6	1.4	5.2	0.0		0.0	9.3
Administration	1.0		0.0		0.0	0.0		0.0	
Arrears	3.0				0.0			0.0	
Total	51.6	64.2	63.2	30.1	33.2	57.5	23.3	34.2	101.2

Source: MRT 1999 review report

ANNEX VII-ECONOMIC-FINANCIAL FOCUS

1999

GHA Sub-programme									
	Prgr. HSIP	Prgr. RSEP	Approved total	GoG	Donor	Released total	GoG	Donor	Achieved
Routine Maintenance	14.4	12.0	12.0	12.0	0.0	5.0	5.0	0.0	6.8
Periodic Maintenance	72.5	56.4	54.4	18.9	35.4	43.0	26.0	17.0	43.0
Regravelling		7.7	7.3	4.8	2.5	0.0			
Resealing		16.9	16.9	2.1	14.8	0.0			
Resurfacing		21.3	20.4	5.1	15.4	0.0			
overlay and upgrading		7.6	6.9	4.1	2.8	0.0			
Maint. of town roads		2.8	2.8	2.8	0.0	0.0			
Bridge and Culverts Maint.		0.4	0.4	0.4	0.0	0.2	0.2	0.0	0.2
Rehabilitation	7.5		0.0		0.0	0.0			
Development	75.0	68.7	51.2	20.2	31.0	107.7	73.0	34.7	108.7
Construction		61.2			0.0	0.0			105.7
Reconstruction	75.0		51.2	20.0	31.0	106.4	71.9	34.5	
bridge construction		7.4			0.0	1.3	1.1	0.2	3.0
Administration	12.3	8.4	5.4	5.4	0.0	4.0	4.0		4.4
Arrears	5.0				0.0	0.0			
Total	186.7	145.9	123.3	56.9	66.4	159.9	108.2	51.7	162.9

Source: MRT, road programme and donor co-ordination, final report 1999

DFR Sub-programme									
	Prgr. HSIP	Prgr. RSEP	Approved total	GoG	Donor	Released total	GoG	Donor	Achieved
Routine Maintenance	6.9	7.1	7.1	6.0	1.1	4.5	4.5	0.0	4.5
Periodic Maintenance	20.9	15.9	11.9	6.4	5.6	6.6	6.6	0.0	6.6
Regravelling		8.2	3.8	1.0	2.8	1.8	1.8		1.8
spot improvement		3.7	6.3	4.6	1.8	3.3	3.3		3.3
Surfacing		4.0	1.8	0.8	1.1	1.5	1.5		1.5
Rehabilitation	14.9	5.7	13.9	4.4	9.5	3.1	2.9	0.3	3.1
NFRMP			0.0			0.0			
GOG		0.0	3.8	3.8	0.0	2.8	2.8	0.0	2.8
2nd cycle institution		0.6	0.6	0.6	0.0	0.1	0.1	0.0	0.1
Stabex		5.1	9.5	0.0	9.5	0.3		0.3	0.3
Bridge development		4.4	2.4	0.8	1.6	1.1	1.1	0.0	1.1
Steel bridges			0.0			0.0			
DFID		1.6	1.6	0.0	1.6	0.0	0.0	0.0	0.0
- JICA Ph. 2		0.8	0.2	0.2	0.0	0.7	0.7	0.0	0.7
- Spanish		2.0	0.6	0.6	0.0	0.4	0.4	0.0	0.4
Reconstruction	1.0	1.3	0.1	0.1	0.0	0.3	0.3	0.0	0.3
Administration	2.0	1.0	2.7	0.8	1.9	0.5	0.5	0.0	0.5
Arrears	0.0		0.0			0.0			
Total	45.7	35.4	38.1	18.5	19.6	16.1	15.8	0.3	16.1

Source: MRT, road programme and donor co-ordination, final report 1999

ANNEX VII-ECONOMIC-FINANCIAL FOCUS

DUR Sub-programme	Prgr.	Prgr.	Approved	GoG	Donor	Released	GoG	Donor	Achieved
	HSIP	RSEP	total			total			
Routine Maintenance	2.7	5.0	4.8	4.8	0.0	2.4	2.4	0.0	4.0
Periodic Maintenance	11.6	18.5	17.6	17.6	0.0	4.6	4.6	0.0	10.2
Regravelling		0.3	0.3	0.3	0.0	0.2	0.2	0.0	0.3
Resealing		1.3	1.2	1.2	0.0	0.3	0.3	0.0	0.1
Resurfacing		4.5	4.3	4.3	0.0	0.8	0.8	0.0	2.3
drainage structures		5.7	5.4	5.4	0.0	0.8	0.8	0.0	1.6
Others		2.2	2.1	2.1	0.0	0.4	0.4	0.0	1.3
Rehabilitation	0.0	4.5	4.3	4.3	0.0	2.1	2.1	0.0	4.6
Reconstruction	8.2				0.0			0.0	
Reconstruction (URBAN II-project)		3.1	3.7	1.5	2.2	4.4	0.8	3.7	4.4
road rehab. in Accra		0.0	0.7	0.7	0.0	0.5	0.0	0.5	0.0
kejetia development		3.0	2.9	0.7	2.2	3.8	0.7	3.1	4.3
office/workshop		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Others		0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Urban Transport Project		23.0	20.7	1.3	19.4	15.2	2.1	13.1	15.9
road rehab. in Accra		8.8	7.7	0.4	7.3	7.3	0.6	6.8	7.9
road rehab. in Sekondi		0.0	0.0	0.0	0.0	1.2	0.0	1.2	1.0
Depr. Areas in Accra		0.0	0.0	0.0	0.0	1.4	0.3	1.1	1.4
NMT		2.0	1.9	0.2	1.7	0.7	0.2	0.5	0.7
Terminals		6.4	5.9	0.6	5.4	3.0	0.7	2.3	3.3
Others		5.8	5.2	0.2	5.0	1.6	0.4	1.3	1.6
Kumasi city roads project		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accra city roads project		5.2	0.4	0.4	0.0	4.9	4.9	0.0	10.0
Interchange			11.8	0.9	11.0	9.0	3.9	5.1	
Kanda		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sankara		12.3	11.8	0.9	11.0	9.0	3.9	5.1	8.6
Administration	1.0	0.7	0.6	0.6	0.0	0.2	0.2	0.0	0.2
Arrears	0.0	0.0	0.0		0.0			0.0	
Total	23.5	67.8	59.6	27.1	32.6	40.7	18.9	21.8	53.2

Source: MRT, road programme and donor co-ordination, final report 1999

ANNEX VIII-CONTRACT MANAGEMENT FOCUS

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1 INTRODUCTION

1.1 Contents of evaluation group

The issue of contract management is important when evaluating the practical dispositions to effectively implement the objectives of the Road Sub-sector Programme. This separate group was formed to cover the following evaluation fields in accordance with the Terms of Reference:

<i>Evaluation fields</i>	<i>Sub-items</i>
Expenditure management and control	<ul style="list-style-type: none"> ▲ Efforts made in improving contract management. ▲ Actions taken and results in settling arrears. ▲ Assess budgeting, disbursement and auditing procedures.
Monitoring	<ul style="list-style-type: none"> ▲ Extent to which monitoring has been done and how it is used in setting priorities.

1.2 Relation to other evaluation groups

The construction management evaluation group is related to the following groups:

Financial and Economic group, for cost and budget control; the Technical group, for quality control and progress monitoring; the Institutional group, for the measurement of capacity in monitoring and for dealing with the private sector.

2 OBJECTIVES OF EVALUATION GROUP

The objectives of this evaluation group are those stated in the February 96 policy letter with regards to regaining discipline in expenditure management and control. The Terms of Reference of the evaluation call for focusing on the operations of budgeting, disbursement and auditing within the organisations involved: MRT, GHA, DFR, DUR, the Road Fund and private organisations, such as contractors.

2.1 Assessment of efforts towards the objectives stated in the 1996 Government's objectives

Referring to the policy letter, the stated policy actions were more precisely defined to be taken after settlement of arrears with contractors. They are:

1. Clean up the portfolio in giving priority to near completion projects, and by terminating non-viable contracts.
2. Minimal new contract awards until settlements of outstanding payments.
3. Limit the cumulative value on variation orders amounts to 25% of the initial contract amount.
4. Enhance the capabilities of the road agencies in planning, programming and budgeting.
5. Develop and install appropriate accounting and information systems for monitoring each contract's performance.

2.2 Review of procedures of budgeting, disbursement and auditing

The Terms of Reference emphasise the evaluation of procedures within the organisations involved. They further state that the improvements in contract management especially in the field of budgeting control, disbursement procedures and auditing during the period be assessed.

2.3 Linkage to the legal framework

The Terms of Reference also require that the efforts in contract management be assessed considering the link to the legal basis as far as the procurement procedures are concerned.

3 OVERVIEW OF PERIOD 1996 - 2000

3.1 Background and situation at programme inception in 1996

The organisations: the Ministry of Roads and Transport and the implementing agencies

MRT is responsible for the road sector policies, planning, donors co-ordination, and the supervision of the implementing agencies. The MRT is the nominated Employer in the contract relations. Through its own MIS department, MRT insures the reporting of each agency's activity, and in early 1995, an Accounting and Management Information System Unit (AMISU) was established to manage efficient procedures of accounting, disbursement requests and cost-control procedures for the three agencies.

GHA is an implementing agency responsible for the development and maintenance of the national trunk roads network. It has autonomous status. With regards to contract management operations, GHA's duties include the control of execution to be in accordance with the contractual terms and conditions, technical specifications and compliance to standards. Two separate directions inside the agency handle development and maintenance projects. The Planning Division co-ordinates project evaluation, programming and budgeting.

DFR and DUR are departments within the Ministry of Roads and Transport. Their functions include the contract management, from procurement to works acceptance, of their respective dedicated road network. As ministry departments, they are subject to its general procedures and managerial policies.

DFR is responsible for a network of some 24,000 kms of feeder roads, with 10 regional offices and 10 (of 32) district offices.

DUR is responsible for construction and maintenance of urban roads in the five major cities plus the urban area of the Greater Accra District.

Procurement

Each agency initiates and schedules the procurement process for works according to a planned programme of interventions established by MRT.

For donor-funded projects, each agency manages the tendering process, under each donor's applicable guidelines. In the case of the World Bank component of the programme, the summary of proposed procurement arrangements indicates 35% of contracted amounts through International Competitive Bidding, 44% through National Competitive Bidding, and 21% through other methods applicable for the procurement of consulting services, training and operations related costs.

In the absence of pertinent clauses of a national procurement code, projects being fully funded from Ghana public funds, including from the revenues generated by the Road Fund, negotiated contracts for works may be awarded without competitive procedures.

Tender Boards approve awarding of contracts, after evaluation and recommendations proposed by the implementing agencies. There are three levels of Tender Boards; each of

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them having the authority on the basis of contract amount thresholds. The Central Tender Board has the authority for contract amounts exceeding the equivalent of US\$ 2.0 million; a Regional Tender Board has the authority for works and supplies with an estimated value of less than US\$ 2.0 million. The financial ceiling for District Tender Boards is Cedis 100 million (equivalent to US\$ 20,000 at the current exchange rate).

In competitive bidding situations, the sector ministry initiates the procurement process through their agencies, by advertising bids in local newspapers or through advertisement calling for pre-qualification in the case of international competitive bidding. A registry of local contractors is administered by the MRT, and a level of financial capacity, as well as equipment and human resource levels, define categories being used in the qualification criteria for bidding participation. Review of qualification criteria and evaluations through analysis of financial proposals are conducted by the implementing agencies that submit their recommendations to the Tender Board. Upon approval by the Tender Board, the implementing agency issues the acceptance letter and the Minister of the parent Ministry signs the contract.

Variation orders affecting contract amount and works duration are granted by implementing agencies. In 1996, the approval of variation orders had largely contributed to commitments without appropriate funding and to the accumulation of arrears payments due to the contractors (see Chapter 3.4 hereunder). Payments in arrears, compounded with interest and price revision reaching the equivalent of US\$ 75 million, were the major reasons to define the stated policy objectives addressing the expenditures management and control.

The financial management

In 1995, MRT established an Accounting and Management Information System Unit (AMISU) to constitute a management tool for monitoring financial and accounting information, to co-ordinate periodical reporting and to channel disbursement requests from the agencies. Auditing is performed every year (by Benning & Associated Consultants for the last 2 years) with the results presented during the Donors' Conference. The Auditor General procedures are considered the only internal auditing system.

The Contract Management

The implementing agencies are in charge of the day-to-day contract management operations under their own organisational structure and professional staff. These structures are based on the functional project management relationships following a model of public works administration. This involves administration and technical departments with their subdivided competent units.

3.2 Achievements during the period in each of the implementing agencies

The Ghana Highway Authority

i Procurement Management

Donors Funded Projects

Donors funded projects have their contracts awarded through competitive procedures of selection. There are typically three methodologies with their supporting documents that are encountered, including applicable General Conditions of contract.

The World Bank procedures are based on the 1995 edition of the Bank's Guidelines. International Competitive bidding applies to estimated contract amounts in excess of US\$ 2.0 million and National Competitive Bidding for works estimated below US\$ 2.0 million. Prior review by the Bank is mandatory for works of more than \$1.0 million.

European Union-funded projects follow the official EU procedure of procurement (General Regulations of the EDF) with close involvement of the local delegation.

The third type of procedure is supported by the FIDIC documents and applies to the other sources of financing. Periodic review or supervision mission by donors does not indicate any difficulty or problem in the compliance to the set procedures on those donors funded projects. Technical conditions of contract refer to The Standard Specifications for Roads and Bridge Works (Jan 91), sometimes complemented by Standard Method of Measurement.

The sample of reviewed documents relates to the Japan Government-funded project of the Anwiankwanta-Kumasi road project, the contract documents for the Dutch Government-funded Gyato Zongo - Yeji project and the EU-funded Awaso-Nobekaw road project.

The procedures of procurement are adapted to each donor's guidelines and supporting documents. The effort to adapt to each procedure is considered cumbersome and for the ensuing phase of contract administration, the agency designates a different Principal Engineer according to the type of financing source. As mentioned above, the process is eventually carried out to donors' satisfaction, as far as compliance to guidelines is concerned.

The reality is that in any of the procedures, the differences are more in practicalities as all of them are oriented towards the objectives of transparency, fairness, economy and efficiency in the selection.

Government of Ghana - wholly funded projects

When procurement is related to projects fully funded by Ghanaian public funds, the typical method of procurement had previously been through negotiation with a nominated contractor. In 1996, a study on contracting procedures shows that 27 major contracts undertaken by GHA were all concluded under this procedure. The current situation limiting the volume of this source of funding, as well as the necessity to cope with the implications resulting of these decisions (budget over-runs caused by delays, variation-orders) has limited the number of negotiated agreements to the undertaking of

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additional works under existing contracts. The agency states that "considering the limited number of Road Contractors with the capacity and capability to undertake large scale works of the projects, negotiations are normally held with such few Contractors already mobilised to undertake additional works in such localities at competitive prices. Some works too were sole sourced because they were pre-financed by the Contractors themselves". These implications will be examined in the contract management section hereafter. The procedure contradicts the objectives of transparency and fairness, and brings long-term effects on the credibility of the agency and the whole public procurement system. The objectives of economy, as well as those of efficiency, are shown not to be met when considering the financial results and the excessive duration of these projects. The enclosed Appendix C gives an overview of the financial and progress status for a selection of contracts according to their source of financing, and therefore their procurement procedure. It was noted that all routine and periodic maintenance works were secured competitively using IDA procurement guidelines.

Regarding the legislative framework for public procurement, a reform is currently under way. Effective steps in the preparation of a comprehensive code of procurement are being actively taken as evidenced by the assistance of the legal consultant firm Winston & Strawn to the MRT and the February 2000 workshop initiated by the Procurement Policy Oversight Group of the Ministry of Finance. The set goal of the committee is to establish a set of regulations and institutional structures by the end of the year 2000, leading to a National Procurement Code embodied into a law thereafter. The objective of the reform is to provide an official code, which coupled with an auditing agency with real investigative power, will increase the confidence of investors and financing institutions and therefore their volume of funding.

This would be a major achievement for the national economic community, if it establishes a legal framework emphasising the characteristics of consistency, credibility and reliability in the functions of the Government authority.

ii. Contract Management functions

Planning stage

To summarise the current level of involvement of GHA in the preliminary phases applicable to its managed projects, the first intervention is at the planning level when feasibility studies and appraisal are being prepared under the Direction of Planning for recommendation to the Planning Division of MRT. Officially, MRT is the government entity in charge of defining a programme of interventions meeting the needs as they are suggested by the agency and the budget constraints, themselves defined in accordance with the Government priorities and financing institutions strategies.

With regards to development projects, once a programme is approved, the GHA Planning Division establishes a plan of action starting with the phase of design and studies, conducted by GHA staff or by consulting engineers. The Planning Division maintains the co-ordinating and managing actions during this phase and calls for assistance from engineering staff of the Development or Maintenance Departments, as the case may be, to oversee the design's progress and quality.

As far as maintenance projects are concerned, the GHA head office initiates the planning process with a road condition survey. The results of the survey generate a list of priorities that are then submitted to regional offices for consultation with local authorities. The

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resulting selection is sent back to GHA head office for determination by MRT in relation to estimated resources available from the Road Fund revenues. The new list of qualified projects is then sent back to GHA regional offices for cost estimate's refining. The results of this estimating will finally be matched with the approved government budget for eventually concluding the yearly plan of action of road maintenance.

Procurement phase

Once the studies are considered complete, the bidding documents are prepared by GHA and the tendering process is engaged by MRT through the agency. After the bid opening public meeting by the appropriate Tender Board, the evaluation of bids is conducted by selected staff of GHA, forming a committee designed by the director of the relevant division. The evaluation includes:

- ▲ The control of the qualification criteria clearly stated in the invitation to tender (and relating to MRT national contractors registration); and
- ▲ The analysis of the financial proposal;
- ▲ Compliance to specifications and bill of quantities.

This procedure lacks a formalised internal documented process inside the agency to allow for an actual internal auditing system (based on recorded archives) that would provide and affirm the transparency and the credibility of this essential stage in any case of funding source. Comments by the Agency state that transparency is demonstrated by independent reviews of Evaluation Report by MRT, the Donors and relevant Tender Board. During the mission, the tendering documents relating to the sample of reviewed projects (Appendix C) were provided to the Consultant. However, the documents supporting the Invitation to Tender, Bids Opening Reports, Analysis Reports, Evaluation Reports and Awarding Committee Report were no longer available for a post review.

After the MRT approval of the agency recommendation, and the no objection of the financing institution when applicable, the evaluation report is eventually transmitted to the Tender Board for approval. Upon approval, the contract is signed by the MRT Minister and transmitted to the agency for implementation. For EU-funded projects, the signature is at the National Authorising Officer level (Ministry of Finance).

For maintenance projects, GHA regional offices that will eventually manage the awarded contracts, perform the function of procurement of the implementing agency. The stated objective of contracting out the maintenance works implementation has been reached as it is the case for 100% of the periodic maintenance works and adequately, for 90% of routine maintenance works on the trunk road network.

Construction phase

The structure of the organisation

The contract management for development projects is the responsibility of the Division of Contracts, structured as per the agency's organisational chart with three managerial units: the Quantities Management, the Principal Engineers and the Engineer's Representatives acting as project managers. The existing job description manual, established in 1994, does not reflect in the Consultant's opinion, the actual and day-to-day duties of the different positions. Comments by GHA to the draft report disagree with this statement, indicating that the various Contracts have the duties and responsibilities of all parties defined.

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In the second half of the period 1996-2000, an effort was made to formally adapt the procedures of site operations management, following the phase-out of the "force account" execution to the contracting of works implementation. A Site Operations Manual (SOM) was published in May 2000, after a trial use of procedures since early 1999. The SOM addresses the detailed procedures of some key phases of works, such as the Commencement of Works, the Possession of Site, the Field Control, the Cost and Progress Management, the Claims, the Taking-over of the Works, Final Taking-over and Site Records. Functional relationships are explained in detail on the basis of the FIDIC terminology and allocation of authority. Procedures are presented with samples of the supporting forms. For the day-to-day construction management operations, this document may become the key reference in the progressive set-up of a new and a more rational process. It does not refer however to the managerial tool of Construction Management integrated system put in place during the period.¹

Budgeting

There are three components in the budgeting functions associated with the management of contracts.

The first component is directly connected to the planning stage and is a basic reference for executive decisions at that stage. The budgeting at that stage is an estimate for which GHA plays a role through its planning division during the feasibility and appraisal stages, with the assistance of costing engineers and the agency's quantity management.

The second component finds its application during the works execution by establishing a monitoring system providing a cost control by matching, per budget item, level of execution and authorised corresponding budget. In 1998, a computerised Construction Management System (CMS) was installed and constitutes a sophisticated and powerful tool including budgetary management, as long as the information is tightly updated by the staff. The 1998 version software also includes:

- ▲ Information on foreign exchange rates.
- ▲ A library of unit prices with possible cross analysis through contracts in the database.
- ▲ Spread sheet charts and graphic analysis allows for a comprehensive follow up in works completion level and scheduling.

The third level of budget control relates to periodical forecasts to be established by taking into account updated technical and financial conditions, and estimating the future incidence of encountered or expected circumstances during the works progress. This function is an executive estimate leading to managerial decisions at a prevention level. Revised estimates of Cost to Completion and Budgetary Requirements are updated monthly by GHA and used as a basis for the preparation of the GHQ Medium Term Expenditure Forecast Budget.

Progress report, Payment Certificates and Disbursement procedures

Progress Report

As a result of the efforts associated with harmonising the site operations during the period 1996-2000, through the SOM publication in May 2000, monthly or quarterly

¹ Comments by GHA to the draft report indicate that the SOM was designed for site supervision works beginning from the Signing of the Contract to the Issue of the Final Completion Certificate, and that other GHA Documents deal with the other functions associated with Construction Management.

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reports on works progress are issued under a standardised format. The reports appropriately include project's outline information, a detailed calendar of activities during the period and a statement on short-term scheduling, the list of mobilised human and equipment resources by both the contractor and the supervising entities. Appendices include minutes of job site meetings, progress charts and corresponding financial information and payments approval status, details relating to variation orders, material testing and general information on work conditions with photographs. This periodical report is a responsibility of the supervising entity.

Payment Certificates

The format of interim payment certificates was reviewed in the AMISU's premises. The adopted form is adequate with the attachments detailing the calculations of price fluctuation formula, retention and other applicable deductions or contractual adjustments. The Site Operation Manual reflects these dispositions on a less practical format.

Disbursement Procedures

The procedure leading to the approval of interim payment requests is also explained in detail in the SOM. However, although the actual model of forms is adopted, the whole process unnecessarily involves many more stages of approval. In the strict application of contract relations, the process of approval should be in three stages:

1. The first stage of approval involves the contractor and the supervising engineer (Engineer's Representative).
2. The approval of GHA (Engineer); and
3. The MRT (Employer) who eventually transmits to the paying institutions.

The reality is that the circuit extends to incorporate regional and district authorities between the first and the second stage of approval.

The consultant A.. Warrender, in 1998, notes the involvement of 30 different processes within eight authorities. Our reviewed sample shows the involvement of five regional institutions that are not contractual parties in the works execution. A distinction should be made between the contract's enforcement actions and the appropriate diffusion of information to interested parties, users and beneficiaries of the completed works. As an alternate to the process, the contractual relationship might include the obligation of the overall acceptance of the completed works by the regional authorities, and therefore their financial authority on the release of the 10% retention amount; but the interference in the actual performance of contract between employer and contractor is highly detrimental from different points of view:

First, it tends to dilute the responsibility of each approving party, including those who are effectively in charge of the works;

Second, it is time consuming, as a single circuit takes up to a year; and therefore, costly, as contract agreements include provisions for interest payments in case of delay in approved payment certificates. The situation has also a secondary and major effect on the pricing to be considered by contractors who admit that they have to include huge financial costs to their cost estimates in their tenders.

Finally, the situation is an open door to corruption practices.

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When reaching the final stage of the process, i.e. when the MRT (Employer) forwards to the Accountant General/Finance/Treasury for payment, the implementing agency does not control the payment operation. For some Donor-assisted Projects, such disbursements are made offshore, and in most cases the Donors advise GHA after the payments have been made to enable the Agency to reconcile the accounts. Delays in contractors payments when Government-Funded Projects bring negative elements in the contract management performance.

First, as per contractual conditions, the delays imply additional costs.

Furthermore, GHA is not in the position to quantify those costs and manage tight cost-control. The same may be said for budgeting control and forecasts.

And finally, in the contractor's point of view, he can see that his contractual counterpart does not hold the necessary power to meet all of its contractual obligations, generating therefore an unhealthy condition for mutual respect and compliance to agreement.

Accounting, Reporting

In the appraisal report of early 1996, it is mentioned that GHA and MRT already had established appropriate accounting systems. In order to improve the financial control in the sector, MRT established the Accounting and Management Information System Unit (AMISU), a temporary unit working on a consulting basis. Originally, its role was limited to the financial management of donor funded projects, to be expanded later to cover all road contracts. This step was never taken and in fact, AMISU's actions in the fields of cost control (at the level of the accounts payable management), accounting and reporting on credit status have remained limited to IDA funded projects, and to projects funded through OPEC funds and the DANIDA grant.

The Department of Urban Roads (DUR)

i. Procurement Management

The process of procurement is detailed in a Project Management Manual intended for use by Metropolitan/Municipal/District Road Unit. The supporting documents and procedures follow the guidelines and terminology of the World Bank. The procedures for evaluation and transmission between the different institutions are clearly defined. The roles and limits of authority of the Tender Boards are those stated above.

ii. Contract Management Functions

Planning Stage

The planning is undertaken by DUR by issuing development plans based on transport and traffic studies. The process involves the Metropolitan and Municipal Assemblies and is established for long-term (up to 20 years) objectives of transportation needs. Concordant 5-year rolling strategic plans are established with local authorities and 3-year implementation programmes are planned in accordance with budget availability.

For periodic maintenance projects, an annual planning is undertaken by a local engineer of the Regional Unit, in co-ordination with Assemblies to take into account their requests and priorities. The proposition is submitted to DUR Headquarters which will define the available budget based on Road Fund availability. The budget ceiling is transmitted back to the Regional Unit which will actualise its annual plan and possibly include postponed interventions in the next year budget. A Maintenance Management System has been set up but is not operational yet. Routine maintenance is planned on an as-needed basis, based on estimates by Regional Unit; It only applies to short-term intervention.

Procurement Stage

For development projects, it is the policy of DUR to involve the consulting company in charge of the project's design in the setting of all bidding documents and evaluation of bids. The agency intervenes in the process of the approval of the plans and specifications. Bids evaluation reports, after validation by DUR, are sent to the appropriate Tender Boards, generally the Central Tender Board, as development projects usually exceed the equivalent of US \$2 millions mark.

Procurement for maintenance of GoG funded projects is based on National Competitive Bidding procedures according to The World Bank Guidelines. The Bid Opening takes place in the appropriate Tender Board (according to works estimate) and evaluation is performed by Metropolitan/Municipal/District Roads Units (MMDU). The evaluation is sent to the Tender Board through the DUR headquarters. After Board approval, the contract signing takes place at the DUR head office. It is estimated that less than 10% of contract amounts for periodic maintenance is still performed by the DUR work force.

Construction Phase

Structure of the organisation

The staff of 461 is spread over the 6 regional offices, with 145 of them in the Greater Accra urban area. Overall, the distribution is as follows: Engineers and technicians: 22%, Superintendent and Foremen: 28%; Workmen and Labourers: 24% and Office Support:

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25%. The organisational chart does not reflect the actual decision process for the internal relations under the Agency Director, who will take responsibility after a decision process largely consultative at his staff level.

The organisational structure follows the model of a public agency where all authority rests on the Director, with the assistance of staff subdivided by its area of competence rather than its actual function in the managerial process. Administrative procedures are detailed in a set of Project Management Manuals applicable to the main phases of the project cycle.

In the contract management process, DUR establishes itself as the Employer's Representative and delegates full Engineer's power to the consulting firm designated to perform the works supervision of development projects. As far as maintenance works are concerned, the supervision is performed by in-house agents.

Budgeting/ Cost-to-Completion Control

The phases of budgeting on-going works are limited to the cost-control aspects in the process of payment approvals. Budget forecasts and overruns' prevention is trusted to be in the Engineer's function, but there is no evidence of actual management action at that level.

Interim Payment Certificate and Disbursements

Interim Payments Certificates are first reviewed and approved by the designated Engineer and then follow the circuit of approval by DUR regional unit and local authorities. The Payment Certificate is then forwarded to DUR headquarters where it follows an additional review involving quantity management, engineering or contracts management staff member and accounting. If, at that stage, a discrepancy is found, the adjustment is recorded to be applied to the next payment request. The payment is then requested to be made by MRT for development and donor's funded projects and to the Road Fund in the case of financial resources coming from this organisation.

Accounting, Reporting

The Project Manual PM 6 provides a detailed guide on the content of monthly reports to be established by the Engineer. The format covers the required information for an overview of the works physical and financial progress.

The accounting is directly connected to the payment approval process and essentially relates to the bookkeeping operation on the project's update.

Periodical reporting on the whole DUR activity is transmitted to the MIS unit of MRT. Considering the long approval process of interim payments, the accounting information does not reflect the updated projects' status in term of approved physical progress.

The Department of Feeder Roads (DFR)

i. Procurement Management

The Regional Units of DFR handle the procurement procedures relating to contracts for works on the basis of bidding documents finalised and approved by the DFR Headquarters office. The usual works estimates being well under the official threshold of the equivalent of US\$ 2.0 million, the Regional Tender Boards are the relevant institutions to award contracts on the basis of evaluation reports established by DFR following a process explained hereunder. In accordance with donors' policies, the documents supporting the process, and the proposed contract, are submitted for no objection on compliance of procedures and contract conditions, by the financing institution.

ii. Contract Management Functions

Planning Stage

The first step in the planning stage is initiated by the regional units of DFR, when surveying the feeder roads network and identifying the needs and extent of the scope of maintenance or rehabilitation works. The selection at that stage results from an informal co-ordination with the authorities at the District level. The DFR regional units will also follow with a preliminary design and the establishment of the corresponding cost estimate. The whole work is then transmitted to the DFR Headquarters.

DFR Headquarters gathers the proposed projects and confers with the Planning Division of MRT for consideration in the budget. Once approved at that stage, the design is completed by DFR Headquarters engineering services, or by a consulting engineer. The decisive factor in the use of a consultant designer, is the workload of the DFR engineering staff. The selection of a consulting engineer is made on a competitive basis when the project is donors-funded.

Except for some small-scale bridge works (Spain and Japan Government-funded projects), the projects relate to maintenance and rehabilitation works.

Procurement Stage

At the stage of having a selected project with an estimated budget to be funded with donor's participation, and considering the need for consultant services at the design level, DFR would submit a shortlist of consulting companies to the donor institutions, and upon approval would proceed with a competitive bidding on a "cost-plus qualification" basis, using the two-envelope system. Variations among donors procedures may include the combination of technical/financial scores on a 80/20 basis as per World Bank guidelines, or attribution to the lowest tenderer of the highest quality bracket on the technical proposal, as per the EU Regulations.

Before completion, the studies and design are reviewed by the engineering and quantity management services of the DFR Headquarters, for review and possible adaptation to local standard and site conditions.

The finalised design is then transmitted to the relevant DFR regional unit to proceed with the procurement of the works execution. The administrative conditions of the

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bidding documents are either based on the World Bank model applicable to National Competitive bidding and the FIDIC General Conditions of Contract, or the EU model of contract conditions. The NCB qualification criteria are related to the contractors' registration level of MRT, completed by specific conditions on the availability of equipment and appropriate human resources, as well as the consideration on the contractor's work load at the time of bidding.

Bids are received and open in the Regional Tender Board and the evaluation is conducted in the DFR Regional Unit. Once the evaluation report established at that level, it is sent to DFR Headquarters. After validation by the DFR Headquarters, it is submitted to the Regional Tender Board. The letter of acceptance from the Board is sent to the Regional Director for contract's execution, except for EU project where the project is signed by the National Authorising Officer (Ministry of Finance) and endorsed by the Head of the EC Delegation in Ghana.

Until recently, labour-based type of intervention have been awarded on a negotiated basis, using unit prices rates references agreed with the Association of Road Contractors. This procedure has been phased out and replaced with competitive procedures. It was noted as a matter of concern for DFR 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 performing contractors.

Construction Phase

Structure of the organisation

DFR is a Department within MRT, with the responsibility of the entire feeder road network outside major cities. The network is estimated to be more than 24,000 kms of mostly unpaved roads. It operates through the 10 regional offices which is actually in charge of the contract management. DFR Regional Units work in close collaboration with local District Assemblies, from the planning stage through the acceptance of the works, but the respective roles are not well established. The decision making process during the contract management procedures are consensual and inside the Department, follows governmental and public service mechanisms.

Budgeting

During on-going works, a cost-control operation is associated with the progress payment procedure per project, but there is no actual consolidated data disclosing actual progress in works completion. There is no short- or long-term periodical budget forecast on project costs, considering the large number of small projects of short contract duration. At the planning stage, cash flow charts may be associated with budget needs but the exercise is not updated at any stage of the project's execution.

Progress Reports, Payment Requests and Disbursements

The supervising engineer, who might be a staff member of the DFR Regional Unit, a local or foreign consultant, submits periodical progress reports along with interim payment certificates. There is no official standard in the reports content.

The process of interim payment certificates (IPC) starts with the agreement between contractor and supervising engineer, acting as the Engineer's Representative, on the value

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of works completed during the period. The IPC form is then sent to the local DFR Unit for approval and from there the itinerary of a three-level approval by local authorities starts (Economic planning officer, regional co-ordinating director and regional minister). This chain of approval involving parties that are not part of the contract, is not reflected in any official directive or regulation, and may take between three to six weeks or more.

When the IPC is back to the DFR Regional Unit, it is sent to the Deputy Director of the DFR Headquarters for additional review by maintenance engineers for compliance to technical details and by quantity surveyors, for compliance to measurement methods, arithmetic, correspondence between invoiced and contractual unit prices. This part of the procedure is estimated to take two weeks.

At that stage, the disbursement procedure is a function of the source of financing. In case of World Bank funded projects, the request for disbursement will go to AMISU. In the case of EU projects, the request for disbursement goes to the National Authorising Officer after endorsement by the EC Delegation. In the case of GoG funded projects, the in-house accounting review is performed for the availability of funds at this late stage. The check is then signed by the accountant, the Director of DFR and then sent to MRT, which sends it back to DFR Headquarters for payment to the contractor.

Accounting

As indicated in the account payable administration above, the role of the accounting in the DFR Headquarters is very limited. Besides this intervention, accounting consists in bookkeeping and petty cash management.

Periodical reporting on the whole DFR activity is transmitted to the MIS unit of MRT. Considering the long approval process of interim payments, the accounting information does not reflect the updated projects' status in term of approved physical progress.

3.3 The issue of the unit price level

It is generally recognised that unit prices encountered in road work contracts are relatively high in comparison with those applicable in neighbouring countries and considering the prevalent costs of raw materials and labour. This has been expressed as a major concern by the Directions of MRT and GHA.

In November 1998, a special assignment by Mr. Pello, Consultant, assessed the unit prices situation through the detailed review of five on-going contracts. A comparison is provided with applicable prices in Côte d'Ivoire. Many comments could be added to make such an exercise accurate, considering the variation in the availability of technologies, as well as the basic differences in the measurement methods and the definition itself of what operations or overhead costs may be included in each price. However, the results consistently show higher prices in Ghana (except for the form working operations, but these are, by far, the most difficult item to compare considering the measurement methods). The Consultant notes that, after detailed analysis, the apparently coherent system of the unit price library of the CMS in the bill of quantities definition and content is actually considered differently for each of the five contracts being reviewed. The Consultant Pello concludes by stating three reasons for the high prices level:

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- ▲ Technical choices, when some expensive techniques are being used, requiring for instance huge amounts of hauling.
- ▲ Inadequate contracting practices (Mr. Pello notes the excessive works duration and delays allowed to the contractors for usually small projects, and the lack of efficiency of the contractors and the possible collusion).
- ▲ Insufficiency of contract management.

These are Mr. Pello's statements, which obviously could not be investigated for their veracity in the scope of the evaluation. An in-depth comparative research on an international level would be an extensive task and as mentioned above, would only conclude on indicative results.

Currently, a project management expert is working in the Contracts Management Division on the special task of unifying the unit pricing system and bringing coherence to recorded statistics.

As another reference, in comparison to the estimated budget prices recorded in the staff appraisal report evaluating the road sub-sector programme, the actual prices were projected two years later, to be 2.4 times higher than foreseen for rehabilitation works, and 1.3 times higher for reconstruction works.

Based on interviewed professionals and staff members of MRT, the diagnostic could be better stated by considering first the original contracted prices and then, the overall final cost of completed works.

At the tendering process, the bidding contractors anticipate on considerable delays of payments, and the occasional experience of insufficient budget situation to adequately cover the cost of completed works (under GoG funded projects). Responsible bidders will then include in their cost estimates a factor taking into account financing costs generated by their necessity to guarantee their cash flow situation during the whole works duration. It was reported that this factor might bring the estimate up to three times the actual value determined by the labour, materials, and equipment and overhead components of the operation cost.

During the performance of the works, the compounded effects of the delay in payments, caused either by insufficient budget or the mere fact that the regular payment process may reach a year, with the price fluctuation factor built in the contractual conditions, aggravate the final costs to the Employer, without relation to the actual value of the completed works.

The encountered situation of contracting without a procedure of competitive bidding, as it was the case for GoG funded projects prior to the period or when approving repetitive variation orders on those same projects during the period, is obviously inadequate to establish the lowest market value of the works. As the record shows, this procedure has also generated the worst conditions in contractors delays and variation orders. The financial incidence of these conditions are shown in global figures shown in Chapter 3.4. This proves that in the contract management performance, the procurement phase is the first step to create a healthy contractual relationship where the Employer's side can play a pro-active role in the final success of the project.

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Beyond the financing costs cited above, it is noted that, especially for GoG wholly funded projects, a high number of variation orders are being further contracted to complete or add to the original scope of the work. The causes for these variation orders include:

- ▲ The insufficient level of preparation of the studies. This aspect was mentioned above and can only be tackled by a phase of comprehensive review of the studies to bring them at a level of the "Good for Execution" status. This is associated with a perfect knowledge of the site conditions, especially the conditions susceptible to fundamentally alter the original design, such as the bearing soil's characteristics.
- ▲ The lack of foresight of the implementing agency, at the project management level, in the prevention of expected technical problems or contractors difficulties. Prevention should be a daily concern of Engineer's Representative to effectively control and direct the contractor's progress through any work condition.

3.4 The arrears payment situation

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 % 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 million². 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.

² 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).

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The arrears problem according to Winston & Strawn (W&S)³, legal specialists, who were hired by the MRT to look into the problem, is presented in Box 5.3.

Box 1 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.

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 2000⁴ 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\$ 46.70 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 Progress Report Winston & Strawn, January & February 2000.

⁴ Arrears Payment Report, Republic of Ghana, January 2000.

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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 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 programme⁵, arrears payments including interest are estimated at US\$ 97 million (2000), US\$ 100 million (2001) and US\$ 51 million (2001). 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.

Donors' interaction

It is a fact that each financing institution tends to apply their own level of assistance and control in the process of their contracted programmes, in accordance with their own objectives and policies.

The use of different reporting systems and supporting documents and procedures in procurement are considered cumbersome by GHA. However, they are practicalities and satisfactory compliance is recognised by Donors. DUR has not encountered this problem as most of the funding has been provided through GoG funds and The World Bank. The supporting documents are those of The World Bank with General Conditions from

⁵ Road Sub-sector Investment Programme (RSIP), Ministry of Roads and Transport, March 2000.

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FIDIC. DFR, dealing with various financing institutions, does not consider the implementation of different procedures as a difficulty.

It is more essential that the donors' interactions be concordant in the consideration of the implementing agency role, its limits and clearly defined authority in their contract management functions. A common view on the objective of empowering the agencies in their contract management functions, coupled with the setting of a real accountable organisational structure, would progressively contribute to better results in the implementation of the principle of "value for money". Suggestions are stated in Chapter 5, treating the Way Forward. As the donors' role shows positive results in their own funded projects performance, the donors are in the position to promote the setting of a perennial managerial structure able to effectively insure contract management in any situation of financing.

Supported by donors' contribution, concrete achievements were made in the setting of performing managing tools. Progress was made while improving the contract management capacity in different ways:

1. The acquisition of a computerised information system, the Contract Management System (CMS), a valuable tool to effectively monitor works progress and financial evolution.
2. The establishment of an Accounting and Management Information System, performing but underemployed.

The co-ordinated assistance from donors would be valuable in reaching the next level by helping agencies adapt their own structures to the requirement of the contract management functions, and assisting them in progressively departing from the mere administrative and currently somewhat less than authoritative action.

Continued assistance in the pursuit of an ideal legal framework will lead agencies to a recognised system of procurement that will eventually inhibit detrimental interference in the overall process of contract management.

4 EVALUATION

4.1 Relevance

The stated objectives of the Policy Letter address the needs for better control and management of expenditure, as severe imbalance between the availability of resources and committed expenses was recognised as the most acute problem to be solved. The same Policy Letter mentions different sub-objectives to prevent future recurrence.

First, it is necessary to further define the limits of construction management functions. The initial acceptable level of commitment of funds to enter into a contract is an attribution of the Owner and an executive decision with regards to overall planning, allocation of resources and objectives of policies which do not pertain to the contract management function.

However, the contract manager contributes by providing estimates that define budget requirements, and obviously, the accuracy of the estimates is the key factor in the definition of a sound budget. Another early contribution is at the stage of procurement; when the construction manager has to lead a transparent process and exercise his expertise in a fair and thorough evaluation of the tenders. In both of these contributions, the Owner's decision must rely on the assumption of a competent advice on the estimate and on the best overall tender.

Beyond these decision stages, the contract manager is in charge of all controllable factors in the optimisation of value of the given resources, from contract execution to final acceptance of the works.

Except for the improvements in maintaining and updating a reliable registry of contractors, during the period 1996-2000, the achievements in the contract management function have mainly applied to the works execution phase.

The installation of a Contract Management System (CMS) and the establishment of an accounting and management information system (managed by AMISU) are the most relevant contributions in the search for improving contract management performance. Good management decisions will derive from a reliable and fast response for information.

Important components in the search of unified contract management procedures are the Operation Manuals (MOM, SOM at GHA; PMs at DUR), including the adoption of standard Progress Reports by all supervising entities.

The steps taken in the process leading to a national procurement code are very relevant as, at the construction management level, they emphasise the basic values of transparency, fairness, economy and efficiency in a process that is dominant in the setting of respected contractual relations. The whole process will tend to ensure constancy in procedures and create confidence in the public procurement system.

Less relevant to the stated objectives, is the reporting of periodic activity of each agency by the MIS department of MRT. The information gathered, although updated monthly, is oriented towards a more general purpose of having a general overview of the periodic

progress of each agency, and is somewhat less relevant to contract management application.

The current survey on unit prices, statistics and uniform practices in measurement methods also leads to a better knowledge of market conditions and may lead to better founded decisions at budget or procurement levels. The research is relevant as it remains a long-term goal whose results will not bring management benefits in the near future covered by the programme. The information on unit prices is also a review *a posteriori*, and the results will always be arguable by conflicting parties unless based on statistics.

4.2 Effectiveness and sustainability

The objectives, which constitute the reference, are of a different aspect. The general objective is to regain discipline in the management and control of expenditures.

The predominant concern was solving the arrears payment situation through accelerated completion or termination of projects and reduction of the number of contracted commitments while the arrears payment situation remained unsolved. At the end of the period, the arrears payment has actually worsened. One of the reasons is obviously the effect of the cumulated interest due on unpaid amounts, but also the net value of unpaid completed works has substantially increased compared to the 1996 situation. This shows that the contract management structure has been deficient in implementing in practical terms the dispositions of prioritisation leading to a quick completion of the major contracts.

The control of expenditures during the projects implementation shows ineffective results as, in a sample of 6 contracts relating to GoG-funded projects signed after the date of the objective statement, two still show a variation orders incidence far above the limit of 25%.

Efforts have been noted in the implementation of the recommendations by Trett Consulting, but the volume of arrears payments remains important. The situation results from an organisational deficiency in getting the executive decision properly transferred through a responsible structure where each level of authority has its role and is accountable for it. Where a minimum of management control was exercised, such as through the overseeing and the no objection requirement from donors, the results are clearly better in containing costs and delays.

Management tools considered as relevant achievements in the setting of a performing managing structure have not been used for their full purpose. Destined to provide the decision-maker with the information not only to monitor, but to draw and translate the information from it, in order to eventually orient the decision process and then provide a control system on the effective implementation of the derived options. For the particular case of the AMISU contribution, the effectiveness appears optimal in the accomplishment of its mission. Unfortunately, the system has a limited effect as it only applies to the portion of management of funds financed by only a few donors.

Therefore, the tools such as the CMS, the accounting and management information system while enhancing the capacity of the organisation, have remained somewhat

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ineffective because it has not been a reference in the process leading to actual implementation of orientations decided at the executive level.

Other positive dispositions in the standardisation of reporting and internal relations are recent. They constitute a good framework for a mechanism of communication of the information, capable of providing support for management decisions. Their effectiveness will also be measured only after their uniform and mandatory compliance. This step seems to be adopted, at least for the consistent and pertinent periodical reporting from sites operations by consultant supervising entities.

When assessing the overall effectiveness of the actions taken during the period, two remarks can be added. First, the actions taken, though positive, are not sufficient to reach the agreed objectives. Secondly, as further contractual commitments were approved and engaged by the Employer, this decision can be interpreted as a consideration of other objectives than those stated, and an interference in the programme implementation.

Procedures in financial management also undergo interference in their effectiveness. The Budgeting process is in place at the planning level, but is insufficiently updated to prevent the effects of temporary shortfalls. The disbursement procedure is ineffective because of the interference in the approval process of authorities which are not part of the contractual relationship and are uncontrolled by the contract management structure. Supporting records are incomplete to sustain a recurrent auditing system on procurement of GoG funded projects. As functional relations are since recently embodied in articulate manuals, the opportunity exists to establish a function of internal auditing system able to report on its application on a permanent basis and organise the proper recording of documents whatever the financing source.

The mentioned steps relating to the acquired equipment and information systems put in place during the period are permanent improvements likely to provide benefits beyond the programme. Their capacity exceeds the current needs and their design will still apply to foreseeable future volume of contracts.

The structure providing the accounting and management information system is temporary. In order to reach the sustainability of the achievements of the system, the organisations must integrate this function. The key element in the viability of such an adaptation is to allow the system to keep on operating in a responsible and independent basis in carrying out its mission.

Other dispositions in the contract management, such as the standardisation of internal procedures and the setting of unit pricing code and statistics, are sustainable in the future although to be reliable assets, they will need to be kept updated through controlled supervision.

Globally, the actions that have been taken in improving contract management operations are at different levels and are effective tools able to assist an organisation in its management operations on a sustainable basis. As tools however, the effectiveness of their input is highly dependent on the will and the real capacity of its user to direct the outputs of the contracts by controlling the respect of all conditions and maximising the value to the Owner.

4.3 Efficiency

The actions taken during the period in the field of contract management have been described above. Their outputs primarily concern the production of relevant information on contracts' progress and general status. In carrying out this function, the resources in place seem efficient in providing timely information. The accuracy of this information remains to be audited. At a more general level of measurement, the efficiency of the system in place compared to the eventual incidence of managerial decisions resulting from the system are more questionable. However, distinction must be made in the case of donor-funded projects, where the sample of reviewed contracts shows results denoting a more efficient consideration of the tool outputs.

When evaluating the efficiency of the contract management organisation and their procedures, the difficulty lies in measuring the actual involvement of the resources in the institutional environment that is the one of the implementing agencies. As per their traditional structure of public organisations, the involvement at different level is a contribution to the decisive power of the Direction. The job descriptions are clear but the responsibility of the duties are shared by a staff whose area of competence is the criteria for his contribution. In such a structure, the input of a particular component is not readily apparent and its efficiency measurable. Globally, as donors funded projects show by their results, minimal constraints on management have positive effects, but GHA recognised that donors' regulations are cumbersome. This situation is caused by the fact that contract management remains reactive and does not apply through a multi-level decision making process able to responsibly accomplish its duty and solve problems relevant of that decision level.

The output of construction management practices is also difficult data to evaluate. Obviously, budget overruns, delays, and cumulated arrears payments are signs of poor management, but good results may also relate to excessively comfortable budget provisions, which do not induce the pursuit of maximising value to the Owner.

Procurement procedures for donor-funded projects are supported by well-established methods and applied efficiently as far as reviews by donors assert.

Disbursement procedures are inefficient and are a major cause for high unit prices. The contract terms and conditions include the application of interest on unpaid approved works as a penalty, adding to the already high price of the works. The incapacity of the organisation (employer plus contract manager) in applying its own regulations tends to make an inefficient situation acceptable and demotivates a true managing attitude towards the contractor's position.

5 LESSONS LEARNED

5.1 During the period 1996-2000, definite and positive steps were taken in the search for better contract management. As a reminder, the following improvements can be mentioned:

- ▲ The addition of valuable information systems such as the Contract Management System, in use in GHA.

The system's potential is more than adequate and if the results of its performance are somewhat disappointing it is likely caused by the lack of interactions with the project management side of GHA activity. It is indicative that the recently published Site Operation Manual dealing with essential contract management procedures actually ignores the asset of this equipment. Currently, Principal Engineers are in charge of monitoring and collecting relevant data.

- ▲ The mechanisms put in place such as the MIS section of MRT in charge of reporting the activities of all agencies on a monthly basis.
- ▲ The AMISU unit with a focus on financial data and pro-active assistance in cost-control management.

Note: We have been informed that, in the year 2000, it was decided to phase out the AMISU operations to integrate its functions inside each agency. The phase-out period included 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.

- ▲ The systematisation of procedures within agencies through the publication and updating of manuals: Site Operation Manual and Maintenance Operation Manual for GHA (May 2000) and Project Manuals for DUR.
- ▲ The standardisation of periodical progress reports. Samples reviewed for 16 projects underway demonstrate the good quality and the thoroughness of the information.
- ▲ The pursuit of harmonisation of public procurement principles through a public procurement reform, leading to a unified code.
- ▲ The efforts made to establish a coherent system of unit prices statistics and survey.
- ▲ Maintain and improve a reliable registry of contractors.
- ▲ Give up the practice of single source negotiated contracts on GoG-funded projects, even if variation orders were still granted for such previous contracts.

These dispositions are effective management tools and sound contributions to constitute a solid support to implement actual management procedures.

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The overview of the contract management situation of major stages of the project cycle from procurement to works completion, brought up some findings that call for comments and recommendations for improved contract management implementation.

It is also necessary to make a distinction between the recommendations in accordance with the organisations of the agencies, as the autonomic status of GHA may lead to suggestions less relevant to the MRT integrated agencies (DUR and DFR).

GHA

5.2 It is reported that the use of different procurement procedures associated with each donor's guidelines, although satisfactorily carried out, constitutes a cumbersome situation in the agency. A way to tackle this situation is to define within the organisational structure a specific procurement unit in charge of handling the procurement procedures. This unit would advantageously perform all procurement management functions inside the agency, by being familiar with the different credit agreements and being able to lead the interactions with the financing institutions for that particular phase of the contract management. This would help in expediting and maintaining appropriate records of the different steps of the procedure, which is not currently the case.

5.3 When related to procurement method by single source negotiated contracts, the results, as they are shown for a selection of contracts in Appendix C are patent, and make unsustainable any claim of efficient economically motivated decision. Another implication of this mode of selection is that when the contractor's nomination is beyond the control of the implementing agency, or does not result from its own recommendation, it undermines the managing power of the agency. Indeed, during the course of the works, as the contractor may feel that, in case of conflict, he can easily override any of the agency's action with an intervention through the top authority, which actually selected him in the first place.

5.4 When it comes to the crucial phase of finalisation of the studies co-ordinated by the Planning Division, the process involves the engineering staff to oversee the quality and completeness of the design and the related specifications. This type of intervention is performed more in a spirit of co-operation rather than in accordance with an accountable system of responsibility. The importance of the level of quality of the studies seems underestimated. For instance, this phase is not supported by full soil investigations or by a value engineering effort, leading in some cases to incomplete or inadequate studies with regards to local conditions of market supplies, technologies and workmanship. Any deficiency in the studies is an additional source of claim and variation orders and cause of major managerial efforts during the execution phase creating further distortion in the construction management, overly mobilised in the problems solving circumstances rather than in the foresight and search of optimisation of resources.

5.5 During the construction phase, GHA should consistently act as Engineer of the project, acting on behalf of MRT, the Employer. In order to formalise the process of management through contractual relations; it would be beneficial to begin with the set-up of a contract between GHA and MRT, either per project or for a well-defined programme, in which mutual rights and obligations of the parties would be clearly delineated.

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5.6 In relation to the accounting and financial management, the role of AMISU on a limited number of projects has been noted. The review of procedures, the quality of reports and the performance in the efficiency of handling the information makes the unit a solid management tool in the service of MRT and GHA. It would be beneficial to first expand its role up to the original intent and, in the effort to adapt the GHA structure to a more responsive and responsible contract management; then, secondly integrate such a structure into each implementing agency. This would allow for an efficient co-ordination between the collect of accounting data from the job sites, the handling of accounts payable, the accounting of disbursements and the interactions relevant to financial matters with the donors. The integration of the AMISU competence and know-how would allow for simplified internal payment approval and reporting procedures while avoiding duplicate controls. An interconnection between information systems would also constitute the basic source to set up an actual budget forecast system and provide the information not only for monitoring purpose but also for proactive management and timely decisions.

5.7 As a specific concern, the issue of the apparent high level of tendered unit prices and overall cost of completed projects, has been mentioned. To avoid or reduce the effects of the stated causes, the main actions to remedy these would include the following:

- ▲ Carry out only fully guaranteed funded projects. This is an Employer's obligation to commit to this situation.
- ▲ Establish a performing payment approval system and timely disbursement procedures. This function is relevant to contract management procedures and should be in the implementing agency's power to achieve. Institutional dispositions should allow the agencies to fully control this operation.
- ▲ Totally avoid any procedure of procurement through sole source negotiation.
- ▲ Improve the quality of studies.
The organisational structure of the agencies should establish a specific function for the management of the review of the studies. Accountability of the studies reviewing and final acceptance would be tested upon each variation orders occurrence.
- ▲ Increase responsibility and power to the agency's project management function.
As judiciously stated in the Site Operation Manual, the Engineer's Representative has to combine engineering and managing competence. This concept adds value and responsibility to the function and should be supported by appropriate dispositions enabling the agency to measure and reward the success of better management. When an Engineer's Representative is a consulting firm contracted for the works' supervision, the pro-active actions in contract management would remain the agency's responsibility through a designated "project manager", furthermore in charge of the control of the supervising firm's performance.
- ▲ Establish as a project manager duty to maintain the control on future works phases, anticipating variation of quantities (through permanent survey). The agency's project manager should be closely kept informed by the contractor, of short term detailed works schedule, and phases of works execution to detect in advance any unexpected condition susceptible to affect the cost or schedule conditions.

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5.8 The issue of the arrears payment was also addressed in a specific chapter analysing the conditions bringing this difficult situation. Beyond the basic principle of awarding only projects with a guaranteed budget, contract management functions need to insure a tighter control on the following factors susceptible to alter the level of the financial commitments:

- ▲ To diligently proceed with interim payments through a simpler procedure of approval, involving only contracting parties.
- ▲ Establish a periodical budget forecasting process, under the responsibility of the project manager, anticipating future contracts' evolution of costs and scheduling in accordance with actual progress and site conditions. This would quantify the level of success of the project as a whole, and would allow timely funding adjustments if needed.
- ▲ Improve the quality level of studies and their level of completion to strictly limit the incidence of contingencies during the course of the works.
- ▲ Improve the level of accuracy of the estimated quantities taken as reference in the contract documents to limit any unreasonable variation with the executed quantities within the same scope of work.
- ▲ Establish and strictly enforce quantified limits on any revision of the scope of works. The Policy Letter states a limit of 25% of the original contract amount, as an acceptable but maximum level of variation in orders amount.

This allowance is already comfortable and as a guide, it would be advisable to subdivide it in components according to the nature of works modifications. Contingency situations for unexpected circumstances should not exceed an incidence of 10% and variation in quantities (for the same design) should not exceed another 10%. Combination with additional works judged to be beneficial to the whole project should therefore be contemplated only with the total 25% ceiling. Any type of variation orders should only be considered a contractual commitment after full control of updated financing conditions. It should also be mandatory that, in any situation susceptible to bring a contracted amount at a level exceeding the 25% mark for contingency or technical reason, a new tendering process be adopted.

- ▲ Consider any delay in the execution as a legitimate reason for variation orders when the delay is justified in the Employer's point of view. The incidence of delays is measured in monetary terms per the contract conditions and is subject to the same budget control procedure. When unjustified, the contract manager must apply the application of liquidated damages. The qualifying conditions for justified delays are quite explicit in all general contract conditions in application with the agencies.

5.9 All the above recommendations are relevant to the contract management performance. They can however only be enforced by an appropriate organisational structure effectively empowered to carry them out, and where each level of authority is accountable for the policy implementation.

Currently, we can see that the management functions are performed in a context of the internal relations and attitudes inherited from the "force account" era.

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It is however quite fundamentally different as an approach to management, to administrate its own crews and resources in a spirit of co-operation in the interest of its own employer, than to manage a contractual situation where the counterpart is obviously motivated by its own interest, and where the exercise of control and management is to be performed in a confrontational attitude.

Because of this principle, the Contract Manager must be in a position to relate to the Contractor in an equal position of responsibility. The contract managing structure should reflect the dispositions of a decision making process, where each level of authority is accountable, within the limits of its duties, for the policy implementation.

The autonomous status of GHA allows this structural adjustment. Ideally, this setting should be supported by the appropriate empowerment measures to project GHA as a responsible agency as a whole, with rights and obligations embodied in a contractual relationship with the Employer. Such measures would include:

- ▲ The attribution of the Engineer, as technical expert.
- ▲ The management of the funds dedicated to a particular project or programme (and therefore the full management of accounts payable and disbursements), including the management of its own operating costs, funded as administrative costs prorated on the contracted amounts to manage.
- ▲ The attribution of representing the Employer in an arbitration procedure, yet to be defined, in case of litigation with contractors.

This setting would be the fundamental step that at the staff level, will trigger a change in attitude from contract administration to contract management.

5.10. The way forward in that respect would be to assist in the implementation of these principles through the actual key decisions with a temporary and pro-active assistance in conducting contract management functions within the organisation. This would be fruitful after a phase of adaptation and revision of the decision making process while promoting accountable and responsible level of authority.

DFR and DUR

5.11. For these agencies, the basic principle leading to an effective contract management function remains the implementation of the adequate managing mechanisms taking into account the current status as MRT's Departments and the involvement of regional authorities in the managing process.

Currently in the contractual relations, DUR establishes itself as the Employer's Representative and delegates the full Engineer's power to the consulting firm designated to perform the works supervision. Such a reliance on a consulting firm is not advisable in the search of optimising the resources. The works supervision is an assignment defined to best protect the Employer's interest, and that assignment should be supervised and evaluated by the implementing agency.

5.12. As per DFR and DUR, the managing functions are clearly decentralised, and apply to a large number of relatively small projects, the decision process is also largely distributed and apply on correspondingly less consequential matters.

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5.13. Positive steps to install effective managing mechanisms would also include some dispositions suggested above, such as the integrated action of AMISU in accounting, reporting and account payable management practices, and reflect in internal procedures, the actual authority attributed to a staff member, designated project manager of each specific contract.

5.14. Organise DUR/DFR Headquarters as a ministerial function only relating to planning, budgeting, regulating, and training, along with an engineering staff working as an internal technical expert, able to assist all regional units and approve designs.

5.15. The way forward in order to assist in the implementation of contract managing functions would be associated through training session increasing motivation and management attitudes in the most encountered situations on job sites of the magnitude applicable to DFR/DUR projects.

SUMMARY OF FINDINGS AND RECOMMENDATIONS AS A WAY FORWARD

5.1. Steps taken during the period to improve the Contract Management conditions:

- ▲ Installation of a C.M. System
- ▲ MIS operational at MRT
- ▲ Efficient AMISU contribution to management
- ▲ Operation Manuals (MOM, SOM at GHA; PM's at DUR)
- ▲ Standardisation of Progress Reports contents
- ▲ Active process of procurement reform
- ▲ Unit pricing survey and statistics
- ▲ Active updating of contractors registration

WAY FORWARD ACCORDING TO AGENCIES

GHA

- 5.2. Create a procurement unit
- 5.3. Avoid single source negotiated contracts
- 5.4. Improve quality and completeness of studies and designs
- 5.5. Establish GHA as the Engineer with a contract with MRT
- 5.6. Extend role of AMISU
- 5.7. Fight high prices by:
 - ▲ initiate only full funded projects
 - ▲ simplify payment approval procedures by involving contractual parties only
 - ▲ avoid single source negotiated contract
 - ▲ improve quality of studies
 - ▲ define and empower a Project Management function
 - ▲ prevent variation orders by PM actions
- 5.8. Prevent arrears payment situation
 - ▲ diligent payments
 - ▲ adopt budget forecasting process
 - ▲ limit contingencies through better studies
 - ▲ improve accuracy of quantities estimates
 - ▲ limit variation orders occurrence: conting. < 10% vari. of quant. < 10%
additional works such that $\Sigma < 25\%$
mandatory re-bidding when $\Sigma > 25\%$
 - ▲ apply variation orders procedures to delay incidence
- 5.9. Adapt organisational structure
 - ▲ delegate authority at each level and adapt organisational chart
 - ▲ establish contractual relationship MRT - GHA
 - ▲ Add extra attributions Engineer as technical expert
Exercise full accounting/financial management
Represent Employer in arbitration procedures
- 5.10. The Way Forward for GHA

DFR / DUR

- 5.11. Maintain Engineer status
- 5.12. Delegate project management power to regional units
- 5.13. Retain only ministerial actions at headquarters: planning, budgeting, training, regulating,
- 5.14. Integrate AMISU
- 5.15. The Way Forward for DUR/DFR

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17. 1999 Annual Report of the Ministry of Roads and Transport, February 2000.
18. Site Operations Manual, Ghana Highway Authority, March 2000.
19. Trett Consulting Report, November 1998
20. Progress Report for Feeder Roads, DFR, June 1999

Appendix B List of Officials met during the evaluation

- 1. Ministry of Roads and Transport**
Mr. Abbey Sam, Chief Director
Mr. J.L. Lamptey, Director, Mission Coordinator
Mr. A.G. Beckley, Road Programme and Donors Coordinator
Mr. J.B. Korateng-Yorke, Assistant Director
Mr. Boakye-Yiadom, MIS
Mr. Ofosu-Dorte, General Law Group, Legal Consultant
- 2. Ghana Highway Authority**
Mr. B.L.T. Sakibu, Chief Executive
Mr. F.Y. Addo-Abedi, Deputy Chief Executive
Mr. Swanzy-Baffoe, Director of Contracts
Mr. Adjapong, Director of Planning
Mr. M. Ahadzi, Quantities Manager
Mr. S.B.K. Bonsu, Director of Road Maintenance
Mr. G. Popely, Consultant
- 3. Department of Feeder Roads**
Mr. A. Twumasi-Boakye, Deputy Director
Mr. J. Klu, Principal Quantity Surveyor
- 4. Department of Urban Roads**
Mr. L. Hesse, AG Director
- 5. AMISU Consultant**
Mr. A. Amoah, Director
- 6. The World Bank Ghana Office**
Mr. G. Tschannerl, Principal Engineer
Mr. Mbuba Mbungu, Procurement Specialist
Mr. S. Halgrimsson, World Bank Headquarters
- 7. European Union Delegation**
Mr. R. De Raeve, First Secretary
- 8. Ghana Institution of Engineers**
Ing. Amponsah Ababio. Executive Secretary
- 9. Ghana Road Fund Secretariat**
Mr. Charles Mensah, Accountant

Appendix C Overview of a selection of GHA managed contracts status

1. GoG 100% Funded Projects

2. GoG and/or Donors Funded Projects

ANNEX VIII-CONTRACT MANAGEMENT FOCUS

OVERVIEW OF A SELECTION OF GHA MANAGED CONTRACTS STATUS

1. GoG 100% Funded Projects

Project	Contractor	Start of Contract Schedule	Contract Works Duration	Time Elapsed (Mos)	Time Elapsed (%)	Works Compl. (%)	Contract Amount	Approved Variation-Orders	Var. (%)	Remarks
Kpandu-Worawora-Dambai Phase 1	Bielfinger+Berger (Germany)	02/07/98	36 mos	21 mos	58.3%	51.9%	\$28.0M	0	0	Cumulated interest due to date for late payment: \$292.4K
Bawdie-Asankragwa	Eagle Star	10/06/96	24 mos	49 mos	204%	76.9%	¢ 12.766 B.		110%	
Wa-Bole-Bamboi Phase III	P&W Ganhem	12/10/95	48 mos	54 mos	112.5%	75.8%	¢ 34.9 B.	¢ 3.03 B.	8.6%	New contract after phases I & II to same contractor
Ankaako-Wawase-Tifu Praso	K&E	01/02/89	9 mos	133 mos	1,477%	100%	¢ 292.96 M.	¢ 7.193 B.	245%	V/Os extended shedule to 97 mos. Substantial completion granted on Jan 2000
Twifu Praso-Assin Fosu	K&E	30/06/96	18 mos	45 mos	250%	53.86%	¢ 6.734 B.	under review		Expected large variations in Quantities
Twifu Praso - Dunkwa	K&E	02/09/96	18 mos	40 mos	222%	75.4%	¢ 10.230 B.	¢ 240.174M	2.34%	Addition of a bridge
Biriwa-Takoradi	CPC Constr.	24/07/98	24 mos	20 mos	83%	63.1%	¢ 29.5 B DM 49.4 M.		55%	Huge variation in quantities expected
Obuasi Town Roads	Limex	25/03/97	24 mos author. to 42	48 mos	114%	72%	¢ 15.212 B.	¢ 1.19 B	7.8%	Vos bring schedules to 42 mos. Works suspended unilateraly by contractor.
Priority Bridge Development Phase II	Mabey & Johnson	01/02/96	32 mos author. to 47	48 mos	102%	99.5%	¢ 18.163 B.	¢ 342.6 M.	1.88%	claim for ¢97.318M, delayed int. ¢3.085B; paymt arrears: ¢9.783 B
Kintempo-Tamale-Makango	Taysec	28/08/84	36 mos	182 mos	505%	60.9%	¢ 161.4 M £ 9.346 M.	¢ 15.994 B. £ 69.836 M	99% 747%	18 var. orders current schedule of completion undecided

ANNEX VIII-CONTRACT MANAGEMENT FOCUS

OVERVIEW OF A SELECTION OF GHA MANAGED CONTRACTS STATUS

2. GoG and/or Donors Funded Projects

Project	Contractor	Start of Contract Schedule	Contract Works Duration	Time Elapsed (Mos)	Time Elapsed (%)	Works Compl. (%)	Contract Amount	Approved Variation-Orders	Var. (%)	Remarks
Anwiankwanta - Kumasi Prjct	KS-JV Daewoo	01/12/98	24 mos	13 mos	54.17%	50.45%	¢ 17.5 B. Y 1.55 B.	0	0	GoG + Japan Bk of Int'l Coop.
Gyato Zongo - Yeji	Interbeton	16/03/99	38 mos	10 mos	26.3%	24%	¢ 12.959 B. Dfl 78.625 M.	0	0	GoG + UK + Netherlds 4 mos immobil incl.
3 Bridges on Tapa-Goaso Rd. Rivers Kusu, Tano,Go	Kasap	10/05/99	42 wks	29 wks	69%	16%	¢ 1.527 B. \$1.653M	0	0	
Awaso-Nobekaw	Mota & Companhia	09/01/97	36 mos w/author. ext. to 43 mos	38 mos	94.7%	77.4%	¢ 29.817 B. (¢ 15.944B + E 13.965M).	¢ 317 M.	1.06%	GoG + EU 4 V/O + 1 bridge total projected amount : ¢ 41.3 B.
Nobekow-Bediakukrom	Mota & Companhia	09/01/97	36 mos w/author. ext. to 43 mos	38 mos	94.7%	96%	¢ 26.836 B.	0	0	EU variations in earthworks quantities: 6.4% overall plus price var.
Constr. of 6 bridges	Al-Khodari	01/05/99	78 wks	52 wks	67%	var. per bridge	¢ 7.337 B. \$4.686 M.	0	0	Arabian Bk

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1 INTRODUCTION

1.1 Contents of evaluation group

This group includes the remaining evaluation issues, viz. environment, safety and non-motorised transport (NMT). The evaluation fields¹ that are covered in this group are the following:

Environment and safety	Awareness of environmental impact/capacity to evaluate environment impact. Awareness of safety impact/capacity to evaluate safety impact. Re-organisation and strengthening of the road safety administration.
Non-motorised transport (NMT)	Progress in developing and promoting non-motorised transport.

1.2 Relation to other evaluation groups

The environment and safety sub-group is related to the organisational group (for institutional and legal issues), the technical group (technical aspects, in particular axle-load control) and the financial-economic group (financing of the organisations involved, as well as financing of the safety and environmental measures). These issues are dealt with in the respective evaluation groups.

Non-motorised transport is mainly related to the policy-donor group as NMT has a potential impact on poverty reduction and gender impact. More details on this linkage can be found in this annex.

¹ The evaluation fields correspond with the scope of work elements, as defined in the Terms of Reference.

2 OBJECTIVE OF EVALUATION GROUP

In this section the objectives of the relevant aspects covered in this evaluation group are presented. The objectives presented below are a combination of the text taken from the February 1996 policy letter and the scope of work as defined in the Terms of Reference. The two combined can be regarded as the starting point for this evaluation.

2.1 Environment

Policy letter

Environment assessment: the Government is mindful of the need to take potential environmental impacts of road projects into account and to use this information in consultation with the Ministry of Environment. First, Government will carefully monitor design and implementation of elected road projects which might have considerable environmental impacts. Secondly, based on this hands-on experience and available documentation on the environmental impacts of road projects, Government will prepare guidelines for environmental considerations to be taken into account in design and implementation of road projects, and will also prepare training courses based on the guidelines. All concerned staff in the road agencies will be exposed to the training courses, and consultants will also be invited to participate.

Terms of Reference

Assess the efforts made to increase awareness of the environmental impact of road projects and to increase the capacity of the road agencies to evaluate the environmental impact.

2.2 Safety

Policy letter

The Government is in favour of encouraging private sector initiative, reorganising public sector organisations to make them more effective and efficient, 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 have 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 control and road safety. First, Government intends, within two years, to expand weight controls on all major roads by utilising weigh bridges at key road locations, ports, production centres, key border crossings and cocoa, wood and log collection centres. The Government also intends to explore the feasibility of having weighbridges operated under contract by a private company. Secondly, 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 Roads and Highway Act, and will provide modest funds to the Committee through the restructured Road Fund.

Terms of Reference

Assess the efforts made to increase awareness of the safety impact of road projects and to increase the capacity of the road agencies to evaluate the safety impact.
Assess the re-organisation and strengthening of the road safety administration based on existing data on the road safety situation.

2.3 Non-motorised transport

Policy letter

The GoG is committed to continuing its support for NMT initiated under ongoing 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.

Terms of Reference

Assess the progress in promoting and developing NMT.

3 OVERVIEW OF PERIOD 1996-2000

3.1 Environment

Introduction

All road development has environmental impacts, ranging from soil erosion to interference in animal and plant life. At the start of the Highway Sector Investment Programme environmental management in the road sector was still weak, but avoidance or mitigation of the environmental impacts received increasing attention, both from the government and the donors, and as such it was included as one of the sub-objectives in the Policy Statement of February 1996.

Road environmental policy and legislation, and institutional framework

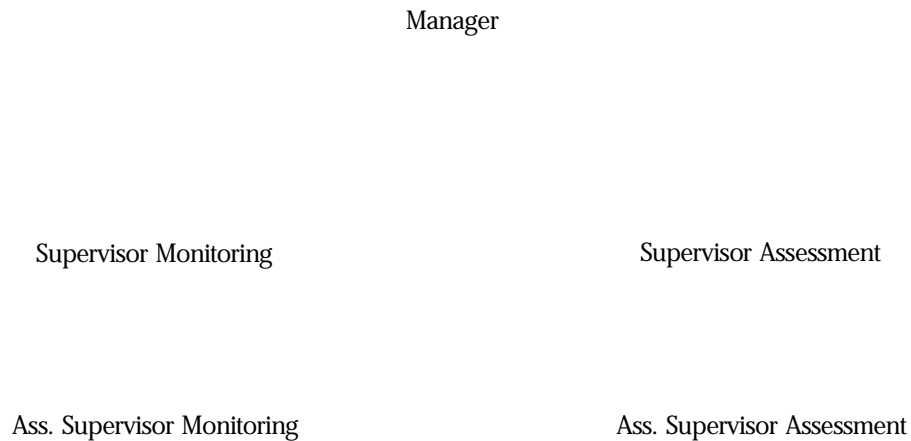
The overall environmental policy is outlined in the National Environmental Action Plan (NEAP, 1991). The Environmental Protection Agency (EPA) is responsible for ensuring the implementation of environmental policies. Its role and legislative position is specified in the Environmental Protection Agency Act (Act 490) of 1994.

EPA has, amongst others, to ensure that development projects comply with environmental assessment procedures and to issue Environmental Permits. In first instance EPA used general guidelines for environmental assessment impact and these were formalised in the Environmental Assessment Regulations (L.I. 1652), approved in 1999. These regulations require prior environmental impact assessments of investments, and the procedures, timing and requirements of these assessments are well defined. In addition, EPA has to ensure that the environmental assessment is properly implemented. For this purpose EPA Headquarters has to review reports and Environmental Impact Assessments (EIA) and to approve Terms of References for studies, and the regional EPA offices monitor and check implementation. Funds and manpower for these activities are insufficient, and especially the regional EPA offices play only a marginal role in the EIA process and the environmental management of road projects.

According to these regulations road construction projects need a full EIA in order to obtain an Environmental Permit. It is unclear whether these are also required for maintenance and rehabilitation/reconstruction of existing roads. As judged by the Danida contractor working for GHA (see also next section) the current EIA procedures in Ghana are generally adequate.

In the road sector, increasing awareness can be observed for environmental issues and road agencies have included environmental aspects in their mission statements. E.g. the mission statement of DFR includes "to mitigate the negative environmental impact of road schemes". On the other hand, the institutional framework is still in the development phase. In 1966 an Environmental Unit was established in GHA and in January 1999 this unit was placed under the newly established Road Safety and Environment Division (which in turn is part of the Development Department). The objective of the Environmental Unit is to reduce the negative impact of roads and bridge works by (i) supervision of EAI studies prepared by outside consultants; (ii) assurance that mitigation measures are incorporated in the road and bridge design; (iii) briefing of contractors prior to award of contract; (iv) monitoring the implementation and effectiveness of mitigation measures. The organisational structure of the Environmental Unit is shown below.

Figure 1 Environmental Unit GHA



The GHA Environmental Unit is headed by a World Bank financed consultant, but a new head has been appointed and will join GHA after completion of her thesis. The “supervisor assessment” is employed, but positions are still vacant as the Ministry of Finance is not approving the recruitment of new staff. The Environmental Unit has no recurrent budget and its operational costs are presently covered by the World Bank loan under HSIP.

DFR and DUR do not yet have Environmental Units, they have not assigned specific staff for environmental aspects, and the environmental management capacities of the agencies are negligible. The Ministry of Transport follows a gradual approach, by first setting up a well functioning unit in GHA before proceeding in DFR and DUR. Therefore, DFR sub-contracts for the time being to the GHA Environmental Unit, but as mentioned above, the GHA Environmental Unit is already understaffed.

EPA is responsible for the preparation of environmental guidelines, but due to heavy workload and insufficient staffing the guidelines for the road sector have been prepared by the Environmental Unit of GHA. In 1997 the draft guidelines were submitted to EPA for approval. This has still not happened and it is unclear why it is taking such a long time.

Actions undertaken in environmental aspects of road projects

By and large, in major donor projects, EIA is an integral part of the design of road works. A check of environmental aspects in some of the donor-supported projects led to the following:

- World Bank (HSIP): a report on environmental assessment has been prepared and was submitted in March 1995.
- Germany (HSIP), the feasibility study for the Tema-Aflao road. During the initial discussion phase of the project no major adverse impacts were identified and hence it was agreed with GHA not to include an EIA in the feasibility study. Instead, environmental investigations will be included in the detailed engineering design.
- Japan (HSIP), the feasibility study for Anwiankwanta-Yamoransa road (March 1999) did not contain a section on environmental impact.

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European Union: the pre-feasibility study for Trip III programme (October 1998) included a very brief section on environmental protection, but according to the head of the Environmental Unit the contractor also prepared a 20-page report on environmental issues (which was not officially submitted).

Denmark: for the Takoradi-Agona road (included in the Transport Sector Programme Support 1999-2003) a feasibility study was prepared in 1998. This study included an EIA.

Netherlands: the road projects in Ghana supported by the Netherlands were not financed from the regular assistance programme, but from the so-called "development relevant export transaction" programme. Projects in this programme are not subject to the usual process of detailed feasibility studies. Instead a broad assessment of financial and economic feasibility was prepared, including a very broad assessment of environmental impacts.

United Kingdom: in the feeder roads programme for DFR an Environmental Assessment will be included and funds have been earmarked for this purpose.

In addition, three donors have specific projects and programmes. In the first place the World Bank is active in this field. In the context of HSIP it was agreed that GHA would carry out a mitigation plan for the roads to be maintained and rehabilitated. Details of this plan can be found in annex 4-3 of the Staff Appraisal Report (April 1996). This plan focuses on institutional strengthening of GHA by financing a local expert and the operational costs. In particular the project aims at:

The establishment of the Environmental Unit in GHA, staffed with three engineers to assist with environmental assessment and monitoring, and to implement a training plan to ensure that environmental management is institutionalised in GHA: as mentioned above, this division has been established (although not all staff has been recruited yet), but awareness training of GHA has not been organised so far. In this respect it can be mentioned that in the annual reports of GHA nothing is said of the activities and outputs of the Environmental Unit.

Development of road-related environmental policy: GHA does not have yet a long-term strategy and policy, with a prioritisation of objectives and actions, and there are no procedures of screening and approving projects on environmental aspects.

Organisation of public awareness seminars: these hearings have been organised only incidentally.

Inclusion of environmental protection clauses in contracts, with clear penalties for non-compliance: this has not been done yet, but according to the head of the Environmental Unit in case of violation of the rules GHA has the possibility of not (or only partly) paying the contractor.

In the first years of its existence the Environmental Unit gave prime attention to preparing environmental guidelines (which are still awaiting approval of the EPA), to supervising EIAs and to monitoring implementation of mitigation measures: the Environmental Unit supervised EIAs carried out by contractors in donor-financed projects and it prepared some EIAs on government-financed projects; some monitoring has been done (although not on a systematic basis) and one road design has been reviewed.

The second project was financed by Danida. In 1999 the Transport Sector Support Programme was identified and this has an environmental component for GHA and DFR. The Danida project started in September 1999, with a one-year phase to identify specific needs for long-term support. In March 2000 a design for technical assistance in

the field of environment was prepared and this is currently being discussed with the government.

The third technical assistance project is being carried out by DFID in the context of the programme "support to rural feeder roads". The technical assistance of DFID for the environment consists of a total of 5.5 man-months and has the following principal objectives:

- ▲ Definition of the objectives of environmental management policies.
- ▲ Preparation of task descriptions for the environmental coordinator and the regional environment engineer (yet to be appointed, but this is a condition of support).
- ▲ Establishment of procedures for environmental management.
- ▲ Preparation of a sectoral EIA, together with an EMP, with a hands-on involvement of the responsible staff of DFR.
- ▲ Environmental awareness training of DFR staff and of contractors operating the Northern Region (under the DFID feeder road programme).

3.2 Safety

Introduction

Road safety is a serious problem in Ghana. It is estimated that road accidents cost about 1-2 percent of the Gross National Product and in comparison with other countries the road safety situation in Ghana is bad. Moreover, the impression is that the situation is worsening. The seriousness is increasingly clear to involved authorities and since 1988 road safety has featured prominently in policy discussions and in donor-assisted projects.

Road safety measures can be broadly grouped in education, encouragement, enforcement and engineering (the four Es). In all four fields there are problems: safety in education is virtually absent; encouragement (publicity campaigns) are not undertaken systematically; enforcement is ineffective; and engineering aspects do not get the highest priority in road design. Because this evaluation focuses on the road sub-sector the main attention in this reports will be given to road safety issues covered by the Ministry of Roads and Transport and its road agencies.

Road safety policy and legislation, and institutional framework

Several organisations are involved in road safety issues, mainly under the Ministry of Roads and Transport, but also some organisations outside the ministry (such as Building and Road Design Institute).

Ministry of Road and Transport

The Ministry of Roads and Transport has overall responsibility for road safety and under the Ministry several organisations are involved. This is firstly the National Roads Safety Committee (NRSC), which is the lead agency and charged with the task of formulating the national plan and co-ordinating with other stakeholders. Secondly, the Driver and Vehicle Licensing Authority (DVLA) and the three road agencies are involved.

National Road Safety Committee

The NRSC was established in 1959, and until 1990 was a commission under the Ministry of the Interior, while under the administrative responsibility of the Ghana Policy Service. The committee is constituted of representatives from various organisations and acts as

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think-tank and advisor in the field of road safety. It does not have a permanent secretariat and the committee's activities were in fact limited to infrequent meetings.

In 1988 a secretariat was appointed, consisting in first instance of staff seconded by the ministry and police, and with assistance of the World Bank projects TRP I and II (1988-1997) some equipment and vehicles were purchased. At that time it was also agreed upon to change the status of the "commission" into a "committee" so that it could be given a legal basis. This was finally implemented in 1999, when the National Road Safety Commission Act (Act 567) was approved. According to this Act the NRSC is responsible for co-ordinating road safety activities, including:

- ▲ Development of a database on road safety.
- ▲ Development of a long-term road safety plan and advice to the Ministry on road safety policies and action programmes.
- ▲ Coordination, monitoring and evaluation of road safety activities, programmes and strategies.
- ▲ Liaison and co-operation with all organisations to promote road safety.
- ▲ Undertaking of road safety education.

According to the law, NRSC will be governed by a Board, but as this Board has not yet been appointed so far little progress has been made in executing these road safety activities. In the Policy Statement of February 1996 it was mentioned that modest funding would be provided via the Road Fund, and indeed in 1999 and 2000 the Road Fund allocated relatively modest amounts, of respectively Cedi 200 million and Cedi 500 million.

It is the intention that the NRSC will act as the national co-ordinating committee and that regional and metropolitan road safety committees will be established implementing the campaigns and educational programmes at local level.

Driver and Vehicle Licensing Authority (DVLA)

In 1999 DVLA became the successor of the Vehicle Examination and Licensing Department (VELD). VELD was responsible for vehicle and driver examination, but it had very little equipment and testing stations. In the context of the World Bank financed TRP I and II programmes some testing stations were equipped and some vehicles purchased. DVLA consists of five departments: driver testing and training, vehicle inspection (of public service and heavy vehicles only; the private sector inspects light vehicles), administration, planning and statistics, and regional office department.

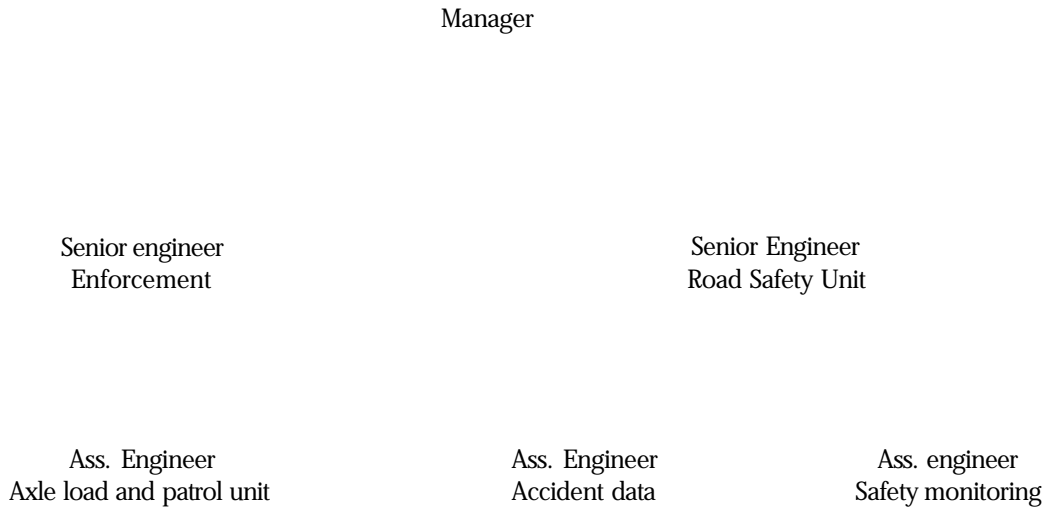
Road agencies

In January 1999 GHA established the Road Safety and Environment Division, with two units, viz. the Road Safety Unit and Environmental Unit. The Road Safety Unit has the aim to reduce the frequency and severity of motor vehicle crashes by improving the safety on trunk roads by:

- ▲ Improving physical characteristics of roads, which affect safety in the areas of design, engineering, maintenance and signage.
- ▲ Drawing up of programmes to enforce Road Traffic Regulations.

This is in line with the mission of GHA "to provide a safe and reliable trunk road network". The organogram of the Road Safety Unit is shown below.

Figure 2 Road Safety Unit GHA



At the moment only two of the five positions of the Road Safety Unit are occupied (principal engineer and audit engineer), because the Ministry of Finance does not allow the recruitment of new employees. Here it should be mentioned that staff trained at the beginning of the 1990s has been promoted to other positions.

The mission statement of DFR also includes road safety (“to ensure the provision of safe all-weather accessible feeder roads”), and it was anticipated that also DFR would create a road safety unit. So far this has not materialised. At DUR a Road Safety Unit has been established and at the beginning of 2000 an engineer was appointed as staff member.

It was also foreseen that the three road agencies would establish a special budget item earmarked for road safety measures. However, this has not been done.

Building and Road Research Institute (BRR)

The BRR is under the Council for Scientific and Industrial Research. BRR has seven departments, one of them the Traffic and Transportation Division. This is involved in: (i) collection, processing, analysing and dissemination of accident data (since 1989); and (ii) research, inter alia to identify and recommend improvement of hazardous spots (since 1965). BRR is also facing budgetary problems.

Activities undertaken in road safety

As mentioned above, after 1988 the attention for road safety increased. In that period the World Bank started TRP I (1988-1991), followed by TRP II (1992-1997). In addition, in the World Bank project Urban Transport Project (1994-1999) assistance was given to road safety for urban roads. The total funding over this period amounted to US\$ 2.1 million, excluding US\$ 0.6 million of technical assistance for TRP I (note: only TRP I had a separate technical assistance component). These projects focused on purchasing of equipment and vehicles for NRSC, VELD, GHA/DUR, GPS and BRR and on training of staff of these organisations.

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In HSIP no separate expenditures were foreseen for road safety, other than the funding of 12 man-months of consultancy for enhancing road safety on the trunk road network. The ToR of this assignment includes development of guidelines for and training of GHA staff in (i) design, construction and maintenance of highway safety features, (ii) road audits and (iii) accident data collection and processing. The recruitment of the consultant recently started, about four years after the target date set in Staff Appraisal Report.

As mentioned in section 3.1.3, the Danida supported Transport Sector Support Programme has an institutional component for environment and safety. The safety sub-component is to provide institutional support to the GHA Road Safety Unit and to prepare a feasibility study (to draw up a programme for long-term assistance by Danida). This feasibility study will, in turn, build upon a 1998 review funded by Danida, which recommended focusing support on (i) national road safety awareness and training campaigns (NRSC), (ii) VELD in its commercial re-orientation, (iii) Ghana police and (iv) accident analysis, black spot identification and remedial works through GHA and BRRI. The Danida project started in September 1999, with a one-year phase to identify specific needs for long-term support. In March 2000 a design for technical assistance in the field of safety was prepared and this is presently being discussed with the government.

Decisions on the Danida proposal have not yet been taken, but as the technical assistance from the World Bank and Danida are both aimed at GHA it might be that they partly overlap.

From the interviews of the Evaluation Mission with the stakeholders and donors it appeared that road safety has increased priority. However, little concrete action in road safety have been undertaken in the period 1996-2000:

- ▲ NRSC: the legal status of the committee has been approved in 1999 and a small allocation from the Road Fund has been given, but few other activities have been undertaken. NRSC is still not operating effectively, because it has no board and no director. Above all, a long-term policy and action plan, with a prioritisation of objectives and actions, is still missing. In 1996 a consultant prepared a general road safety action plan, but the status of this document is unclear.
- ▲ Road agencies: the Road Safety Unit of GHA has been established, but is still understaffed. As with NRSC, above all GHA does not have a long-term strategy and policy, with a prioritisation of objectives and actions, and there are no procedures of screening and approving projects on safety aspects. A budget for road safety was included in the budget of the Maintenance Department. In January 2000 the Road Safety Unit submitted an action programme for the year 2000, requesting funding of in total Cedi 11.8 billion (about US\$ 3.4 million, at the exchange rate of that moment). The proposal is to use these funds almost entirely for purchasing road safety devices and rumble strips. A small amount is also proposed to be used for a review of road designs standards, road safety auditing, road safety patrol and accident black spot studies (together with BRRI). A decision on this proposal is still awaited.

At DFR and DUR little active attention is given to incorporation of safety aspects in the organisations, but DUR recently appointed a staff member for safety and in March 1999 it prepared a proposal "institutional development of road safety in the urban units of DUR", estimated to cost US\$ 1.6 million (almost entirely for hardware and software).

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- ▲ BRRI: the institute is in charge of the data collection, processing and analysis, but it is far behind schedule. The most recent data received by GHA cover the years 1993-1994. An exception is the Danida-funded work on accident data in three regions (February 2000). A major problem in this respect is funding and also that the computers and analytical software are almost ten years old and outmoded. In addition, the accident collection form designed and introduced nationally in the beginning of the 1990s is not consistently used by the police. With poor inputs of data, the analysis of data can of course never be good.
- ▲ DVLA: driver and vehicle examination and licensing experienced numerous problems. Firstly, only a part of the compulsory bi-annual examinations is carried out and the testing stations equipped in previous projects are not effectively used. Also driver examination leaves a lot to be desired.

3.3 Non-motorised transport

Introduction

The issue of NMT can be divided in two main areas:

- ▲ NMT in rural areas aimed at improving rural economic and social development through timesaving and productivity gains resulting from various types of NMT, such as wheelbarrows and bicycles.
- ▲ NMT in urban areas aimed at improving safety and environment through the creation of pedestrian and bicycle paths.

NMT in rural areas

Regarding the first area, NMT in rural areas, not much direct evidence has been found of NMT projects within the HSIP programme. A Rural Travel and Transport Programme (RTTP) was launched in May 1999. Current rural travel and transport is still dominated by head loading and walking.

NMT in urban areas

A study to assess the transport and mobility needs of urban poor carried out in 1992 revealed that 62 % of households in Accra own at least one bicycle, but their use is restricted to local roads, where traffic is light.

Activities undertaken in NMT

Within the Urban Transport Project (UTP) the following items were defined in the Terms of Reference:

- ▲ Pilot bike paths: the construction of 50 kilometres of dedicated cycle paths connecting low and middle-income residential areas to commercial and business districts. In addition, paths will be included in the plans for rehabilitated roads. Paths will be wide enough to facilitate alternative modes of NMT, such as hand-pushed carts.
- ▲ Integrated bike path network study: the pilot will be the start for an integrated bike path network in Accra. A masterplan study will be undertaken.
- ▲ Assess improvement to low income areas and markets: this item is not considered directly related to NMT, nevertheless, there are some NMT elements, such as the construction of dedicated tracks or lanes for NMT, such as hand-carts between lorry parks and markets.

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In table 1 an overview is presented of NMT achievements within the HSIP period (1996-2000) as presented in MRT review reports.

Table 1 NMT achievements within the HSIP period

Year	NMT achievements
1996	▲ DUR has formulated plans for a pilot project aimed at encouraging a wider use of bicycles.
1997	▲ GoG has continued to implement NMT initiatives under ongoing donor projects. ▲ Facilities are being provided in some of the urban areas for safe and effective utilisation of NMT.
1998	▲ NMT continues to be supported by the GoG. Facilities have been provided in some of the urban areas for safe and effective use of NMT. ▲ The RTTP was launched in May 1999.
1999	▲ All three phases of NMT transport facilities within UTP were finalised ² . The commissioning of the paths was planned for January 2000.

Table 1 indicates that the majority of the NMT efforts are concentrated within the UTP. Below NMT achievements within UTP are presented based on a *the Data and Completion Report and Socio-Economic Impact Assessment and Analysis*.

Within 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 bike paths and access roads to certain low-income communities in Accra has been to the advantage of the poor. Associated benefits include:

- ▲ 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.

Regarding the NMT modes some words of advice 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 multi-disciplinary approach to urban projects particularly NMT promotion and development, gives better perception to the potential user, eliminate usage problems such as encroachment, encourages ownership by the user.
- ▲ In the absence of parks, NMT paths present opportunities for learners particularly girls to use bicycles.

² Phase 1 along Nima drain through Samora Machel Road to CBD, phase 2 along the Ring Road and phase 3 from South Industrial Area along railway line to Agbogbloshie.

³ Municipal Development Collaborative LTD, February 2000.

4 EVALUATION

4.1 Relevance

Environment

In the Policy Statement of February 1996, inclusion of environmental issues was one of the sub-objectives in line with the general policy of the government in the field of the environment. The Government of Ghana is giving increasing attention to environmental issues, as was shown in the National Environmental Action Plan (NEAP, 1991) and by the establishment of the Environmental Protection Agency (EPA), whose role and legislative position is specified in the Environmental Protection Agency Act (Act 490, 1994). The inclusion of environmental aspects in the road sub-sector is, therefore, in line with the general government policy.

In interviews with the Evaluation Mission all donors stressed that Environmental Impact Assessment is an integral part of their road projects and programmes. In addition, the World Bank, Danida and DFID have specific projects in the field of environment (mainly institutional strengthening), and this is fully in line with their policies:

- ▲ World Bank: in the document “Ghana and the World Bank” the environment is one of the key issues to be addressed and ranks amongst the highest funding priorities.
- ▲ Danida: in the policy document “sector policy for transport infrastructure” environmental sustainability is listed as one of the cross-cutting themes that has high priority in the overall policies of Danish development assistance. The Danida policy document also mentions the possibility of support to environmental units in the responsible organisation and to develop policies and transport-specific guidelines for assessment of environmental problems and impacts.
- ▲ DFID: in the Country Strategy Paper (July 1998) it is stated that DFID will support a number of sectors (one of them being rural infrastructure) and that within this sector-wide approach environmental issues be incorporated.

Road safety

In the Policy Statement of February 1996 road safety is one of the objectives of the road sub-sector programme and it is also included in the mission statements of the involved road agencies. Given the alarming and worsening incidence of road accidents attention to road safety is relevant.

In interviews with the Evaluation Mission all donors said that road safety features prominently in road projects and programmes, in the first place in the design of road maintenance and rehabilitation projects. In addition, the World Bank and Danida are involved in specific road safety programmes, and especially in the case of Danida this is in line with the explicit importance attached to road safety:

- ▲ World Bank: in the previous road programmes 1-2% of funds are allocated to specific road safety issues, but in HSIP this is reduced significantly.
- ▲ Danida: in the policy document “sector policy for transport infrastructure” it is stated that road safety is of utmost importance. Danida emphasises attention to road safety measures as part of the design and non-technical measures (enforcement, vehicle condition, drivers’ attitudes, and information campaigns). According to this policy document, Danida may also give support to governments in setting up systems of

road safety audits, planning and monitoring in order to institutionalise these measures. This policy is followed in Ghana.

Non-motorised transport

Non-motorised transport fits into both GoG and donors policy. The GoG has recognised the demand for bike paths and other NMT modes which has resulted in the inclusion of some NMT elements in the GoG policy and donor financed projects. In general donors are positive towards NMT projects, especially given the relation to poverty and gender impact in rural areas and safety impact in urban areas. Although NMT fits within both GoG and donor policy, the HSIP period has not seen a large number of NMT projects.

4.2 Effectiveness and sustainability

Environment

In the Policy Letter of February 1996 three targets are set, viz. (i) monitor design and implementation of elected road projects which might have considerable environmental impacts; (ii) guidelines for environmental considerations will be prepared, as well as training courses based on the guidelines; and (iii) all concerned staff in the road agencies will be exposed to the training courses, and consultants will also be invited to participate.

The first target has been achieved to a certain extent, mainly in GHA: supervised by the Environmental Unit of GHA EIAs have been carried out in most donor-financed projects; the Environmental Unit of GHA prepared some EIAs for government-financed projects, it monitored some projects of GHA (although not on a systematic basis) and it reviewed one road design.

The second and third targets aim at institutional strengthening. In this field three donors have been (or will be) active, but a lot of work still needs to be done: GHA has established an Environmental Unit, but the budget for staff and recurrent expenditures is not sufficient (because the Ministry of Finance does not allow recruitment of new staff); the drafted environmental guidelines are still awaiting approval by the Environmental Protection Agency; the policy and action plan is not prepared; procedures for screening and approval of projects are not established; guidelines for financial penalties for contractors have not been developed. Regarding the third target, viz. training of staff the road agencies and consultants, this is still to be done.

The emphasis in these programmes is put on institutional and organisational aspects and as such the prospects for institutional sustainability are good. However, without the decision of the Ministry of Finance on funding of staff and recurrent expenditures and without the preparation of action programmes, it is feared that this technical assistance will not lead to financial sustainability.

DFR and DUR do not have Environmental Units, they have not assigned specific staff for environmental aspects and the environmental management capacities of the agencies are negligible.

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In the period 1996-2000 important steps towards a proper legal framework for environmental issues have been made, thereby improving the prospects of legislative sustainability:

- ▲ The Government of Ghana formalised the guidelines for environmental assessment impact in the Environmental Assessment Regulations. According to these regulations road construction projects need a full Environmental Impact Assessment, in order to get an Environmental Permit, but it still needs to be clarified whether these are also required for maintenance and rehabilitation/reconstruction of existing roads.
- ▲ In 1997 the Environmental Unit of GHA prepared draft guidelines for environmental guidelines and submitted them to EPA for approval. This has still not happened yet and it is unclear why it is taking such a long time.

Road safety

In the pre-HSIP period the focus was on hardware and software, and training of staff of NRSC, GHA and DUR, BRRI, VELD (DVLA), while the corresponding institutional and organisational developments stalled. According to a Danida study (reviewing road safety measures over the period 1988-1997) the gains of these pre-HSIP programmes have not been sustained and consolidated: hardware and software are insufficiently used, and trained staff is no longer involved in road safety.

According to the Policy Letter of February 1996 the aim in the field of road safety during the period 1996-2000 is strengthening of the institutional arrangements. In this respect the Government would review the function and composition of the NRSC, put the NRSC on a firm legislative basis by including it in the proposed Roads and Highway Act, and would provide modest funds to the NRSC through the restructured Road Fund.

The present approach, supported by the World Bank and Danida, has indeed an institutional focus. In the period 1996-2000 some positive developments have taken place in the field of institutional strengthening: the legal status of NRSC has been approved (albeit at a rather late stage) and a modest allocation of the Road Fund has been made in 1999 and 2000; a Road Safety Unit has been established in GHA. However, these new institutions are not yet fully operational: NRSC does not yet have a Board and long-term policy and action plan; the GHA Road Safety Unit does not yet have a budget (although some road safety measures are included in the budget of the Maintenance Department) and it is understaffed (because the Ministry of Finance does not allow recruitment of new staff), and long-term policy and action plan is not yet developed. At DFR and DUR little active attention to road safety has been given.

The emphasis on institutional and organisational aspects means that prospects for sustainability are better than in previous programmes. However, without the decision of the Ministry of Finance on funding of staff and recurrent expenditures and without the development of action programmes, it is feared that also this technical assistance will not lead to financial sustainability. In the period considered the legal framework of the NRSC has been approved and as such the sustainability of the legislative point of view has been secured.

Non-motorised transport

When assessing the effectiveness of NMT activities the first conclusion is that no concrete objectives have been defined. In the 1996 policy letter it is stated that the GoG is committed to continuing its support for NMT initiated under ongoing Bank-financed

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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.

Regarding the facilities in urban areas, UTP has provide in three lots a number of NMT paths (lot 1: 3.5 km, lot 2: 11 km, lot 3: 7 km). All lots have been completed within the HSIP period. It should be noted that all paths receive a score of fair quality within the UTP evaluation⁴.

It is difficult to say to what extent the GoG has succeeded in promoting NMT. Within UTP a survey was carried out for the NMT paths in Accra. The study was to collect information on the promotion of the wider use of bicycles. 300 persons were interviewed, some of the results are presented below:

- ▲ 36.5 % of respondents noted that NMT paths facilitate safer movement.
- ▲ 34.8 % indicated that the construction of NMT paths made journeys shorter.
- ▲ 20.1 % indicated that NMT paths facilitate faster movement while 8.7 percent noted that the construction of paths was a good idea for the city.
- ▲ Despite the good reasons for choosing the path, 23.7 % complained about the rough nature of the path, 8.7 % indicated that the paths were not comfortable, 5.7 % considered them narrow and 30 % considered them not safe.

Although the survey presents some mixed results, there is a generally positive reaction among the respondents towards the NMT paths.

The pilot of setting up bicycle paths in Accra could be the start of creating an integrated system of NMT modes of transport. The GoG then needs to promote the use of NMT and the users need to be convinced of the benefits. If these conditions are met NMT could be launched on a larger scale, also outside Accra, creating a sustainable basis for NMT. Within the HSIP period no significant efforts are being made to promote NMT in the rural areas.

4.3 Efficiency

Environment

In the period 1996-2000 the main attention in the field of environmental issues was given to institutional strengthening and three donors provided technical assistance: the World Bank financed a consultant and operating costs of the Environmental Unit of GHA; programmes financed by Danida and DFID are still in the design phase.

The World Bank project is relatively low cost (it uses a local consultant instead of foreign experts). The DFID and Danida projects are still to start and assessment of efficiency are not yet possible. DFID will concentrate its technical assistance on DFR and it has carefully looked at possible overlaps with the Danida programme. Although decisions on the Danida programme are still to be taken it is unlikely that the two projects will overlap.

⁴ Source: Data and Completion Report and Socio-Economic Impact Assessment and Analysis.

Road safety

In the Highway Sector Investment Programme no major expenditures were foreseen specifically for road safety. The technical assistance from Danida is still in the initial phase of programme design and technical assistance financed by the World Bank is being tendered, making it too early to judge its efficiency. On the other hand, it can be argued that the efficiency of the technical assistance is reduced because the World Bank project will only start in the very last part of the programme (3-4 years later than planned) and, although decisions on the Danida component are still to be taken, it might be that the Danida and World Bank project overlap.

Non-motorised transport

Overlooking the Highway Sector Investment Programme the most concrete NMT project is within the UTP. The realisation of the three lots is presented in table 2.

Table 2 Implementation of NMT element within UTP

	<i>Contract duration (months)</i>		<i>Contract costs (million Cedis)</i>	
	<i>Proposed</i>	<i>actual</i>	<i>proposed</i>	<i>actual</i>
Lot 1	6	22	1,81	1,79
Lot2	6	9	0,89	0,39
Lot3	6	10	0,98	0,67

The construction of the NMT paths are clearly not with the programmed period, however, the actual contact costs are well within the programmed budget.

In terms of efficiency it would be advisable to, where relevant, include pedestrian and bicycle paths in the design of new roads.

4.4 Impact

Environment

The increased attention for environmental issues in the road sub-sector, in the form of Environmental Impact Assessments for major projects of GHA and monitoring of mitigation measures during implementation, should have a positive impact on the environment. However, a systematic overview of the results achieved has not been prepared and it is thus not possible to quantify impact.

Road safety

The impact of road safety policies and measures should first of all be visible in a reduction of road accidents. However, quantitative targets have not been set in the Policy Statement of February 1996 and as such the impact is difficult to assess. Reliable figures on road accidents are not available, but from the police accident statistics it can be concluded that the number of accidents increased in the period 1992-1996 (after a reduction in the period 1975-1985). It is unknown what the trend is over the period 1996-2000, but the impression exists that the situation worsened. This can be partly attributed to other factors such as increased car ownership and improved road conditions (leading to increased speeds). In the field of policy and measures for road safety not

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much has been undertaken in the period 1996-2000 and it can tentatively be concluded that this might be one of the reasons for the worsening situation.

Non-motorised transport

Previous studies, such as *Intermediate Means of Transport in Sub-Saharan Africa*⁵, indicate a significant potential positive impact through NMT, notably in the rural areas. However, within HSIP there are few NMT elements included in rural projects.

The urban NMT projects are expected to have a positive impact on safety of NMT users, although concrete evidence is not (yet) available. This also applies to a possible positive impact of NMT paths on deprived areas.

⁵ John D.N. Riverson and Steve Carapetis, *Intermediate Means of Transport in Sub-Saharan Africa*, World Bank technical paper, 1991.

5 LESSONS LEARNED

Environment

GHA has established an Environmental Unit, but its efficient functioning is first of all being affected by external factors, in particular by the present government policy of not allowing recruitment of new staff. This is part of a wider problem of institutional development and can not be addressed as a specific problem in the field of strengthening the Environmental Unit.

Secondly, during the review period the Environmental Unit primarily focused on EIAs. While this is indeed the concrete output, more focus on institutional strengthening is needed from a sustainability point of view. This includes the preparation of a policy and action plan, procedures for screening and approval of projects, and guidelines for financial penalties for contractors.

In this context it can be mentioned as well that in order to make the staff of GHA more familiar with environmental issues in the road sub-sector the Environmental Unit should increase its profile, amongst others by publishing regularly its activities in the GHA newsletter and by inclusion of environmental awareness in regular training sessions. In the field of information supply it is recommended including systematic overviews of the activities undertaken and of the impact of these activities in the Quarterly and Annual Reports of GHA.

DFR and DUR are relatively small organisations and in addition, both are in the process of decentralisation. It is still unknown what the organisational set-up and tasks of DFR and DUR will be in case of full decentralisation (which in itself is only realistic in the long-term). In the short-term it is therefore recommended setting up small environmental units, using the same procedures as GHA.

Road safety

The functioning of NRSC and the GHA Safety Unit is first of all affected by external factors, such as delay in the appointment of the Board of NRSC, the present general government policy of a recruitment stop for new staff, and the modest funding. As in the field of environment, this is part of a wider problem of institutional development and can not be addressed as a specific problem in the field of road safety. With regards to funding, in 1999 and 2000 the NRSC received modest contributions from the Road Fund and it should be discussed whether higher financial contributions from the Road Fund and/or other sources should contribute to financing road safety activities. Partly as a result of this, insufficient attention has been paid to long-term policy and action plans.

At DFR and DUR little active attention to road safety has been given, and at first sight it seems that priority should be given to road safety measures in urban areas and hence to DUR.

Data collection is the basis for assessment of the road safety situation and of the impact assessment, but it is not set up systematically. The main problem is financing and therefore funding should be secured on a long-term basis. In this context the possible role of the Road Fund or other financing sources should be carefully considered.